

Economic Impact of the Texas Forest Sector, 2004

Forest Resource Development and Sustainable Forestry

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INTRODUCTION

This study evaluates the forest sector's direct and total impacts in 2004 to the overall Texas economy in terms of total industry output, value-added, employment, and labor income. Since most of the commercial forestland base and primary wood product manufacturing activities are in East Texas (Figure 1), this study also estimates the impact of the forest sector in this region to the East Texas economy.

METHODS

This study uses the input-output method to estimate the direct and total economic impact of the Texas forest sector in 2004. The IMPLAN system, a computerized input-output modeling system and associated databases for year 2004, from the Minnesota IMPLAN Group (MIG), were utilized for estimating the direct and total economic impact of the Texas forest sector. The multipliers used in this study are type SAM multipliers, which capture the total economic impact of economic sectors including direct, indirect and induced effects. The databases used by the IMPLAN system were compiled by the MIG based on data from various U.S. governmental agencies such as Bureau of Economic Analysis, Bureau of Labor Statistics, Census Bureau, Department of Agriculture, and Geological Survey (MIG, Inc. 2002). All values estimated here are in 2004 dollars.

The Texas forest sector is divided into six sub-industries, including forestry, logging, primary solid wood products, secondary solid wood products, primary paper & paperboard products, and secondary paper & paperboard products. Each sub-industry includes several IMPLAN sectors as defined by the MIG in Table 1. The table shows that the IMPLAN sectors used in this study are different than the ones used in the 1999 study, which creates some problem in direct comparison on some sub-industry level for the economic impact data of these two points in time. Most of the IMPLAN sectors in Table 1 are self-explanatory, with a few exceptions. As a part of Forestry sub-industry, the industry output of "Hunting and trapping on Forestland" was estimated from IMPLAN sector 17, "Hunting and trapping." The estimation was based on the correlation coefficient between the county level hunting and trapping output and county level

forestland acres. Agriculture land, pasture land, and range land acres in East Texas were also included in the analysis. Federal lands in East Texas were counted as forestlands. Proprietary income, other property income, and indirect business tax of the sector were adjusted proportionally to output. As a part of Forestry sub-industry, the industry output of “Forestry support activities” was estimated from IMPLAN sector 18, “Agricultural support activities,” based on the proportion of the output from the Sector 15, “Forest nurseries, forest products, and timber tracts,” and the output from all sectors for crop and animal productions. Proprietary income, other property income, and indirect business tax of the sector were estimated using the same method. It is worth noting that the logging sector include stumpage value as a major input of the sector. Also, IMPLAN sector 121, “manufactured home, mobile home, manufacturing” was excluded from the secondary solid wood products.

RESULTS

Economic Impact of the Texas Forest Sector

The direct economic impact of the Texas forest sector in 2004 is reported in Table 2. The Texas forest sector produced \$17.5 billion of industry output, \$5.5 billion of which was value-added. It employed 75,846 workers and paid \$2.7 billion wages, salaries, and benefits in the same year. Compared to 1999, the industry output of the Texas forest sector in 2004 increased 35.4 percent, most increases were from secondary manufacturing sectors. The total employment of the Texas forest sector decreased 4.6 percent from 1999 to 2004, most of the employment reductions were from the primary manufacturing sectors.

The annual total economic impact of the Texas forest sector was \$30.6 billion in 2004, \$12.4 billion of which was value-added. In the same year, the Texas forest sector generated 173,434 jobs and created \$7.6 billion in labor income (Table 3). These impacts were estimated based on type SAM multipliers for output, value-added, employment, and labor income in Table 4. Compared to 1999, the total economic impact of the Texas forest sector in 2004 increased 38.8 percent.

Economic Impact of the Forest Sector in East Texas

The forest sector in East Texas produced \$6.8 billion of goods and services in 2004. It generated \$2.3 billion in value-added, 27,023 jobs, and \$1.4 billion in labor income (Table 5). The characteristics of the forest sector in East Texas in terms of value-added to output ratio, output to employment ratio, and labor income to employment ratio in each sub-industry were similar to Texas as a whole. Compared to 1999, the industry output of the East Texas forest sector in 2004 increased 12.4 percent, with most increases from secondary manufacturing sectors. The total employment of the Texas forest sector decreased 17.2 percent from 1999 to 2004, with most reductions in East Texas from primary manufacturing sectors.

