

**The Role of Agriculture in the Idaho Economy – A Study Based on IMPLAN  
Estimates**

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## **The Role of Agriculture in the Idaho Economy – A Study Based on IMPLAN Estimates**

The purpose of this paper is to study the role of the food-related sectors in the Idaho economy in terms of employment and employee compensation, and the supply and demand of Idaho agricultural commodities and processed foods. The IMPLAN<sup>1</sup> database provides estimates of supply, demand, exports and imports (both domestic and foreign), employee compensation, employment etc., for each sector of the Idaho economy. This paper presents IMPLAN estimates (for 2000) of these economic indicators for the state. A detailed study of IMPLAN estimates can provide valuable insights into the functioning of the Idaho food sector. The output and employment multipliers for the state are also presented in this study.

### **Idaho employment and employee compensation in the food-related sectors**

Table 1 presents Idaho employment, employee compensation (wage bill) and average wage by sector for the year 2000. The farming sector<sup>2</sup>, for example, employed 39,967 individuals and accounted for approximately 5.01 percent of the total state employment. The total wage bill for the sector was about \$342.09 million dollars, which was about 1.73 percent of the total wage bill for the state economy. The average wage for farming was about \$8,559. Among the food-related sectors, 'eating and drinking' accounted for the largest number of jobs, followed by 'farming' and 'food stores'. Among the food-related sectors, the average wage was highest for 'food processing'. Table 1 further reveals that 'farming' and 'food processing' directly accounted for 57,570 jobs (7.2 percent of total state employment), while 'greenhouse and nursery products', 'commercial fishing', 'agricultural services', 'landscape and horticultural services'<sup>3</sup>, 'food stores' and 'eating and drinking' accounted for 79,823 jobs (10 percent of total state employment). The table reveals the importance of food-related retail trade sectors in generating employment in the state economy. The average wage for the food-related sectors (except greenhouse and nursery

products, food processing, and food stores) is considerably below the state average. One reason for the low wages in the food-related sectors is due to the seasonal nature of employment.

**Table 1: ID Employment, employee compensation and average wage by sector (2000)**

Sector Number	Sector	Employment	Percent of total state employment	Employee compensation (\$m)	Percent of total state employee compensation	Average wage (\$)
<b>1</b>	<b>Farms</b>	<b>39,967</b>	<b>5.01</b>	<b>342.09</b>	<b>1.73</b>	<b>8,559</b>
<b>23</b>	<b>Greenhouse and Nursery Products</b>	<b>1,433</b>	<b>0.18</b>	<b>46.40</b>	<b>0.23</b>	<b>32,378</b>
24	Forestry Products	1,121	0.14	9.78	0.05	8,731
<b>25</b>	<b>Commercial Fishing</b>	<b>481</b>	<b>0.06</b>	<b>1.09</b>	<b>0.01</b>	<b>2,258</b>
<b>26</b>	<b>Agricultural- Forestry- Fishery Services</b>	<b>10,492</b>	<b>1.32</b>	<b>66.54</b>	<b>0.34</b>	<b>6,342</b>
<b>27</b>	<b>Landscape and Horticultural Services</b>	<b>5,281</b>	<b>0.66</b>	<b>44.98</b>	<b>0.23</b>	<b>8,517</b>
28	Metal mining	1,428	0.18	80.14	0.40	56,128
37	Coal Mining	4	0.00	0.08	0.00	20,500
38	Oil mining	220	0.03	0.79	0.00	3,573
40	Non-metal mining	1,242	0.16	45.76	0.23	36,849
48	Construction	68,613	8.60	1605.94	8.10	23,406
<b>58</b>	<b>Food processing</b>	<b>17,603</b>	<b>2.21</b>	<b>591.81</b>	<b>2.99</b>	<b>33,619</b>
108	Textiles	106	0.01	1.51	0.01	14,247
124	Apparel	674	0.08	6.68	0.03	9,903
133	Wood products	14,356	1.80	540.81	2.73	37,672
148	Furniture	1,942	0.24	44.89	0.23	23,114
161	Pulp and paper	2,228	0.28	142.26	0.72	63,849
174	Printing and publishing	5,920	0.74	154.55	0.78	26,107
186	Chemicals and allied	2,337	0.29	125.16	0.63	53,557
210	Petroleum products	28	0.00	0.66	0.00	23,461
215	Rubber products	1,468	0.18	40.95	0.21	27,894
221	Leather products	179	0.02	3.44	0.02	19,210
230	Stone, glass and clay	1,603	0.20	54.44	0.27	33,964
254	Primary metals	389	0.05	12.94	0.07	33,254
273	Fabricated metal	3,563	0.45	106.68	0.54	29,942
307	Industrial machinery	10,620	1.33	711.94	3.59	67,038
355	Electrical equipment	14,239	1.79	1294.39	6.53	90,904
384	Transportation equipment	2,616	0.33	91.15	0.46	34,844
400	Scientific instruments	875	0.11	31.70	0.16	36,234
415	Miscellaneous mfg	1,680	0.21	28.77	0.15	17,126
433	Transportation	22,442	2.81	604.04	3.05	26,916
440	Transportation Services	518	0.06	11.24	0.06	21,697
441	Communications	6,276	0.79	237.08	1.20	37,775
443	Utilities	3,255	0.41	186.74	0.94	57,369
447	Wholesale Trade	35,619	4.47	1215.68	6.13	34,130
448	Retail Trade	73,564	9.22	1176.72	5.94	15,996
<b>450</b>	<b>Food Stores</b>	<b>20,798</b>	<b>2.61</b>	<b>500.29</b>	<b>2.52</b>	<b>24,055</b>
<b>454</b>	<b>Eating &amp; Drinking</b>	<b>41,338</b>	<b>5.18</b>	<b>421.51</b>	<b>2.13</b>	<b>10,197</b>

456	Banking, insurance and real estate	47,572	5.97	858.79	4.33	18,052
463	Hotels and Lodging Places	9,767	1.22	142.50	0.72	14,590
464	Personal services	13,671	1.71	79.74	0.40	5,832
469	Business services	40,646	5.10	687.13	3.47	16,905
477	Automotive services	9,007	1.13	143.57	0.72	15,940
480	Repair services	4,613	0.58	48.73	0.25	10,563
483	Motion Pictures	1,833	0.23	16.96	0.09	9,252
484	Recreation services	14,058	1.76	139.89	0.71	9,951
490	Health services	45,276	5.68	1382.03	6.97	30,525
494	Legal Services	4,873	0.61	148.91	0.75	30,558
495	Education services	9,257	1.16	127.45	0.64	13,768
498	Social services	13,911	1.74	239.43	1.21	17,212
502	Non-profit organizations	9,333	1.17	154.30	0.78	16,533
506	Professional services	33,405	4.19	943.53	4.76	28,245
510	State & local non-ed government	92,132	11.55	2938.41	14.83	31,893
513	Federal non-military	27,705	3.47	1147.79	5.79	41,429
516	Special sectors	0	0.00	0.00	0.00	0
525	Domestic Services	3,900	0.49	35.89	0.18	9,203
	<b>Totals</b>	<b>797,476</b>	<b>100.00</b>	<b>19816.63</b>	<b>100.00</b>	<b>24,849</b>

Table 2 presents Idaho employment, employee compensation and average wage for the food-related sectors. The food-related sectors directly accounted for approximately 17 percent of the total state employment, and approximately 10 percent of the total state wage bill. The average wage for the food-related sectors was approximately \$14,692. The average wage for the non-food sectors was about \$26,955, while the average wage for the state as a whole was about \$24,849. Table 2 reveals that the average wage for the ‘food processing’ sectors (Sectors 58 – 103) is higher than the average wage for the ‘farming sectors’ (Sector 1 – 21) in most cases. Among the ‘farming’ sectors, the highest employment is in ‘hay and pasture,’ followed by ‘food grains’ and ‘vegetables’. The highest average wage is in ‘tree nuts,’ followed by ‘vegetables’ and ‘fruits’. Among the ‘food processing’ sectors, the highest employment is in ‘frozen fruits, juices and vegetables’, followed by ‘dehydrated food products’. The highest average wage is in ‘distilled liquor’ followed by ‘shortening and cooking oils.’

