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The State of Montana Manufacturing Trends and Analysis

Prepared For

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Manufacturing and the U.S. Economy

Manufacturing continues to play a major role in the U.S. economy, despite the stories about downsizing and export of jobs to low-wage areas of the world. The real output (value added) of U.S. manufacturing rose from \$1.28 trillion (2000 \$) in 1998 to about \$1.57 trillion (2000 \$) in 2007, an average annual growth rate of approximately 2.3 percent per year.

Between 1998 and 2007, manufacturing increased slightly slower than the U.S. economy. Value added in manufacturing accounted for about 14.1 percent of the U.S. total in 1998, and about 13.6 percent in 2007.

Manufacturing felt the impacts of the 2001 recession and the economic aftermaths of Sept. 11. Manufacturing value added declined from \$1.42 trillion (2000 \$) in 2000 to \$1.35 trillion (2000 \$) in 2001. But the pre-recession levels were regained by mid-2004.

The job losses, factory closures, and overseas outsourcing did indeed happen. But these instances were mostly confined to a few industries. Further, the rapid increases in manufacturing productivity suggest that employment changes may not reflect overall trends in manufacturing.

Manufacturing and the Montana Economy

Regional economies are analyzed differently than national economies. Growth in states' economies are mostly due to changes in the basic (or export) industries rather than factors such as productivity, exchange rates, and monetary/fiscal policies which are often causes of national economic trends. Basic industries are those located in an area but sell their products elsewhere, or are

otherwise influenced by outside factors. Industries such as manufacturing, mining, and agriculture are obviously basic industries for a state. Federal government and railroads are industries that don't export products, but they depend on factors outside the region and are classified as basic. Services may also be basic industries. For example, financial services in New York, insurance in Connecticut and Indiana, and amusement places (casinos) in Nevada are all components of their respective state's economic base.

The relative importance of manufacturing to states' economies is shown in Table 2. These data show manufacturing's share of each state's economic base as measured by Gross Domestic Product. These percentages were derived using an empirical method developed by the U.S. Bureau of Economic Analysis to identify the basic industries in each state. A more detailed study may yield slightly different results for certain states.

Even though their ranking changed slightly between 1997 and 2004, the top states in terms of the importance of manufacturing include Indiana, South Carolina, Wisconsin, Michigan, and Ohio. Montana has consistently been in the lower tier of states in terms of the relative importance of manufacturing. Montana ranked 45th in 1997 when manufacturing accounted for 19.8 percent of the economic base and 44th in 2004 with 16.8 percent.

We switch from Gross Domestic Product to labor income data because it provides a longer analysis period and better portrays year-to-year changes in certain industries. GDP for states is a slightly more comprehensive measure of the economy than labor income, but GDP is not available prior to 1997, and the 2007 industry details have not yet been released. For the most part, we will be

Table 1
U.S. Gross Domestic Product
(Trillions of 2000 \$)

	- Year -									
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007 ^P
Gross Domestic Product	\$9.07	\$9.47	\$9.82	\$9.89	\$10.05	\$10.30	\$10.68	\$11.00	\$11.32	\$11.57
Manufacturing	1.28	1.34	1.42	1.35	1.38	1.40	1.47	1.49	1.54	1.57
Percent of Total	14.11	14.15	14.46	13.65	13.73	13.60	13.76	13.55	13.60	13.57

Source: U.S. Bureau of Economic Analysis.

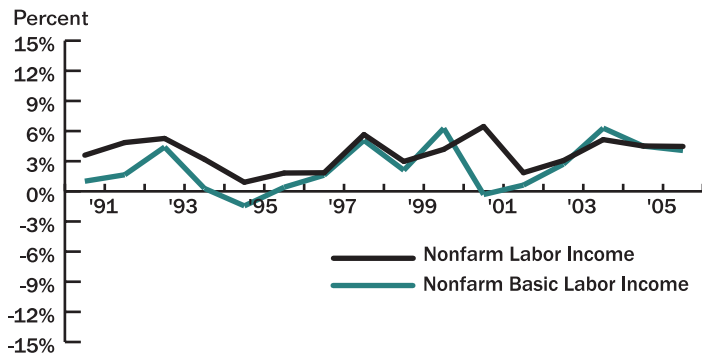
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Table 2
Manufacturing as Percent of Economic Base
Gross Domestic Product for States, 1997 and 2004