East Texas produced 39% of the total industry output from the Texas forest sector in 2004. Over two thirds of all forestry and logging industries and the great majority of the primary forest product manufacturing industries in Texas are located in East Texas. The output from primary solid wood products industry in East Texas accounted for 90.2% of all primary solid wood manufacturing in Texas. The output from the primary paper & paperboard products in East Texas accounted for 74.3% of the total primary paper & paperboard industry output in Texas. On the other hand, most of the secondary forest product manufacturing facilities in Texas are located outside of East Texas. In 2004, only 25.4% of the state's total output for secondary solid wood products industry was from East Texas. East Texas' share dropped to 12.9% for secondary paper & paperboard products industry (Table 8).

The total estimated impact of the East Texas forest sector was \$12.1 billion of output in 2004, \$4.9 billion of which was value-added impact. The total employment impact of the East Texas forest sector was 62,727 jobs. The East Texas forest sector provided \$2.9 billion in payroll in 2004 for the region (Table 6). The total economic impact of the forest sector in East Texas was estimated based on type SAM multipliers in Table 7. Compared to 1999, the total economic impact of the forest sector in East Texas in 2004 increased 10.3 percent.

LITERATURE

MIG, Inc. 2002. User's Guide, Analysis Guide, Data Guide for IMPLAN Professional Version 2.0.

MIG, Inc. 2006. The 2004 IMPLAN Structural Matrices and Texas Input and Output Data.

GLOSSARY

Total industry output is the total value of production by industry for a given time period.

Value-added consists of four components: employee compensation, proprietor income, other property income, and indirect business tax.

Employment includes full-time and part-time employees, and self-employed.

Labor income includes wages, salary and benefits of employees as well as income for self-employed individuals. The economic activities in one sector have three kinds of effects to the over all economy: direct effects, indirect effects, and induced effects.

Direct effects refer to the sector's own production, value-added, employment and labor incomes.

Indirect effects refer to the economic activities in other sectors impacted by the forest sector's purchase of goods and services.

Induced effects are economic activities from consumption of goods and services using incomes generated from the direct and indirect effects.

SAM is the acronym for Social Accounting Matrices, a macro accounting system widely used by many countries for analyzing relationships of economic activities such as production, consumption and trade between various economic entities.

Direct economic impact of a sector includes only direct effects.

Total economic impact of a sector includes all three effects generated by the sector.