**Table 2: ID employment, employee compensation and average wage for food related sectors (2000)**

Sector Number	Sector	Employment	Percent of total state employment	Employee compensation (\$m)	Percent of total state employee compensation	Average wage (\$)
1	Dairy Farm Products	3,016	0.378	64.23	0.324	21,296
2	Poultry and Eggs	62	0.008	1.76	0.009	28,435
3	Ranch Fed Cattle	2,728	0.342	22.73	0.115	8,333
4	Range Fed Cattle	1,436	0.180	11.50	0.058	8,006
5	Cattle Feedlots	1,143	0.143	24.73	0.125	21,639
6	Sheep- Lambs and Goats	893	0.112	1.72	0.009	1,930
7	Hogs- Pigs and Swine	59	0.007	0.50	0.003	8,543
8	Other Meat Animal Products	24	0.003	0.16	0.001	6,617
9	Miscellaneous Livestock	1,542	0.193	9.24	0.047	5,992
11	Food Grains	4,397	0.551	14.09	0.071	3,203
12	Feed Grains	1,404	0.176	6.58	0.033	4,683
13	Hay and Pasture	12,717	1.595	22.06	0.111	1,735
14	Grass Seeds	2,405	0.302	1.99	0.010	827
16	Fruits	327	0.041	9.24	0.047	28,263
17	Tree Nuts	19	0.002	1.00	0.005	53,059
18	Vegetables	4,075	0.511	135.83	0.685	33,333
19	Sugar Crops	2,478	0.311	7.98	0.040	3,221
20	Miscellaneous Crops	686	0.086	3.27	0.016	4,763
21	Oil Bearing Crops	86	0.011	0.49	0.002	5,663
58	Meat Packing Plants	1,473	0.185	44.55	0.225	30,242
59	Sausages and Other Prepared Meats	769	0.096	19.97	0.101	25,972
60	Poultry Processing	3	<0.001	0.07	<0.001	24,000
62	Cheese- Natural and Processed	1,095	0.137	40.03	0.202	36,553
63	Condensed and Evaporated Milk	110	0.014	3.36	0.017	30,494
64	Ice Cream and Frozen Desserts	21	0.003	0.50	0.003	23,857
65	Fluid Milk	389	0.049	14.89	0.075	38,275
67	Canned Fruits and Vegetables	855	0.107	24.27	0.122	28,381
68	Dehydrated Food Products	2,896	0.363	88.66	0.447	30,612
69	Pickles- Sauces- and Salad Dressings	352	0.044	10.18	0.051	28,908
70	Frozen Fruits- Juices and Vegetables	5,905	0.740	206.07	1.040	34,897
71	Frozen Specialties	4	0.001	0.09	<0.001	21,500
72	Flour and Other Grain Mill Products	34	0.004	1.06	0.005	31,026
74	Rice Milling	3	<0.001	0.09	<0.001	28,324
75	Blended and Prepared Flour	11	0.001	0.22	0.001	19,904
76	Wet Corn Milling	90	0.011	3.02	0.015	33,515
78	Prepared Feeds- N.E.C	423	0.053	16.51	0.083	39,020
79	Bread- Cake- and Related Products	128	0.016	4.76	0.024	37,156
80	Cookies and Crackers	39	0.005	1.55	0.008	39,691
81	Sugar	1,431	0.179	58.32	0.294	40,755
82	Confectionery Products	187	0.023	9.85	0.050	52,648
83	Chocolate and Cocoa Products	3	<0.001	0.07	<0.001	22,667

89	Animal and Marine Fats and Oils	14	0.002	0.57	0.003	40,334
90	Shortening and Cooking Oils	2	<0.001	0.11	0.001	54,500
91	Malt Beverages	51	0.006	1.48	0.007	28,997
92	Malt	76	0.010	4.05	0.020	53,263
93	Wines- Brandy- and Brandy Spirits	65	0.008	1.40	0.007	21,507
94	Distilled Liquor- Except Brandy	2	<0.001	0.13	0.001	63,532
95	Bottled and Canned Soft Drinks & Water	324	0.041	13.38	0.068	41,302
96	Flavoring Extracts and Syrups- N.E.C.	3	<0.001	0.07	<0.001	22,333
97	Canned and Cured Sea Foods	11	0.001	0.09	<0.001	8,089
98	Prepared Fresh Or Frozen Fish Or Seafood	484	0.061	12.79	0.065	26,420
99	Roasted Coffee	6	0.001	0.05	<0.001	7,832
101	Manufactured Ice	19	0.002	0.35	0.002	18,533
103	Food Preparations- N.E.C	325	0.041	9.33	0.047	28,695
23	Greenhouse and Nursery Products	1,433	0.180	46.40	0.234	32,378
25	Commercial Fishing	481	0.060	1.09	0.005	2,258
26	Agricultural- Forestry- Fishery Services	10,492	1.316	66.54	0.336	6,342
27	Landscape and Horticultural Services	5,281	0.662	44.98	0.227	8,517
450	Food Stores	20,798	2.608	500.29	2.525	24,055
454	Eating & Drinking	41,338	5.184	421.51	2.127	10,197
	<b>Sub-total (food-related sectors)</b>	<b>136,923</b>	<b>17.170</b>	<b>2011.70</b>	<b>10.152</b>	<b>14,692</b>
	<b>Rest of the WA economy</b>	<b>660,553</b>	<b>82.830</b>	<b>17804.93</b>	<b>89.848</b>	<b>26,955</b>
	<b>Totals</b>	<b>797,476</b>	<b>100.000</b>	<b>19816.63</b>	<b>100.000</b>	<b>24,849</b>

### **Idaho supply and demand of agricultural commodities and processed foods**

The relationship between regional demand and supply of agricultural products assumes importance in the framework of regional models of agriculture. A region produces agricultural products for consumption within the region, and for exports. In case of regional models, exports imply both domestic and foreign exports. Similarly, a region imports agricultural products, both from domestic and foreign sources, to meet the demands of industries and consumers (households, government, etc.) in the region. The demand that is fulfilled by local producers assumes importance, because, the higher the proportion of demand fulfilled by local producers, higher is the amount of economic impact (in an input-output sense) generated in the region.

In this study we use the year 2000 SAM (Social Accounting Matrix) of the Idaho economy to address supply/demand issues relating to the food system. We examine the regional supply and demand of agricultural products based on the 2000 IMPLAN-based Idaho SAM model. Tables 3 and 4 present the regional supply (and exports) and demand (and imports) of agricultural commodities, respectively. Tables 6 and 7 present the regional supply (and exports) and demand (and imports) of processed food products, respectively. Tables 5 and 8 present total supply and total demand of agricultural commodities and processed foods, respectively.