1997			2004		
Rank	State	Percent	Rank	State	Percent
1	Indiana	74.8	1	Indiana	75.6
2	South Carolina	69.8	2	Oregon	66.7
3	North Carolina	69.1	3	South Carolina	64.4
4	Wisconsin	67.2	4	Wisconsin	63.9
5	Michigan	65.9	5	Michigan	62.4
6	Ohio	65.2	6	Ohio	58.9
7	Kentucky	64.9	7	North Carolina	57.4
8	Oregon	64.6	8	Arkansas	56.7
9	New Hampshire	63.1	9	Kentucky	55.2
10	Arkansas	59.5	10	Pennsylvania	51.9
11	Pennsylvania	58.9	11	Alabama	50.2
12	Maine	58.3	12	Iowa	50.1
13	Vermont	56.2	13	Maine	49.5
14	Arizona	55.3	14	Vermont	48.6
15	Missouri	53.0	15	New Hampshire	47.3
16	Iowa	52.3	16	Kansas	47.2
17	Alabama	52.2	17	Tennessee	47.0
18	Kansas	51.5	18	Missouri	45.5
19	Georgia	51.0	19	Georgia	44.9
20	Tennessee	49.9	20	Arizona	43.7
21	New Mexico	48.3	21	Minnesota	42.5
22	Texas	47.9	22	Idaho	41.2
23	Minnesota	47.5	23	Texas	39.8
24	Mississippi	47.0	24	Mississippi	39.6
25	California	44.2	25	Louisiana	37.1
26	Utah	43.0	26	California	37.1
27	Oklahoma	42.6	27	Washington	36.8
28	Rhode Island	40.4	28	Illinois	35.1
29	Washington	40.2	29	Utah	34.5
30	Louisiana	40.2	30	Nebraska	32.3
31	Illinois	39.8	31	New Jersey	30.8
32	Idaho	39.3	32	Rhode Island	30.6
33	West Virginia	39.1	33	West Virginia	30.5
34	Nebraska	36.5	34	Connecticut	28.9
35	New Jersey	35.4	35	Oklahoma	28.2
36	Connecticut	35.0	36	North Dakota	26.3
37	Virginia	32.8	37	Virginia	25.6
38	Massachusetts	30.0	38	New Mexico	25.5
39	South Dakota	29.3	39	Massachusetts	22.6
40	North Dakota	27.3	40	South Dakota	22.5
41	Colorado	27.0	41	Florida	18.4
42	Florida	23.3	42	Colorado	17.6
43	Maryland	22.8	43	Delaware	17.3
44	Delaware	21.0	44	Montana	16.8
45	Montana	19.8	45	Maryland	16.6
46	New York	17.8	46	New York	14.1
47	Wyoming	13.2	47	Nevada	13.7
48	Nevada	12.9	48	Wyoming	8.5
49	Hawaii	6.7	49	Hawaii	4.9
50	Alaska	5.8	50	Alaska	4.8
51	District of Columbia	0.7	51	District of Columbia	0.4

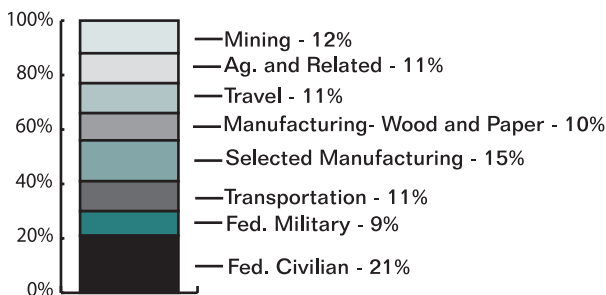
Source: U.S. Bureau of Economic Analysis.

Figure 1
Nonfarm Labor Income and Nonfarm Basic Labor Income, Montana
Percentage Change



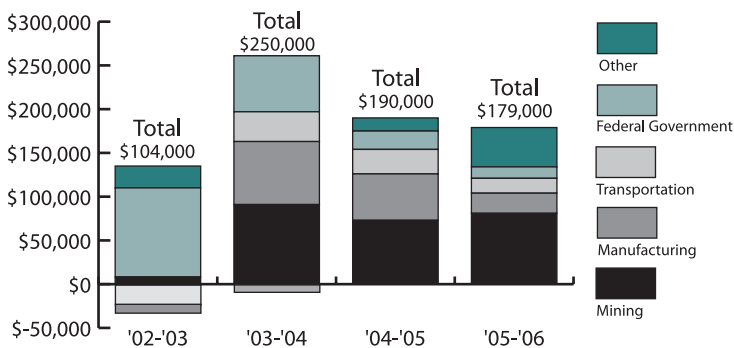
Source: Bureau of Economic Analysis, U.S. Department of Commerce.