Figure 1. East Texas Counties

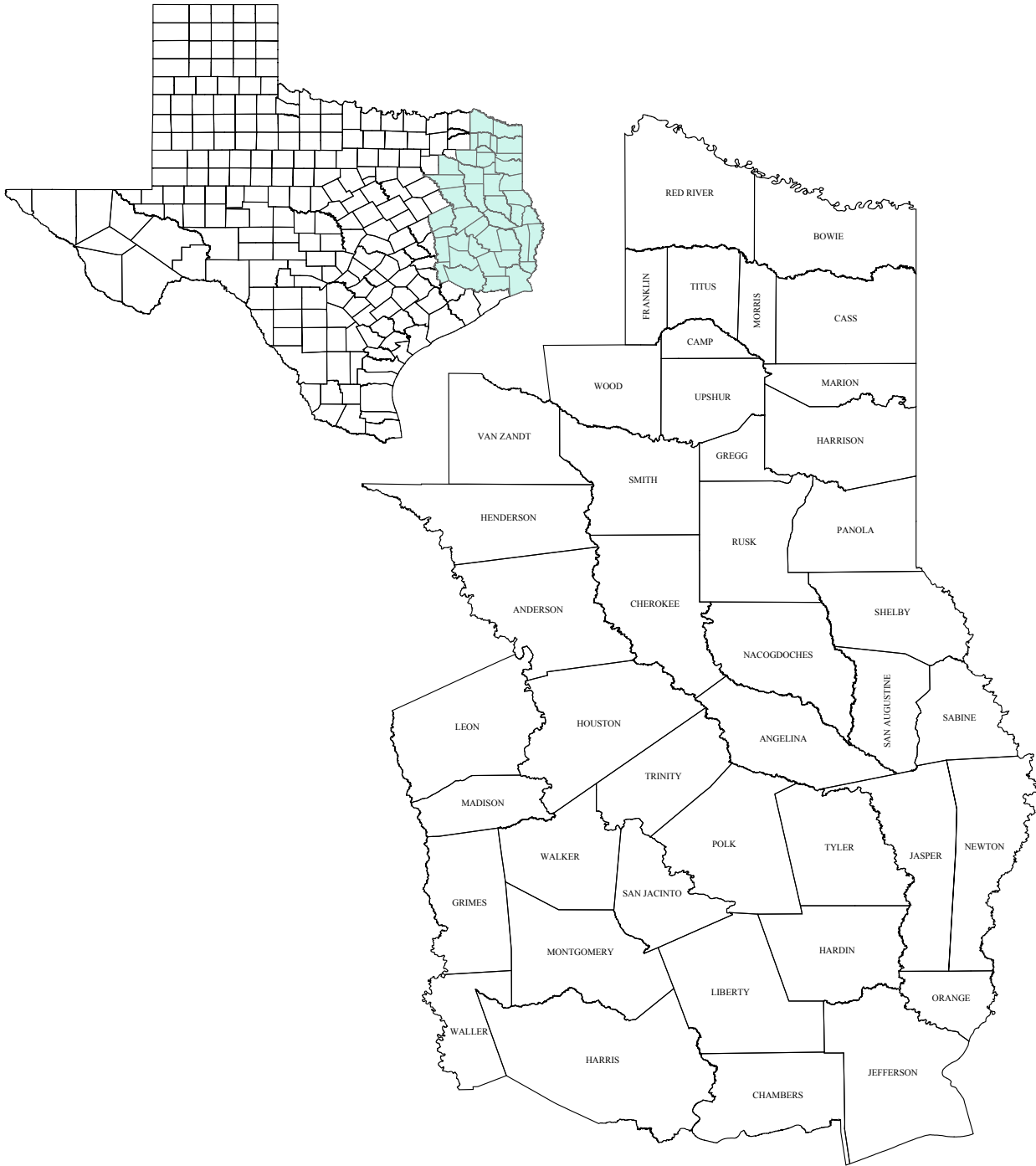


Table 1. Definitions of the Texas Forest Sector, 2004

Sub-industry	IMPLAN Sector	IMPLAN Sector ID	1997 BEA Commodity	NAICS 2002
Forestry				
		15	113A00	1131, 1132
	Hunting and trapping on Forestlands	17 (partial)	114200 (partial)	1142 (partial)
	Forestry support activities	18 (partial)	115000 (partial)	115 (partial)
Logging				
	Logging	14	113300	1133
Primary Solid Wood Products				
	Sawmills	112	321113	321113
	Reconstituted wood product manufacturing	114	321219	321219
	Veneer and plywood manufacturing	115	32121A	321211, 321212
	Cut stock, resawing lumber, and planing	118	321912	321912
Secondary Solid Wood Products				
	Wood preservation	113	321114	321114
	Engineered wood member and truss manufacturing	116	32121B	321213, 321214
	Wood windows and door manufacturing	117	321911	321911
	Other millwork, including flooring	119	321918	321918
	Wood container and pallet manufacturing	120	321920	32192
	Prefabricated wood building manufacturing	122	321992	321992
	Miscellaneous wood product manufacturing	123	321999	321999
	Wood kitchen cabinet and countertop manufacturing	362	337110	33711
	Upholstered household furniture manufacturing	363	337121	337121
	Nonupholstered wood household furniture manufacturing	364	337122	337122
	Other household and institutional furniture	367	33712A	337125, 337129
	Wood office furniture manufacturing	368	337211	337211
	Custom architectural woodwork and millwork	369	337212	337212
	Showcases, partitions, shelving, and lockers	371	337215	337215
Primary Paper & Paperboard Products				
	Pulp mills	124	322110	32211
	Paper and paperboard mills	125	3221A0	32212, 32213
Secondary Paper & Paperboard Products				
	Paperboard container manufacturing	126	322210	32221
	Flexible packaging foil manufacturing	127	322225	322225
	Surface-coated paperboard manufacturing	128	322226	322226
	Coated and laminated paper and packaging materials	129	32222A	322221, 322222
	Coated and uncoated paper bag manufacturing	130	32222B	322223, 322224
	Die-cut paper office supplies manufacturing	131	322231	322231
	Envelope manufacturing	132	322232	322232
	Stationery and related product manufacturing	133	322233	322233
	Sanitary paper product manufacturing	134	322291	322291
	All other converted paper product manufacturing	135	322299	322299

Source: Minnesota IMPLAN Group, 2006.