In Table 3, for example, the state produces \$738.760 million of ‘dairy farm products’. Foreign exports account for \$0.904 million, while domestic (outside of Idaho but inside the United States) exports account for \$521.298 million, implying that most of the production is sold outside Idaho. Regional supply (amount sold in Idaho) is worth \$216.558 million. The percentage of the total production of ‘dairy farm products’ sold in Idaho is 29.31 percent, while the percentage sold in the US (Idaho and rest of the US) is 99.99 percent. Table 4 shows that industry demand (industries that use ‘dairy farm products’ as inputs in production) is worth \$250.04 million, while \$.516 million of ‘dairy farm products’ is purchased by consumers, government etc (final demand). Industry imports are worth \$33.928 million and imports by consumers, government etc (final imports) are worth \$0.07 million. Regional demand (\$216.56 million) is the demand that is met by Idaho supply. The last column of Table 4 indicates that 86.431 percent of the total demand for ‘dairy farm products’ in the state is met by regional (in Idaho) suppliers.

Tables 3 and 4 reveal that in the case of 4 sectors – ‘food grains’, ‘feed grains’, ‘hay and pasture’, and ‘grass seeds’, both percentage supply sold in Idaho and percentage of total demand fulfilled by Idaho industries are low, implying that these sectors export most of their output, while most of the regional demand is fulfilled by imports. This is partially due to the fact that the ‘food grains’ sector, for example, does not represent a single commodity, but differentiated products.

Therefore, the region exports the products that are produced widely in the state, and imports the products that are not produced in the state due to a variety of reasons. As most of the wheat, for example, grown in the state is good for producing noodles etc, the wheat is exported, while the wheat required for producing bread, cake and related products that is not produced widely in the state is largely imported. Another example is rice, which is classified as a food grain. Idaho imports rice, but does not export rice. It is important to remember the commodity aggregation that occurs when SAM-based models are used for the study of the supply and demand of agricultural commodities. What appears as cross-hauling (the simultaneous importing and exporting of the same commodity) is sometimes the trade of different commodities that are grouped in the same Standard Industrial Classification (SIC) sector, but in fact are really different commodities. For example, wheat and rice are both classified as food grains.

Table 3 reveals that there were two important commodities that were not produced at all in Idaho, - 'cotton' and 'tobacco'. This implies that all of the demand for these commodities was met by imports (Table 4). This implies a potential for import substitution. However, most agricultural economists would agree that the production of 'tobacco', for example, in Idaho probably would be a money losing enterprise and tobacco would not be able to compete with other agricultural commodities for the necessary land, labor and capital.

Turning to crops, the grains tend to be characterized by excess supply with most of that supply being exported out of Idaho and much of Idaho demand being met by out-of -state sources (Tables 3, 4). In the case of 'vegetables', they too are characterized by excess supply, and a large portion of total supply is exported, however, these crops are also used to meet a relatively high portion of in-state demand. For example, 80 percent of the Idaho demand for 'vegetables' is met from in-state sources (Table 4).

**Table 3: Idaho regional supply and exports of agricultural products (2000)**

	Commodity	Total Commodity Supply (\$m)	Foreign Exports (\$m)	Domestic Exports (\$m)	Regional Supply (\$m)	Supply Sold in ID (%)	Supply Sold in US (%)
1	Dairy Farm Products	738.760	0.904	521.298	216.558	29.31	99.999
2	Poultry and Eggs	13.240	0.148	4.875	8.217	62.06	99.989
3	Ranch Fed Cattle	233.417	1.666	97.563	134.188	57.49	99.993
4	Range Fed Cattle	116.416	0.612	39.943	75.861	65.16	99.995
5	Cattle Feedlots	397.105	2.621	180.324	214.160	53.93	99.993
6	Sheep- Lambs and Goats	18.177	1.040	11.730	5.407	29.75	99.943
7	Hogs- Pigs and Swine	6.116	0.012	0.000	6.104	99.81	99.998
8	Other Meat Animal Products	1.938	0.000	1.381	0.557	28.72	100.000
9	Miscellaneous Livestock	62.721	10.754	35.589	16.378	26.11	99.829
10	Cotton	0.000	0.000	0.000	0.000	0.00	0.000
11	Food Grains	276.469	182.518	92.089	1.862	0.67	99.340
12	Feed Grains	373.052	35.049	275.042	62.961	16.88	99.906
13	Hay and Pasture	197.590	7.925	150.171	39.493	19.99	99.960
14	Grass Seeds	44.658	10.552	32.515	1.591	3.56	99.764
15	Tobacco	0.000	0.000	0.000	0.000	0.00	0.000
16	Fruits	24.486	5.693	6.989	11.805	48.21	99.768
17	Tree Nuts	1.579	0.201	1.106	0.271	17.18	99.873
18	Vegetables	681.317	86.676	442.922	151.719	22.27	99.873
19	Sugar Crops	236.129	74.111	41.760	120.259	50.93	99.686
20	Miscellaneous Crops	35.071	13.532	17.797	3.742	10.67	99.614
21	Oil Bearing Crops	5.098	2.168	2.511	0.418	8.21	99.575

**Table 4: Idaho regional demand and imports of agricultural products (2000)**

	Commodity	Industry Demand (\$m)	Final Demand (\$m)	Industry Imports (\$m)	Final Imports (\$m)	Regional Demand (\$m)	Demand Fulfilled by ID (%)
1	Dairy Farm Products	250.04	0.516	33.928	0.070	216.56	86.431
2	Poultry and Eggs	10.04	13.666	6.560	8.929	8.22	34.663
3	Ranch Fed Cattle	141.595	0	7.408	0	134.19	94.769
4	Range Fed Cattle	78.969	0	3.108	0	75.86	96.064
5	Cattle Feedlots	223.3	0	9.140	0	214.16	95.907
6	Sheep- Lambs and Goats	6.159	0	0.751	0	5.41	87.798
7	Hogs- Pigs and Swine	97.131	0	91.027	0	6.10	6.285
8	Other Meat Animal Products	0.559	0	0.002	0	0.56	99.574
9	Miscellaneous Livestock	13.042	9.869	3.719	2.814	16.38	71.487
10	Cotton	0.064	0	0.064	0	0	0
11	Food Grains	7.3	0	5.438	0	1.86	25.509
12	Feed Grains	347.31	2.085	284.725	1.709	62.96	18.020
13	Hay and Pasture	217.997	0.893	178.665	0.732	39.49	18.042
14	Grass Seeds	4.554	0.216	3.034	0.144	1.59	33.359
15	Tobacco	0.076	0	0.076	0	0	0

16	Fruits	6.841	45.866	5.309	35.593	11.80	22.397
17	Tree Nuts	0.366	2.683	0.333	2.445	0.27	8.896
18	Vegetables	139.964	49.205	27.710	9.742	151.72	80.203
19	Sugar Crops	120.959	0	0.700	0.00	120.26	99.421
20	Miscellaneous Crops	17.288	0.171	13.582	0.134	3.74	21.435
21	Oil Bearing Crops	3.263	0.3	2.881	0.264	0.42	11.743

The total supply (production) and total demand for agricultural commodities, for Idaho, is presented in Table 5. The table reveals that for ‘dairy farm products’, ‘food grains’, ‘grass seeds’, and ‘vegetables’, total supply exceeds total demand by relatively large amounts.