Figure 2
Labor Income in Basic Industries
Montana, 2004-2006
(Percent of Total)



Sources: Bureau of Business and Economic Research, The University of Montana-Missoula; Bureau of Economic Analysis, U.S. Department of Commerce.

Figure 3
Change in Nonfarm Basic Labor Income, Montana
(Change in Millions of 2005 Dollars)



Source: Bureau of Economic Analysis, U.S. Department of Commerce.

looking at GDP data when we compare Montana and the United States for a single year and nonfarm labor income data when we examine trends over time. There are, however, disadvantages to labor income. For example, the net farm income of family-owned farms (a major component of farm labor income) is very volatile and not a good measure of economic conditions on farms and ranches. Consequently, nonfarm labor income data are shown; it doesn't mean that agriculture is ignored (in fact, agricultural services are included), rather that the extreme volatility of farm labor income masks other important trends in the economy.

Changing definitions as well as structural change in the U.S. economy also impact accurate interpretation of manufacturing data. The U.S. Government mandated a significant change in way it publishes its economic data and many agencies implemented these new definitions around 2000. The purpose of the modification was to better describe an economy more dependent on services. But one consequence of this definitional change was that statistics for 2000 or earlier may not be strictly comparable to those after this date. In addition, evolving and improving practices within industries mean that detailed categories may themselves be changing. For example, the recent trend toward precise and detailed supply-chain management means that today's manufacturing processes may be quite different from those of just a few years ago.

Manufacturing was a major contributor to Montana's recent economic trends, despite it being a relatively small component of the economic base when compared to other states. Overall economic trends in the Montana economy from 1991 to 2006 are shown by nonfarm labor income (Figure 1). It takes only a quick glance to see that the basic industries provide a very good explanation for the trends in the state's economy. For example, the decelerations associated with the 2001 recession and the Sept. 11 aftermath (which will be discussed in detail later) are clearly seen in the basic industry data and then the impacts on the overall economy a year or so later. Similarly, the rapid acceleration in the basic industries

after 2001 was quickly followed by increases in overall growth.

Figure 3 provides a closer look at the role of manufacturing in recent economic trends. The annual growth in basic nonfarm labor income from 2002 to 2006 is decomposed by major sector. Starting with 2003, statewide nonfarm basic labor income increased about \$104 million (2005 \$). Manufacturing labor income declined about \$22 million (2005 \$), while the largest increases were \$102 million (2005 \$) in the federal government (mostly border and other national security-related items) and the \$25 million in the other category (which includes nonresident travel). During 2004, nonfarm basic labor income rose \$250 million (2005 \$), with manufacturing increasing \$72 million (2005 \$), mining growing by \$91 million (2005 \$) and the federal government expanding \$69 million (2005 \$). In 2005, nonfarm basic labor income rose \$190 million (2005 \$), with mining expanding by \$73 million (2005 \$), manufacturing rose \$53 million (2005 \$) and the federal government increased \$21 million (2005 \$). In 2006, the largest increases were in mining (\$81 million 2005 \$), other basic industries (\$45 million 2005 \$) and manufacturing (\$23 million 2005 \$).

These four years of data provide several conclusions:

- Economic growth is the net result of differing conditions in the individual basic industry. There are always some industries growing (or declining) faster or slower than others.
- There is usually no one single cause of growth. No basic industry was the growth leader during all three years.
- Most importantly, industries that are a relatively small component of the economic base—like manufacturing and mining—can be major contributors to state economic growth during specific periods.

A Closer Look at Montana Manufacturing

Manufacturing establishments. There were 3,167 manufacturing establishments in Montana during 2005, as shown in Table 3. The largest category was

**Table 3
Manufacturing Establishments
Montana, 2005**

NAICS Code	Industry Title	Number of Establishments
	Manufacturing	3,167
311	Food products	303
312	Beverages & tobacco	38
313	Textile mills	16
314	Textile product mills	35
315	Apparel	162
316	Leather & allied products	121
321	Wood products	413
322	Paper manufacturing	7
323	Printing & related	169
324	Petroleum & coal products	12
325	Chemicals	77
326	Plastics & rubber products	46
327	Nonmetallic mineral products	136
331	Primary metals	48
332	Fabricated metal products	394
333	Machinery	106
334	Computer & elec. products	57
335	Electrical equipment & appliances	22
336	Transportation equipment	68
337	Furniture & related	318
339	Miscellaneous	619

Note: Includes establishments with no employees.
Source: U.S. Bureau of the Census.

miscellaneous manufacturers (NAICS 339) with 619 establishments. The next largest categories were wood products manufacturing (NAICS 321) with 413 establishments and fabricated metal manufacturers (NAICS 332) with 394 establishments.