Table 2. Direct Economic Impacts of the Forest Sector in Texas, 2004

Sub-industry	IMPLAN Sector	Industry Output (million \$)	Value-Added (million \$)	Employment (jobs)	Income (million \$)
Forestry					
	Forest nurseries, forest products, and timber tracts	540.35	160.64	843	51.33
	Hunting and trapping on Forestland	122.79	43.27	669	10.10
	Forestry support activities	45.96	23.73	167	12.46
	Sub-total	709.09	227.64	1,679	73.88
Logging					
	Logging	979.10	328.92	3,756	178.50
	Sub-total	979.10	328.92	3,756	178.50
Primary Solid Wood Products					
	Sawmills	927.34	292.73	3,611	146.04
	Reconstituted wood product manufacturing	395.55	201.60	1,738	94.42
	Veneer and plywood manufacturing	463.02	149.70	2,383	126.32
	Cut stock, resawing lumber, and planing	54.68	12.61	408	11.02
	Sub-total	1,840.59	656.63	8,141	377.81
Secondary Solid Wood Products					
	Wood preservation	272.43	40.86	979	37.02
	Engineered wood member and truss manufacturing	403.16	195.67	2,548	93.83
	Wood windows and door manufacturing	519.75	229.86	3,176	115.43
	Other millwork, including flooring	764.74	217.23	4,665	180.53
	Wood container and pallet manufacturing	449.95	162.67	4,412	132.62
	Prefabricated wood building manufacturing	89.57	28.78	622	25.12
	Miscellaneous wood product manufacturing	185.62	89.71	1,475	49.45
	Wood kitchen cabinet and countertop manufacturing	1,647.59	594.24	13,788	477.83
	Upholstered household furniture manufacturing	273.54	85.49	2,111	85.57
	Nonupholstered wood household furniture manufacturing	187.27	60.80	1,531	44.78
	Other household and institutional furniture	79.80	22.05	499	15.92
	Wood office furniture manufacturing	160.70	57.98	844	36.46
	Custom architectural woodwork and millwork	122.35	57.08	1,103	45.58
	Showcases, partitions, shelving, and lockers	343.16	133.79	2,664	94.40
	Sub-total	5,499.63	1,976.21	40,417	1,434.53
Primary Paper & Paperboard Products					
	Paper and paperboard mills	2,282.71	708.47	3,833	427.28
	Sub-total	2,282.71	708.47	3,833	427.28
Secondary Paper & Paperboard Products					
	Paperboard container manufacturing	2,753.63	708.11	9,420	620.74
	Surface-coated paperboard manufacturing	25.56	2.32	88	3.57
	Coated and laminated paper and packaging materials	408.93	127.94	1,121	89.97
	Coated and uncoated paper bag manufacturing	475.53	115.00	1,775	92.55
	Die-cut paper office supplies manufacturing	122.29	24.63	557	22.97
	Envelope manufacturing	303.74	85.27	1,188	74.26
	Stationery and related product manufacturing	51.66	16.37	216	13.58
	Sanitary paper product manufacturing	1,795.21	470.91	2,805	245.79
	All other converted paper product manufacturing	216.90	70.06	850	48.36
	Sub-total	6,153.46	1,620.63	18,020	1,211.77
Grand total		17,464.58	5,518.50	75,846	3,703.77

Source: Minnesota IMPLAN Group, 2006.