**Table 5: Total supply and total demand of agricultural products (2000)**

	Commodity	Total supply (\$m)	Total demand (\$m)	Total supply/Total demand (%)
1	Dairy Farm Products	738.76	250.556	294.8482575
2	Poultry and Eggs	13.24	23.706	55.85083945
3	Ranch Fed Cattle	233.417	141.595	164.848335
4	Range Fed Cattle	116.416	78.969	147.4198736
5	Cattle Feedlots	397.105	223.3	177.8347515
6	Sheep- Lambs and Goats	18.177	6.159	295.1290794
7	Hogs- Pigs and Swine	6.116	97.131	6.296650915
8	Other Meat Animal Products	1.938	0.559	346.6905188
9	Miscellaneous Livestock	62.721	22.911	273.7593296
10	Cotton	0	0.064	0
11	Food Grains	276.469	7.3	3787.246575
12	Feed Grains	373.052	349.395	106.7708467
13	Hay and Pasture	197.59	218.89	90.26908493
14	Grass Seeds	44.658	4.77	936.2264151
15	Tobacco	0	0.076	0
16	Fruits	24.486	52.707	46.45682737
17	Tree Nuts	1.579	3.049	51.7874713
18	Vegetables	681.317	189.17	360.1612306
19	Sugar Crops	236.129	120.959	195.2140808
20	Miscellaneous Crops	35.071	17.459	200.8763389
21	Oil Bearing Crops	5.098	3.563	143.0816727

Tables 6 and 7 present the same information as Tables 3 and 4 except that the focus is processed foods rather than raw agricultural commodities. Thus, instead of raw milk as summarized in ‘dairy farm products’ in Tables 3 and 4, Tables 6 and 7 present information on the

following products of raw milk: ‘creamery butter’, ‘cheese-natural and processed’, ‘condensed and evaporated milk’, ‘ice cream and frozen deserts’, and finally ‘fluid milk’, each as individual commodities.

In the case of processed milk products Table 6 shows that for ‘creamery butter’ and ‘ice cream and frozen deserts,’ most of the Idaho supply of these products is consumed in Idaho. In the case of ‘creamery butter,’ 100 percent of the supply is absorbed in Idaho. With the other dairy products less than 63 percent of supply is absorbed in-state. However, looking at the demand side, the story is somewhat different. Roughly 63 percent of ‘creamery butter’ demand in Idaho is satisfied in-state. In the case of ‘ice cream and frozen desserts’ 36 percent of the demand is satisfied in-state. Table 7 reveals that for most processed foods there is plenty of room for import substitution based simply on the percent of regional demand that is met by imports. Whether an import substitution strategy makes economic sense for a particular commodity is, of course, a more complicated question.

**Table 6: Idaho regional supply and exports of processed food products (2000)**

	Sector	Total Commodity Supply (\$m)	Foreign Exports (\$m)	Domestic Exports (\$m)	Regional Supply (\$m)	Supply Sold in ID (%)	Supply Sold in US (%)
58	Meat Packing Plants	564.079	67.865	259.214	237.001	42.016	87.969
59	Sausages and Other Prepared Meats	149.124	0.000	63.491	85.633	57.424	100.000
60	Poultry Processing	6.457	0.026	0.000	6.431	99.602	99.602
61	Creamery Butter	3.995	0.000	0.000	3.995	100.000	100.000
62	Cheese- Natural and Processed	418.828	4.354	299.020	115.454	27.566	98.960
63	Condensed and Evaporated Milk	64.28	5.224	18.859	40.197	62.534	91.873
64	Ice Cream and Frozen Desserts	9.254	0.075	0.000	9.179	99.187	99.187
65	Fluid Milk	157.52	0.230	71.005	86.285	54.777	99.854
66	Canned Specialties	7.049	0.000	6.115	0.934	13.257	100.000
67	Canned Fruits and Vegetables	213.963	15.671	193.117	5.175	2.419	92.676
68	Dehydrated Food Products	500.67	139.365	349.362	11.943	2.385	72.164
69	Pickles- Sauces- and Salad Dressings	109.266	4.216	102.509	2.541	2.326	96.142
70	Frozen Fruits- Juices and Vegetables	1,207.79	151.724	1040.959	15.102	1.250	87.438
71	Frozen Specialties	11.092	0.000	10.031	1.061	9.564	100.000
72	Flour and Other Grain Mill Products	9.959	0.561	8.937	0.462	4.635	94.370
73	Cereal Preparations	0.338	0.000	0.000	0.338	100.000	100.000

74	Rice Milling	1.56	0.523	0.781	0.256	16.438	66.476
75	Blended and Prepared Flour	4.846	0.112	4.156	0.578	11.933	97.684
76	Wet Corn Milling	48.693	11.360	35.592	1.741	3.576	76.670
77	Dog- Cat- and Other Pet Food	1.314	0.000	0.769	0.545	41.507	100.000
78	Prepared Feeds- N.E.C	164.438	6.614	151.091	6.733	4.094	95.978
79	Bread- Cake- and Related Products	26.464	0.394	0.000	26.070	98.511	98.511
80	Cookies and Crackers	6.49	0.000	0.000	6.490	100.000	100.000
81	Sugar	561.441	15.460	509.445	36.536	6.508	97.246
82	Confectionery Products	55.213	1.158	48.685	5.370	9.726	97.902
83	Chocolate and Cocoa Products	1.461	0.099	1.223	0.139	9.498	93.240
84	Chewing Gum	6.914	0.000	6.249	0.665	9.619	100.000
85	Salted and Roasted Nuts & Seeds	0.5	0.000	0.279	0.221	44.260	100.000
86	Cottonseed Oil Mills	0.009	0.000	0.000	0.009	100.000	100.000
87	Soybean Oil Mills	0.517	0.000	0.000	0.517	100.000	100.000
88	Vegetable Oil Mills- N.E.C	0.045	0.000	0.000	0.045	100.000	100.000
89	Animal and Marine Fats and Oils	14.461	1.270	7.058	6.133	42.411	91.220
90	Shortening and Cooking Oils	8.143	0.093	0.000	8.050	98.862	98.862
91	Malt Beverages	12.224	0.247	8.869	3.108	25.427	97.979
92	Malt	30.868	2.780	27.499	0.589	1.908	90.993
93	Wines- Brandy- and Brandy Spirits	11.855	1.098	9.290	1.467	12.371	90.738
94	Distilled Liquor- Except Brandy	1.582	0.133	0.990	0.458	28.966	91.568
95	Bottled and Canned Soft Drinks & Water	114.773	0.995	103.272	10.506	9.154	99.133
96	Flavoring Extracts and Syrups- N.E.C.	15.645	0.018	13.068	2.559	16.356	99.884
97	Canned and Cured Sea Foods	3.381	0.622	2.592	0.167	4.928	81.604
98	Prepared Fresh Or Frozen Fish Or Seafood	76.081	0.000	73.888	2.193	2.883	100.000
99	Roasted Coffee	2.796	0.162	0.000	2.634	94.209	94.209
100	Potato Chips & Similar Snacks	4.479	0.000	0.000	4.479	100.000	100.000
101	Manufactured Ice	1.037	0.024	0.017	0.996	96.043	97.715
102	Macaroni and Spaghetti	0.044	0.000	0.000	0.044	100.000	100.000
103	Food Preparations- N.E.C	125.479	6.418	65.089	53.972	43.013	94.886

Table 8 represents the total supply (production) and total demand for processed foods, for the state. The table reveals that for ‘dehydrated food products’, ‘frozen fruits, juices and vegetables’, and ‘malt’, total supply exceeds total demand by relatively large amounts. The table indicates that total demand exceeds total supply for most processed foods.

**Table 7: ID regional demand and imports of processed foods (2000)**

	Commodity	Industry Demand (\$m)	Final Demand (\$m)	Industry Imports (\$m)	Final Imports (\$m)	Regional Demand (\$m)	Demand Fulfilled by ID (\$m)
58	Meat Packing Plants	71.624	185.36	5.570	14.414	237.000	92.224
59	Sausages and Other Prepared Meats	13.482	72.988	0.131	0.707	85.633	99.032
60	Poultry Processing	14.889	104.552	14.087	98.923	6.431	5.384

61	Creamery Butter	2.596	3.73	0.956	1.374	3.996	63.168
62	Cheese- Natural and Processed	79.154	49.857	8.318	5.239	115.453	89.491
63	Condensed and Evaporated Milk	24.888	23.823	4.350	4.164	40.197	82.522
64	Ice Cream and Frozen Desserts	9.653	15.65	6.151	9.973	9.179	36.277
65	Fluid Milk	13.951	83.804	1.637	9.832	86.286	88.268
66	Canned Specialties	1.762	27.767	1.706	26.888	0.935	3.166
67	Canned Fruits and Vegetables	13.41	63.462	12.507	59.190	5.175	6.732
68	Dehydrated Food Products	56.005	9.499	45.793	7.767	11.944	18.235
69	Pickles- Sauces- and Salad Dressings	5.03	29.127	4.656	26.960	2.542	7.442
70	Frozen Fruits- Juices and Vegetables	64.529	37.456	54.974	31.910	15.102	14.808
71	Frozen Specialties	0.149	44.974	0.146	43.917	1.060	2.350
72	Flour and Other Grain Mill Products	10.528	3.306	10.177	3.196	0.461	3.336
73	Cereal Preparations	0.924	37.22	0.916	36.890	0.338	0.887
74	Rice Milling	6.75	4.039	6.590	3.943	0.256	2.372
75	Blended and Prepared Flour	1.543	18.113	1.497	17.580	0.579	2.945
76	Wet Corn Milling	27.98	5.505	26.524	5.219	1.742	5.202
77	Dog- Cat- and Other Pet Food	1.247	32.252	1.226	31.726	0.546	1.631
78	Prepared Feeds- N.E.C	115.369	5.844	108.961	5.519	6.733	5.555
79	Bread- Cake- and Related Products	37.53	77.743	29.042	60.160	26.071	22.616
80	Cookies and Crackers	1.288	39.59	1.083	33.304	6.490	15.877
81	Sugar	138.062	27.877	107.664	21.739	36.535	22.017
82	Confectionery Products	4.959	62.207	4.563	57.233	5.370	7.996
83	Chocolate and Cocoa Products	5.294	3.874	5.214	3.815	0.139	1.515
84	Chewing Gum	0.661	7.907	0.610	7.293	0.665	7.758
85	Salted and Roasted Nuts & Seeds	1.641	10.575	1.611	10.384	0.221	1.810
86	Cottonseed Oil Mills	1.904	0	1.895	0.000	0.009	0.480
87	Soybean Oil Mills	44.918	0.266	44.404	0.263	0.517	1.145
88	Vegetable Oil Mills- N.E.C	11.778	1.856	11.739	1.850	0.045	0.327
89	Animal and Marine Fats and Oils	9.979	0.021	3.859	0.008	6.133	61.330
90	Shortening and Cooking Oils	12.72	14.726	8.989	10.406	8.051	29.334
91	Malt Beverages	14.29	59.674	13.689	57.166	3.109	4.204
92	Malt	0.464	1.706	0.338	1.243	0.589	27.157
93	Wines- Brandy- and Brandy Spirits	2.558	33.827	2.455	32.464	1.467	4.031
94	Distilled Liquor- Except Brandy	5.874	19.348	5.767	18.997	0.458	1.815
95	Bottled and Canned Soft Drinks & Water	9.911	134.013	9.188	124.230	10.506	7.300
96	Flavoring Extracts and Syrups- N.E.C.	16.746	18.027	15.514	16.700	2.559	7.360
97	Canned and Cured Sea Foods	0.144	8.049	0.141	7.885	0.167	2.033
98	Prepared Fresh Or Frozen Fish Or Seafood	17.624	13.597	16.386	12.642	2.193	7.023
99	Roasted Coffee	8.463	17.521	7.605	15.745	2.634	10.138
100	Potato Chips & Similar Snacks	1.341	43.524	1.208	39.179	4.478	9.981
101	Manufactured Ice	0.042	2.329	0.024	1.350	0.996	42.024
102	Macaroni and Spaghetti	0.658	5.625	0.653	5.586	0.044	0.705
103	Food Preparations- N.E.C	0.232	81.796	0.079	27.976	53.973	65.798

**Table 8: Total supply and total demand of processed foods (2000)**

	Commodity	Total supply (\$m)	Total demand (\$m)	Total supply/Total demand (%)
58	Meat Packing Plants	564.079	256.984	219.500
59	Sausages and Other Prepared Meats	149.124	86.471	172.456
60	Poultry Processing	6.457	119.441	5.406
61	Creamery Butter	3.995	6.325	63.162
62	Cheese- Natural and Processed	418.828	129.011	324.645
63	Condensed and Evaporated Milk	64.28	48.711	131.962
64	Ice Cream and Frozen Desserts	9.254	25.302	36.574
65	Fluid Milk	157.52	97.754	161.139
66	Canned Specialties	7.049	29.529	23.871
67	Canned Fruits and Vegetables	213.963	76.872	278.337
68	Dehydrated Food Products	500.67	65.503	764.347
69	Pickles- Sauces- and Salad Dressings	109.266	34.156	319.903
70	Frozen Fruits- Juices and Vegetables	1,207.79	101.985	1184.277
71	Frozen Specialties	11.092	45.123	24.582
72	Flour and Other Grain Mill Products	9.959	13.834	71.989
73	Cereal Preparations	0.338	38.144	0.886
74	Rice Milling	1.56	10.789	14.459
75	Blended and Prepared Flour	4.846	19.656	24.654
76	Wet Corn Milling	48.693	33.485	145.417
77	Dog- Cat- and Other Pet Food	1.314	33.498	3.923
78	Prepared Feeds- N.E.C	164.438	121.213	135.660
79	Bread- Cake- and Related Products	26.464	115.272	22.958
80	Cookies and Crackers	6.49	40.877	15.877
81	Sugar	561.441	165.939	338.342
82	Confectionery Products	55.213	67.166	82.204
83	Chocolate and Cocoa Products	1.461	9.168	15.936
84	Chewing Gum	6.914	8.568	80.696
85	Salted and Roasted Nuts & Seeds	0.5	12.216	4.093
86	Cottonseed Oil Mills	0.009	1.904	0.473
87	Soybean Oil Mills	0.517	45.184	1.144
88	Vegetable Oil Mills- N.E.C	0.045	13.634	0.330
89	Animal and Marine Fats and Oils	14.461	10	144.610
90	Shortening and Cooking Oils	8.143	27.445	29.670
91	Malt Beverages	12.224	73.963	16.527
92	Malt	30.868	2.17	1422.488
93	Wines- Brandy- and Brandy Spirits	11.855	36.385	32.582
94	Distilled Liquor- Except Brandy	1.582	25.222	6.272
95	Bottled and Canned Soft Drinks & Water	114.773	143.924	79.746
96	Flavoring Extracts and Syrups- N.E.C.	15.645	34.773	44.992
97	Canned and Cured Sea Foods	3.381	8.193	41.267
98	Prepared Fresh Or Frozen Fish Or Seafood	76.081	31.222	243.678
99	Roasted Coffee	2.796	25.984	10.760
100	Potato Chips & Similar Snacks	4.479	44.866	9.983

101	Manufactured Ice	1.037	2.371	43.737
102	Macaroni and Spaghetti	0.044	6.283	0.700
103	Food Preparations- N.E.C	125.479	82.028	152.971

### **Idaho balance of trade for agricultural commodities and processed foods**

On the issue of balance of trade in agricultural commodities, Table 9 indicates that the state has a positive trade balance (value of exports exceeds the value of imports). The state exported \$2,391.79 million of agricultural products in 2000, while imports were worth \$740.74 million. The largest exports were by the ‘vegetables’ sector, while the largest imports were by the ‘feed grains’ sector. As with agricultural commodities, Table 10 indicates that the state has a large positive trade balance in case of processed food items. Idaho processed food exports were \$3,931.41 million, while imports were \$1,623.54 million. In case of processed foods, the largest exports were by ‘frozen fruits, juices and vegetables’, while the largest imports were by ‘bottled and canned soft drinks and water.’