Table 3. Total Economic Impacts of the Forest Sector in Texas, 2004

Sub-industry	IMPLAN Sector	Industry Output (million \$)	Value-Added (million \$)	Employment (jobs)	Income (million \$)
Forestry					
	Forest nurseries, forest products, and timber tracts	972.69	402.99	8,441	236.22
	Hunting and trapping on Forestland	214.51	94.31	2,280	49.42
	Forestry support activities	89.45	44.65	208	18.24
	Sub-total	1,276.65	541.95	10,929	303.88
Logging					
	Logging	1,660.38	668.63	9,554	377.62
	Sub-total	1,660.38	668.63	9,554	377.62
Primary Solid Wood Products					
	Sawmills	1,733.20	675.86	8,903	358.89
	Reconstituted wood product manufacturing	674.03	345.00	3,542	170.43
	Veneer and plywood manufacturing	948.26	385.65	5,623	258.89
	Cut stock, resawing lumber, and planing	105.92	38.38	752	25.31
	Sub-total	3,461.42	1,444.89	18,820	813.53
Secondary Solid Wood Products					
	Wood preservation	548.46	174.92	2,730	111.85
	Engineered wood member and truss manufacturing	671.26	337.77	4,464	172.04
	Wood windows and door manufacturing	915.56	440.09	6,000	233.70
	Other millwork, including flooring	1,449.85	572.00	9,391	376.92
	Wood container and pallet manufacturing	854.28	371.99	7,258	247.75
	Prefabricated wood building manufacturing	160.85	66.81	1,148	46.45
	Miscellaneous wood product manufacturing	321.98	163.51	2,464	90.13
	Wood kitchen cabinet and countertop manufacturing	2,842.54	1,234.13	22,677	832.92
	Upholstered household furniture manufacturing	520.24	217.14	3,927	159.85
	Nonupholstered wood household furniture manufacturing	310.20	126.11	2,452	81.48
	Other household and institutional furniture	134.03	51.07	886	31.96
	Wood office furniture manufacturing	280.31	120.13	1,689	71.37
	Custom architectural woodwork and millwork	227.41	114.69	1,891	77.50
	Showcases, partitions, shelving, and lockers	593.60	271.91	4,532	170.90
	Sub-total	9,830.58	4,262.27	71,512	2,704.82
Primary Paper & Paperboard Products					
	Paper and paperboard mills	4,351.51	1,769.00	16,677	999.60
	Sub-total	4,351.51	1,769.00	16,677	999.60
Secondary Paper & Paperboard Products					
	Paperboard container manufacturing	4,254.35	1,540.83	20,417	1,082.51
	Surface-coated paperboard manufacturing	45.21	13.03	226	9.68
	Coated and laminated paper and packaging materials	712.86	291.23	3,248	181.80
	Coated and uncoated paper bag manufacturing	802.40	294.01	4,134	194.79
	Die-cut paper office supplies manufacturing	203.54	71.01	1,169	49.41
	Envelope manufacturing	522.86	208.12	2,809	143.40
	Stationery and related product manufacturing	84.47	35.19	472	24.21
	Sanitary paper product manufacturing	3,061.81	1,128.38	11,506	620.00
	All other converted paper product manufacturing	366.62	155.37	1,960	95.93
	Sub-total	10,054.13	3,737.18	45,942	2,401.72
Grand total		30,634.67	12,423.92	173,434	7,601.17

Source: Minnesota IMPLAN Group, 2006.