**Table 9: Idaho trade balance of agricultural products (2000)**

	Sector	Total Exports (\$m)	Total Imports (\$m)	Trade balance (\$m)
1	Dairy Farm Products	522.202	33.998	488.204
2	Poultry and Eggs	5.023	15.489	-10.466
3	Ranch Fed Cattle	99.229	7.408	91.822
4	Range Fed Cattle	40.555	3.108	37.447
5	Cattle Feedlots	182.945	9.140	173.805
6	Sheep- Lambs and Goats	12.770	0.751	12.019
7	Hogs- Pigs and Swine	0.012	91.027	-91.015
8	Other Meat Animal Products	1.381	0.002	1.379
9	Miscellaneous Livestock	46.343	6.533	39.810
10	Cotton	0.0	0.064	-0.064
11	Food Grains	274.607	5.438	269.169
12	Feed Grains	310.092	286.435	23.657
13	Hay and Pasture	158.097	179.397	-21.300
14	Grass Seeds	43.067	3.179	39.888
15	Tobacco	0.0	0.076	-0.076
16	Fruits	12.681	40.903	-28.221
17	Tree Nuts	1.308	2.778	-1.470

18	Vegetables	529.598	37.451	492.147
19	Sugar Crops	115.870	0.700	115.170
20	Miscellaneous Crops	31.329	13.717	17.612
21	Oil Bearing Crops	4.680	3.145	1.535
	<b>TOTAL</b>	<b>2391.787</b>	<b>740.736</b>	<b>1651.052</b>

**Table 10: Idaho trade balance of processed food products (2000)**

	<b>Commodity</b>	<b>Total Exports (\$m)</b>	<b>Total Imports (\$m)</b>	<b>Trade balance (\$m)</b>
58	Meat Packing Plants	327.078	19.984	307.095
59	Sausages and Other Prepared Meats	63.491	0.837	62.654
60	Poultry Processing	0.026	113.010	-112.985
61	Creamery Butter	0	2.330	-2.330
62	Cheese- Natural and Processed	303.374	13.558	289.816
63	Condensed and Evaporated Milk	24.083	8.514	15.569
64	Ice Cream and Frozen Desserts	0.075	16.124	-16.049
65	Fluid Milk	71.235	11.469	59.766
66	Canned Specialties	6.115	28.594	-22.480
67	Canned Fruits and Vegetables	208.788	71.697	137.091
68	Dehydrated Food Products	488.727	53.560	435.167
69	Pickles- Sauces- and Salad Dressings	106.725	31.615	75.110
70	Frozen Fruits- Juices and Vegetables	1192.683	86.883	1105.800
71	Frozen Specialties	10.031	44.063	-34.032
72	Flour and Other Grain Mill Products	9.497	13.373	-3.875
73	Cereal Preparations	0	37.806	-37.806
74	Rice Milling	1.304	10.533	-9.229
75	Blended and Prepared Flour	4.268	19.077	-14.809
76	Wet Corn Milling	46.952	31.743	15.209
77	Dog- Cat- and Other Pet Food	0.769	32.953	-32.184
78	Prepared Feeds- N.E.C	157.705	114.480	43.225
79	Bread- Cake- and Related Products	0.394	89.202	-88.808
80	Cookies and Crackers	0	34.388	-34.388
81	Sugar	524.905	129.404	395.501
82	Confectionery Products	49.843	61.796	-11.953
83	Chocolate and Cocoa Products	1.322	9.029	-7.707
84	Chewing Gum	6.249	7.903	-1.654
85	Salted and Roasted Nuts & Seeds	0.279	11.995	-11.716
86	Cottonseed Oil Mills	0	1.895	-1.895
87	Soybean Oil Mills	0	44.667	-44.667
88	Vegetable Oil Mills- N.E.C	0	13.589	-13.589
89	Animal and Marine Fats and Oils	8.328	3.867	4.461
90	Shortening and Cooking Oils	0.093	19.395	-19.302
91	Malt Beverages	9.116	70.855	-61.739
92	Malt	30.279	1.581	28.698
93	Wines- Brandy- and Brandy Spirits	10.388	34.918	-24.530

94	Distilled Liquor- Except Brandy	1.124	24.764	-23.640
95	Bottled and Canned Soft Drinks & Water	104.267	133.418	-29.151
96	Flavoring Extracts and Syrups- N.E.C.	13.086	32.214	-19.128
97	Canned and Cured Sea Foods	3.214	8.026	-4.812
98	Prepared Fresh Or Frozen Fish Or Seafood	73.888	29.028	44.860
99	Roasted Coffee	0.162	23.350	-23.188
100	Potato Chips & Similar Snacks	0	40.387	-40.387
101	Manufactured Ice	0.041	1.375	-1.334
102	Macaroni and Spaghetti	0	6.239	-6.239
103	Food Preparations- N.E.C	71.507	28.055	43.451
	<b>TOTAL</b>	<b>3931.409</b>	<b>1623.541</b>	<b>2307.868</b>

### Output and employment multipliers for Idaho

Multipliers capture the direct, indirect and induced effects associated with a change in final demand (consumption by households, government, exports etc.). The direct effect is the effect on the industry that is directly affected by the change in final demand. In other words, it is the change in demand for the products of the industry being directly affected. The indirect effect reflects the change in production of industries that are linked to the industry being directly affected (due to a change in final demand). The indirect effect captures the inter-industry purchases of goods and services. The induced effect captures the change in household spending due to changes in income and production, in the economy, as a result of change in final demand. Type I multipliers measure the direct and indirect effects, while Type SAM multipliers capture the direct, indirect and induced effects. Tables 11 and 12 present the output and employment multipliers for the food-related sectors, respectively. The multipliers were obtained from IMPLAN.

**Table 11: Output multipliers for the food-related sectors for Idaho**

Sector No.	Sector	Direct	Indirect	Induced	Total	Type 1	Type SAM
1	Dairy Farm Products	1.000000	0.276630	0.255771	1.532401	1.276630	1.532401
2	Poultry and Eggs	1.000000	0.333155	0.205903	1.539058	1.333155	1.539058
3	Ranch Fed Cattle	1.000000	0.413528	0.240616	1.654144	1.413528	1.654144
4	Range Fed Cattle	1.000000	0.568181	0.277961	1.846142	1.568181	1.846142
5	Cattle Feedlots	1.000000	0.440178	0.228673	1.668851	1.440178	1.668851
6	Sheep, Lambs and Goats	1.000000	0.368297	0.261171	1.629468	1.368297	1.629468
7	Hogs, Pigs and Swine	1.000000	0.301157	0.159714	1.460871	1.301157	1.460871
8	Other Meat Animal Products	1.000000	0.414747	0.194521	1.609268	1.414747	1.609268
9	Miscellaneous Livestock	1.000000	0.289040	0.215194	1.504234	1.289040	1.504234
10	Cotton	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
11	Food Grains	1.000000	0.343581	0.204492	1.548074	1.343581	1.548074
12	Feed Grains	1.000000	0.333760	0.232581	1.566341	1.333760	1.566341
13	Hay and Pasture	1.000000	0.344546	0.242828	1.587374	1.344546	1.587374
14	Grass Seeds	1.000000	0.202769	0.240084	1.442853	1.202769	1.442853
15	Tobacco	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
16	Fruits	1.000000	0.323733	0.335434	1.659167	1.323733	1.659167
17	Tree Nuts	1.000000	0.057023	0.469127	1.526150	1.057023	1.526150
18	Vegetables	1.000000	0.406727	0.301521	1.708248	1.406727	1.708248
19	Sugar Crops	1.000000	0.397377	0.177813	1.575190	1.397377	1.575190
20	Miscellaneous Crops	1.000000	0.492148	0.266440	1.758588	1.492148	1.758588
21	Oil Bearing Crops	1.000000	0.278960	0.250652	1.529611	1.278960	1.529611
23	Greenhouse and Nursery Products	1.000000	0.206953	0.327319	1.534272	1.206953	1.534272
25	Commercial Fishing	1.000000	0.036950	0.481907	1.518857	1.036950	1.518857
26	Agricultural, Forestry, Fishery Services	1.000000	0.288726	0.342799	1.631525	1.288726	1.631525
27	Landscape and Horticultural Services	1.000000	0.262642	0.304058	1.566700	1.262642	1.566700
58	Meat Packing Plants	1.000000	0.938038	0.206829	2.144868	1.938038	2.144868
59	Sausages and Other Prepared Meats	1.000000	0.930486	0.205873	2.136359	1.930486	2.136359
60	Poultry Processing	1.000000	0.364591	0.175848	1.540439	1.364591	1.540439
61	Creamery Butter	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
62	Cheese, Natural and Processed	1.000000	0.863020	0.204166	2.067185	1.863020	2.067185
63	Condensed and Evaporated Milk	1.000000	0.671767	0.159588	1.831355	1.671767	1.831355
64	Ice Cream and Frozen Desserts	1.000000	0.594731	0.182431	1.777162	1.594731	1.777162
65	Fluid Milk	1.000000	0.756099	0.215438	1.971537	1.756099	1.971537
66	Canned Specialties	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
67	Canned Fruits and Vegetables	1.000000	0.437996	0.178734	1.616730	1.437996	1.616730
68	Dehydrated Food Products	1.000000	0.364398	0.175082	1.539479	1.364398	1.539479
69	Pickles, Sauces, and Salad Dressings	1.000000	0.315822	0.122800	1.438622	1.315822	1.438622
70	Frozen Fruits, Juices and Vegetables	1.000000	0.504478	0.205631	1.710109	1.504478	1.710109
71	Frozen Specialties	1.000000	0.484545	0.170850	1.655395	1.484545	1.655395
72	Flour and Other Grain Mill Products	1.000000	0.533065	0.178583	1.711648	1.533065	1.711648
73	Cereal Preparations	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
74	Rice Milling	1.000000	0.589180	0.168626	1.757807	1.589180	1.757807

75	Blended and Prepared Flour	1.000000	0.466065	0.141992	1.608057	1.466065	1.608057
76	Wet Corn Milling	1.000000	0.371085	0.108533	1.479618	1.371085	1.479618
77	Dog, Cat, and Other Pet Food	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
78	Prepared Feeds, N.E.C	1.000000	0.287359	0.116352	1.403712	1.287359	1.403712
79	Bread, Cake, and Related Products	1.000000	0.314592	0.198797	1.513389	1.314592	1.513389
80	Cookies and Crackers	1.000000	0.262576	0.187995	1.450570	1.262576	1.450570
81	Sugar	1.000000	0.737096	0.184525	1.921621	1.737096	1.921621
82	Confectionery Products	1.000000	0.327431	0.165562	1.492993	1.327431	1.492993
83	Chocolate and Cocoa Products	1.000000	0.516114	0.163108	1.679222	1.516114	1.679222
84	Chewing Gum	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
85	Salted and Roasted Nuts & Seeds	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
86	Cottonseed Oil Mills	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
87	Soybean Oil Mills	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
88	Vegetable Oil Mills, N.E.C	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
89	Animal and Marine Fats and Oils	1.000000	0.474023	0.168873	1.642896	1.474023	1.642896
90	Shortening and Cooking Oils	1.000000	0.278907	0.102784	1.381691	1.278907	1.381691
91	Malt Beverages	1.000000	0.235445	0.120969	1.356414	1.235445	1.356414
92	Malt	1.000000	0.362421	0.152476	1.514898	1.362421	1.514898
93	Wines, Brandy, and Brandy Spirits	1.000000	0.394317	0.157602	1.551919	1.394317	1.551919
94	Distilled Liquor, Except Brandy	1.000000	0.166989	0.118553	1.285541	1.166989	1.285542
95	Bottled and Canned Soft Drinks & Water	1.000000	0.325122	0.141353	1.466475	1.325122	1.466475
96	Flavoring Extracts and Syrups, N.E.C.	1.000000	0.164876	0.176095	1.340972	1.164876	1.340972
97	Canned and Cured Sea Foods	1.000000	0.182475	0.090267	1.272741	1.182475	1.272741
98	Prepared Fresh Or Frozen Fish Or Seafood	1.000000	0.211938	0.143582	1.355519	1.211938	1.355520
99	Roasted Coffee	1.000000	0.681332	0.164302	1.845634	1.681332	1.845634
100	Potato Chips & Similar Snacks	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
101	Manufactured Ice	1.000000	0.265291	0.303279	1.568570	1.265291	1.568570
102	Macaroni and Spaghetti	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
103	Food Preparations, N.E.C	1.000000	0.355587	0.170925	1.526512	1.355587	1.526512

Table 11 reveals that the output multipliers (Type SAM) for ‘meatpacking plants’, and ‘sausages and other prepared meats’, ‘cheese, natural and processed’, are relatively high, implying that a change in final demand for these sectors causes a relatively large impact (in terms of output) on the economy. Table 12 reveals that the employment multipliers (Type SAM) for ‘roasted coffee’, ‘meat packing plants’, ‘wet corn milling’ and ‘sugar’ are relatively high. A change in final demand for these sectors has relatively large employment impacts throughout the economy.