Table 4. Type SAM Multipliers of the Forest Sector in Texas, 2004

Sub-industry	IMPLAN Sector	Industry Output	Value-Added	Employment	Labor Income
Forestry					
	Forest nurseries, forest products, and timber tracts	1.80	2.51	10.01	4.60
	Hunting and trapping on Forestland	1.75	2.18	3.41	4.89
	Forestry support activities	1.95	1.88	1.25	1.46
	Sub-total	1.80	2.38	6.51	4.11
Logging					
	Logging	1.70	2.03	2.54	2.12
	Sub-total	1.70	2.03	2.54	2.12
Primary Solid Wood Products					
	Sawmills	1.87	2.31	2.47	2.46
	Reconstituted wood product manufacturing	1.70	1.71	2.04	1.80
	Veneer and plywood manufacturing	2.05	2.58	2.36	2.05
	Cut stock, resawing lumber, and planing	1.94	3.04	1.84	2.30
	Sub-total	1.88	2.20	2.31	2.15
Secondary Solid Wood Products					
	Wood preservation	2.01	4.28	2.79	3.02
	Engineered wood member and truss manufacturing	1.66	1.73	1.75	1.83
	Wood windows and door manufacturing	1.76	1.91	1.89	2.02
	Other millwork, including flooring	1.90	2.63	2.01	2.09
	Wood container and pallet manufacturing	1.90	2.29	1.65	1.87
	Prefabricated wood building manufacturing	1.80	2.32	1.85	1.85
	Miscellaneous wood product manufacturing	1.73	1.82	1.67	1.82
	Wood kitchen cabinet and countertop manufacturing	1.73	2.08	1.64	1.74
	Upholstered household furniture manufacturing	1.90	2.54	1.86	1.87
	Nonupholstered wood household furniture manufacturing	1.66	2.07	1.60	1.82
	Other household and institutional furniture	1.68	2.32	1.77	2.01
	Wood office furniture manufacturing	1.74	2.07	2.00	1.96
	Custom architectural woodwork and millwork	1.86	2.01	1.71	1.70
	Showcases, partitions, shelving, and lockers	1.73	2.03	1.70	1.81
	Sub-total	1.79	2.16	1.77	1.89
Primary Paper & Paperboard Products					
	Paper and paperboard mills	1.91	2.50	4.35	2.34
	Sub-total	1.91	2.50	4.35	2.34
Secondary Paper & Paperboard Products					
	Paperboard container manufacturing	1.54	2.18	2.17	1.74
	Surface-coated paperboard manufacturing	1.77	5.61	2.59	2.71
	Coated and laminated paper and packaging materials	1.74	2.28	2.90	2.02
	Coated and uncoated paper bag manufacturing	1.69	2.56	2.33	2.10
	Die-cut paper office supplies manufacturing	1.66	2.88	2.10	2.15
	Envelope manufacturing	1.72	2.44	2.36	1.93
	Stationery and related product manufacturing	1.63	2.15	2.19	1.78
	Sanitary paper product manufacturing	1.71	2.40	4.10	2.52
	All other converted paper product manufacturing	1.69	2.22	2.31	1.98
	Sub-total	1.63	2.31	2.55	1.98
Grand total		1.75	2.25	2.29	2.05

Table 5. Direct Economic Impacts of the Forest Sector in East Texas, 2004

Sub-industry	IMPLAN Sector	Industry Output (million \$)	Value-Added (million \$)	Employment (jobs)	Income (million \$)
Forestry					
	Forest nurseries, forest products, and timber tracts	351.15	109.04	532	34.25
	Hunting and trapping on Forestland	117.55	35.68	731	5.86
	Forestry support activities	18.91	9.22	76	4.63
	Sub-total	487.61	153.94	1,339	44.74
Logging					
	Logging	787.28	254.48	3,113	138.21
	Sub-total	787.28	254.48	3,113	138.21
Primary Solid Wood Products					
	Sawmills	874.12	275.96	3,404	136.23
	Reconstituted wood product manufacturing	334.28	174.26	1,384	80.99
	Veneer and plywood manufacturing	421.05	137.28	2,156	115.77
	Cut stock, resawing lumber, and planing	31.03	7.97	223	6.98
	Sub-total	1,660.48	595.47	7,167	339.97
Secondary Solid Wood Products					
	Wood preservation	96.78	17.17	337	15.54
	Engineered wood member and truss manufacturing	171.71	86.34	1,008	41.43
	Wood windows and door manufacturing	122.77	53.83	759	27.10
	Other millwork, including flooring	221.29	64.42	1,336	53.59
	Wood container and pallet manufacturing	283.29	105.70	2,718	86.14
	Prefabricated wood building manufacturing	26.73	7.87	194	6.89
	Miscellaneous wood product manufacturing	60.34	30.75	435	17.00
	Wood kitchen cabinet and countertop manufacturing	210.22	87.23	1,589	70.12
	Upholstered household furniture manufacturing	93.37	35.53	648	35.57
	Nonupholstered wood household furniture manufacturing	34.47	11.61	276	8.57
	Other household and institutional furniture	9.24	2.06	63	1.49
	Wood office furniture manufacturing	11.94	3.84	68	2.42
	Custom architectural woodwork and millwork	26.73	12.37	243	9.88
	Showcases, partitions, shelving, and lockers	28.30	11.06	219	7.80
	Sub-total	1,397.20	529.78	9,891	383.54
Primary Paper & Paperboard Products					
	Paper and paperboard mills	1,695.77	525.61	2,848	314.56
	Sub-total	1,695.77	525.61	2,848	314.56
Secondary Paper & Paperboard Products					
	Paperboard container manufacturing	504.33	143.08	1,657	125.03
	Surface-coated paperboard manufacturing	1.03	0.13	3	0.19
	Coated and laminated paper and packaging materials	14.96	6.19	33	4.27
	Coated and uncoated paper bag manufacturing	122.52	34.03	433	27.42
	Die-cut paper office supplies manufacturing	22.49	4.75	101	4.41
	Envelope manufacturing	19.40	5.64	75	4.82
	Stationery and related product manufacturing	22.04	8.08	84	6.66
	Sanitary paper product manufacturing	1.47	0.64	2	0.46
	All other converted paper product manufacturing	83.00	33.66	275	22.64
	Sub-total	791.24	236.20	2,664	195.90
Grand total		6,819.58	2,295.48	27,023	1,416.92