**Table 12: Employment multipliers for the food-related sectors for Idaho**

Sector No.	Sector	Direct <sup>1</sup>	Indirect <sup>1</sup>	Induced <sup>1</sup>	Total	Type 1 <sup>2</sup>	Type SAM <sup>3</sup>
1	Dairy Farm Products	3.957735	5.243494	4.017782	13.219011	2.324872	3.340045
2	Poultry and Eggs	4.655713	7.925137	3.234442	15.815291	2.702239	3.396965
3	Ranch Fed Cattle	11.537724	6.199209	3.779728	21.516661	1.537299	1.864897
4	Range Fed Cattle	12.154149	7.982276	4.366358	24.502783	1.656753	2.016001
5	Cattle Feedlots	2.839733	5.338953	3.592120	11.770806	2.880090	4.145040
6	Sheep, Lambs and Goats	48.535660	9.360596	4.102616	61.998871	1.192860	1.277388
7	Hogs, Pigs and Swine	9.512428	4.905066	2.508872	16.926365	1.515648	1.779395
8	Other Meat Animal Products	12.242183	6.491086	3.055650	21.788919	1.530223	1.779823
9	Miscellaneous Livestock	22.175135	4.729242	3.380394	30.284771	1.213268	1.365709
10	Cotton	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
11	Food Grains	16.547853	4.623924	3.212279	24.384057	1.279427	1.473548
12	Feed Grains	10.210283	5.828691	3.653513	19.692487	1.570865	1.928692
13	Hay and Pasture	30.192947	6.017056	3.814470	40.024473	1.199287	1.325623
14	Grass Seeds	53.661629	2.555569	3.771370	59.988567	1.047624	1.117904
15	Tobacco	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
16	Fruits	13.137131	7.001976	5.269190	25.408297	1.532991	1.934083
17	Tree Nuts	11.748343	1.301581	7.369303	20.419228	1.110788	1.738052
18	Vegetables	5.917288	9.910860	4.736452	20.564600	2.674899	3.475342
19	Sugar Crops	10.339767	6.886774	2.793178	20.019720	1.666047	1.936187
20	Miscellaneous Crops	19.384558	14.370729	4.185392	37.940679	1.741349	1.957263
21	Oil Bearing Crops	16.669083	4.483654	3.937377	25.090114	1.268980	1.505189
23	Greenhouse and Nursery Products	10.236753	3.817852	5.141717	19.196321	1.372955	1.875235
25	Commercial Fishing	80.466141	0.567749	7.570056	88.603946	1.007056	1.101133
26	Agricultural, Forestry, Fishery Services	47.802277	3.707035	5.384885	56.894197	1.077549	1.190198
27	Landscape and Horticultural Services	29.105566	3.377531	4.776319	37.259416	1.116044	1.280147
58	Meat Packing Plants	2.616084	9.105191	3.248986	14.970261	4.480465	5.722392
59	Sausages and Other Prepared Meats	4.712673	7.590641	3.233964	15.537278	2.610687	3.296914
60	Poultry Processing	7.658134	3.844071	2.762328	14.264534	1.501959	1.862664
61	Creamery Butter	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
62	Cheese, Natural and Processed	2.298382	6.698399	3.207147	12.203927	3.914398	5.309792
63	Condensed and Evaporated Milk	2.007094	5.632418	2.506892	10.146405	3.806255	5.055271
64	Ice Cream and Frozen Desserts	5.094395	5.367746	2.865727	13.327868	2.053657	2.616183
65	Fluid Milk	2.776418	6.404769	3.384218	12.565405	3.306846	4.525762
66	Canned Specialties	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
67	Canned Fruits and Vegetables	4.956590	5.112678	2.807648	12.876915	2.031491	2.597939
68	Dehydrated Food Products	5.477705	4.254941	2.750286	12.482932	1.776774	2.278862
69	Pickles, Sauces, and Salad Dressings	3.243912	3.846529	1.929022	9.019464	2.185769	2.780428
70	Frozen Fruits, Juices and Vegetables	4.636590	5.867838	3.230172	13.734600	2.265550	2.962220
71	Frozen Specialties	6.381435	4.811439	2.683810	13.876684	1.753974	2.174540
72	Flour and Other Grain Mill Products	3.257740	6.720170	2.805289	12.783199	3.062831	3.923946

73	Cereal Preparations	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
74	Rice Milling	2.727288	6.267748	2.648878	11.643914	3.298162	4.269411
75	Blended and Prepared Flour	3.576186	5.237422	2.230488	11.044095	2.464527	3.088233
76	Wet Corn Milling	1.633798	5.448503	1.704895	8.787196	4.334870	5.378386
77	Dog, Cat, and Other Pet Food	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
78	Prepared Feeds, N.E.C	2.573225	3.441919	1.827722	7.842867	2.337590	3.047874
79	Bread, Cake, and Related Products	5.857222	4.009528	3.122812	12.989561	1.684544	2.217700
80	Cookies and Crackers	5.563690	3.151109	2.953124	11.667923	1.566370	2.097155
81	Sugar	2.546429	8.245352	2.898624	13.690405	4.238005	5.376315
82	Confectionery Products	3.036923	3.834607	2.600739	9.472270	2.262662	3.119035
83	Chocolate and Cocoa Products	4.149301	5.842029	2.562191	12.553521	2.407955	3.025455
84	Chewing Gum	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
85	Salted and Roasted Nuts & Seeds	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
86	Cottonseed Oil Mills	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
87	Soybean Oil Mills	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
88	Vegetable Oil Mills, N.E.C	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
89	Animal and Marine Fats and Oils	3.944959	4.091960	2.652758	10.689677	2.037263	2.709706
90	Shortening and Cooking Oils	1.483318	2.940398	1.614590	6.038306	2.982311	4.070811
91	Malt Beverages	4.171616	2.868608	1.900246	8.940470	1.687649	2.143167
92	Malt	2.462123	5.443729	2.395185	10.301038	3.210990	4.183803
93	Wines, Brandy, and Brandy Spirits	5.431131	4.853923	2.475693	12.760747	1.893722	2.349556
94	Distilled Liquor, Except Brandy	2.114582	2.096734	1.862293	6.073609	1.991560	2.872251
95	Bottled and Canned Soft Drinks & Water	2.968238	3.826436	2.220451	9.015125	2.289127	3.037197
96	Flavoring Extracts and Syrups, N.E.C.	10.628010	1.930169	2.766204	15.324383	1.181612	1.441886
97	Canned and Cured Sea Foods	9.696282	2.746470	1.417961	13.860714	1.283250	1.429487
98	Prepared Fresh Or Frozen Fish Or Seafood	6.161623	3.698074	2.255461	12.115158	1.600178	1.966228
99	Roasted Coffee	2.090704	8.158458	2.580952	12.830113	4.902255	6.136744
100	Potato Chips & Similar Snacks	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
101	Manufactured Ice	22.392378	3.116032	4.764083	30.272493	1.139156	1.351911
102	Macaroni and Spaghetti	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
103	Food Preparations, N.E.C	5.581750	4.708563	2.684984	12.975296	1.843564	2.324593

<sup>1</sup> Jobs per million dollars of output; <sup>2</sup> (Direct + Indirect) / Direct; <sup>3</sup> (Direct + Indirect + Induced) / Direct

## Summary and conclusions

The purpose of this paper was to study the role of the food-related sectors in the Idaho economy. The IMPLAN database was the source of data. The food-related sectors directly accounted for approximately 17 percent of the total state employment, and approximately 10 percent of the total state wage bill. The average wage for the food-related sectors was approximately \$14,692. The average wage for the non-food sectors was about \$26,955, while the

average wage for the state as a whole was about \$24,849. The study reveals the importance of the food-related retail sectors like ‘eating and drinking’ and ‘food stores’ among the food-related sectors. ‘Eating and drinking’ and ‘food stores’ accounted for 5.18 percent and 2.61 percent of the total state employment, respectively. The share of ‘farming’ and ‘food processing’ in total state employment was 5.01 percent and 2.21 percent, respectively. In the second part of the study, the relationship between Idaho supply and demand of agricultural commodities and processed foods was studied using an IMPLAN-based SAM (Social Accounting Matrix). ‘Food grains’ was characterized by excess supply, with most of that supply being exported out of Idaho, and much of Idaho demand being met by out-of -state sources. In the case of ‘vegetables’, they too are characterized by excess supply, and a large portion of the total supply is exported. However, in this case a relatively high portion of in-state demand is met by in-state producers. For many processed foods, the demand fulfilled by Idaho producers is low, implying that there is a possibility of import-substitution. The study reveals that the state has a positive trade balance (value of exports exceeds the value of imports) for agricultural commodities, and a large positive trade balance (value of imports exceeds the value of exports) for processed foods.

## **Endnotes**

<sup>1</sup> IMPLAN (Impact Analysis for Planning) is a regional economic modeling software. The economy is divided into 528 sectors. Data are available from the county-level to the national-level.

<sup>2</sup> ‘Greenhouse and nursery products’ has been separated out from ‘farms’, and is considered a food-related sector.

<sup>3</sup> ‘Landscape and horticultural services’ has been separated out from ‘ag services’, and is considered a food-related sector.

## **References**

IMPLAN Manual (Second Version), IMPLAN Inc., Stillwater, MN.