Source: Minnesota IMPLAN Group, 2006.

Table 6. Total Economic Impacts of the Forest Sector in East Texas, 2004

Sub-industry	IMPLAN Sector	Industry Output (million \$)	Value-Added (million \$)	Employment (jobs)	Income (million \$)
Forestry					
	Forest nurseries, forest products, and timber tracts	514.58	201.85	3,198	102.79
	Hunting and trapping on Forestland	169.79	64.85	1,597	28.13
	Forestry support activities	35.23	16.53	95	6.56
	Sub-total	719.60	283.22	4,890	137.48
Logging					
	Logging	1,287.21	495.50	6,707	274.15
	Sub-total	1,287.21	495.50	6,707	274.15
Primary Solid Wood Products					
	Sawmills	1,649.54	630.65	8,119	331.03
	Reconstituted wood product manufacturing	571.68	295.24	2,823	144.38
	Veneer and plywood manufacturing	865.60	347.01	4,926	232.95
	Cut stock, resawing lumber, and planing	61.90	22.94	418	15.20
	Sub-total	3,148.72	1,295.85	16,287	723.56
Secondary Solid Wood Products					
	Wood preservation	202.31	66.73	971	42.91
	Engineered wood member and truss manufacturing	288.65	146.73	1,795	74.36
	Wood windows and door manufacturing	215.70	102.21	1,393	54.24
	Other millwork, including flooring	423.12	165.49	2,656	109.22
	Wood container and pallet manufacturing	546.88	237.62	4,463	158.25
	Prefabricated wood building manufacturing	47.44	18.76	338	12.95
	Miscellaneous wood product manufacturing	102.67	53.38	729	29.40
	Wood kitchen cabinet and countertop manufacturing	356.94	166.08	2,634	113.24
	Upholstered household furniture manufacturing	165.30	74.76	1,176	57.40
	Nonupholstered wood household furniture manufacturing	55.85	22.98	429	14.89
	Other household and institutional furniture	15.35	5.31	104	3.28
	Wood office furniture manufacturing	19.39	7.78	119	4.60
	Custom architectural woodwork and millwork	48.81	24.44	400	16.51
	Showcases, partitions, shelving, and lockers	47.31	21.59	355	13.57
	Sub-total	2,535.72	1,113.86	17,562	704.82
Primary Paper & Paperboard Products					
	Paper and paperboard mills	3,163.98	1,271.60	11,526	715.26
	Sub-total	3,163.98	1,271.60	11,526	715.26
Secondary Paper & Paperboard Products					
	Paperboard container manufacturing	752.09	282.37	3,459	201.82
	Surface-coated paperboard manufacturing	1.76	0.53	9	0.37
	Coated and laminated paper and packaging materials	24.72	11.51	102	7.23
	Coated and uncoated paper bag manufacturing	198.54	76.03	981	51.27
	Die-cut paper office supplies manufacturing	35.90	12.47	202	8.81
	Envelope manufacturing	32.01	12.76	167	8.82
	Stationery and related product manufacturing	34.49	15.32	181	10.73
	Sanitary paper product manufacturing	2.43	1.16	9	0.75
	All other converted paper product manufacturing	132.78	62.42	646	38.55
	Sub-total	1,214.71	474.56	5,756	328.35
Grand total		12,069.93	4,934.59	62,727	2,883.61

Source: Minnesota IMPLAN Group, 2006.

Table 7. Type SAM Multipliers of the Forest Sector in East Texas, 2004

Sub-industry	IMPLAN Sector	Industry Output	Value-Added	Employment	Labor Income
Forestry					
	Hunting and trapping on Forestland	1.47	1.85	6.02	3.00
	Forestry support activities	1.44	1.82	2.18	4.80
	Agriculture and forestry support activities	1.86	1.79	1.24	1.42
	Sub-total	1.48	1.84	3.65	3.07
Logging					
	Logging	1.64	1.95	2.15	1.98
	Sub-total	1.64	1.95	2.15	1.98
Primary Solid Wood Products					
	Sawmills	1.89	2.29	2.39	2.43
	Reconstituted wood product manufacturing	1.71	1.69	2.04	1.78
	Veneer and plywood manufacturing	2.06	2.53	2.28	2.01
	Cut stock, resawing lumber, and planing	2.00	2.88	1.88	2.18
	Sub-total	1.90	2.18	2.27	2.13
Secondary Solid Wood Products					
	Wood preservation	2.09	3.89	2.88	2.76
	Engineered wood member and truss manufacturing	1.68	1.70	1.78	1.79
	Wood windows and door manufacturing	1.76	1.90	1.83	2.00
	Other millwork, including flooring	1.91	2.57	1.99	2.04
	Wood container and pallet manufacturing	1.93	2.25	1.64	1.84
	Prefabricated wood building manufacturing	1.77	2.38	1.74	1.88
	Miscellaneous wood product manufacturing	1.70	1.74	1.68	1.73
	Wood kitchen cabinet and countertop manufacturing	1.70	1.90	1.66	1.61
	Upholstered household furniture manufacturing	1.77	2.10	1.82	1.61
	Nonupholstered wood household furniture manufacturing	1.62	1.98	1.55	1.74
	Other household and institutional furniture	1.66	2.58	1.65	2.20
	Wood office furniture manufacturing	1.62	2.02	1.76	1.90
	Custom architectural woodwork and millwork	1.83	1.97	1.65	1.67
	Showcases, partitions, shelving, and lockers	1.67	1.95	1.62	1.74
	Sub-total	1.81	2.10	1.78	1.84
Primary Paper & Paperboard Products					
	Paper and paperboard mills	1.87	2.42	4.05	2.27
	Sub-total	1.87	2.42	4.05	2.27
Secondary Paper & Paperboard Products					
	Paperboard container manufacturing	1.49	1.97	2.09	1.61
	Surface-coated paperboard manufacturing	1.71	4.17	2.50	1.97
	Coated and laminated paper and packaging materials	1.65	1.86	3.06	1.69
	Coated and uncoated paper bag manufacturing	1.62	2.23	2.27	1.87
	Die-cut paper office supplies manufacturing	1.60	2.63	2.00	2.00
	Envelope manufacturing	1.65	2.26	2.23	1.83
	Stationery and related product manufacturing	1.57	1.90	2.16	1.61
	Sanitary paper product manufacturing	1.65	1.82	5.29	1.62
	All other converted paper product manufacturing	1.60	1.85	2.35	1.70
	Sub-total	1.54	2.01	2.16	1.68
Grand total		1.77	2.15	2.32	2.04

Table 8. Forest Sector Economic Impact: Shares of East Texas in the State's Total, 2004

Economic Impact	Sub-industry	Industry Output	Value-Added	Employment	Labor Income
Direct Impact					
	Forestry	68.8%	67.6%	79.7%	60.6%
	Logging	80.4%	77.4%	82.9%	77.4%
	Primary Solid Wood Products	90.2%	90.7%	88.0%	90.0%
	Secondary Solid Wood Products	25.4%	26.8%	24.5%	26.7%
	Primary Paper & Paperboard Products	74.3%	74.2%	74.3%	73.6%
	Secondary Paper & Paperboard Products	12.9%	14.6%	14.8%	16.2%
	Total	39.0%	41.6%	35.6%	38.3%
Total Impact					
	Forestry	56.4%	52.3%	44.7%	45.2%
	Logging	77.5%	74.1%	70.2%	72.6%
	Primary Solid Wood Products	91.0%	89.7%	86.5%	88.9%
	Secondary Solid Wood Products	25.8%	26.1%	24.6%	26.1%
	Primary Paper & Paperboard Products	72.7%	71.9%	69.1%	71.6%
	Secondary Paper & Paperboard Products	12.1%	12.7%	12.5%	13.7%
	Total	39.4%	39.7%	36.2%	37.9%