Employment size. Montana manufacturers are mostly small businesses. As shown in Table 4, about 681 of the 1,283 establishments with employees (or 53.0 percent) had one to four workers. There were 920 establishments with less than ten workers, or approximately 71.7 percent. There were no Montana manufacturers with more than 1,000 employees.

**Table 4
Manufacturing Establishments by Employment Size
Montana, 2005**

	Number of Employees									
	Total	1 to 4	5 to 9	10 to 19	20 to 49	50 to 99	100 to 249	250 to 499	500 to 999	1,000 or more
Establishments	1,283	681	239	160	116	53	25	7	2	0

Note: Includes only establishments with employees.
Source: U.S. Bureau of the Census.

Figure 4
Composition of Manufacturing
2006, Montana
(Percent of Manufacturing GDP)

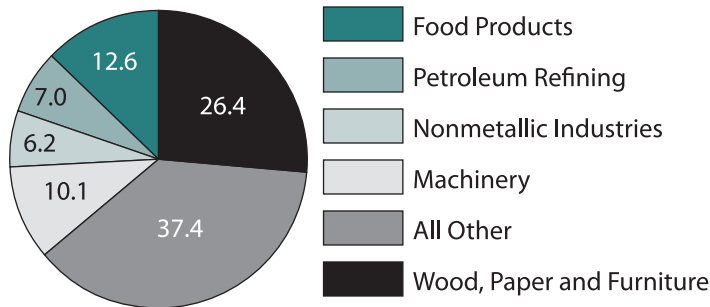
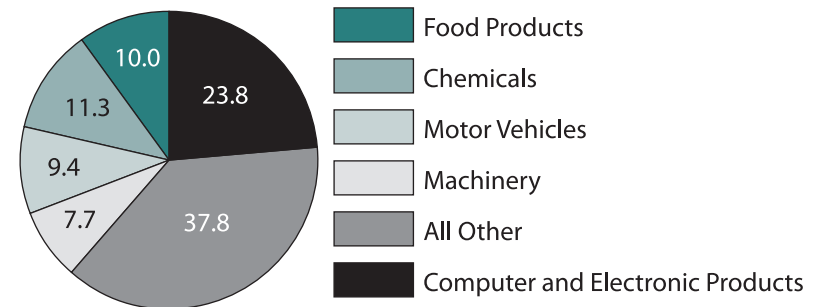


Figure 5
Composition of Manufacturing
2006, U.S.
(Percent of Manufacturing GDP)



Source: Bureau of Economic Analysis, U.S. Department of Commerce.

Composition of manufacturing. Montana manufacturing industry is not identical to its nationwide counterpart, and conclusions and trends for U.S. manufacturing may not be appropriate for the state's industry. Specifically, as shown in Figures 4 and 5, food products is the only one of the five largest components of U.S. manufacturing that is also among the largest in Montana.

The largest component of U.S. manufacturing (as measured by GDP) was computers and other electronic products, accounting for about 23.8 percent of the total in 2006. The next four largest industries were chemicals (11.3 percent), food products (10.0 percent), motor vehicles (9.4 percent), and machinery (7.7 percent).

The largest sector of Montana manufacturing was associated with the harvest and processing of timber and wood resources. Wood and paper products and furniture manufacturing accounted for 26.4 percent of total manufacturing in 2006. Food processing was the second largest component at 12.6 percent. Petroleum refining (primarily reflecting the large facilities in the Billings area) represented 7.0 percent. Nonmetallic industries (which include ready mix concrete plants) accounted for 6.2 percent. Finally, machinery manufacturing (which includes Semitool in Kalispell and Jore Manufacturing in Lake County) accounted for 10.1 percent.

Manufacturing employment. The data in Table 5 show that U.S. manufacturing employment trended downward between 1997 and 2006, despite remaining stable from 2005 to 2006. Montana manufacturing employment also decreased, but the decline was not as large as for the nation.

Total U.S. manufacturing employment decreased from 17.9 million workers in 1997 to 14.8 million in 2006, a decrease of approximately 16.3 percent. Manufacturing's share of total U.S. employment dropped from 11.5 percent to 8.3 percent during the same period.

Montana manufacturing employment decreased from

24,600 workers in 1997 to 23,900 in 2006, a decline of only 2.8 percent. Unlike the nation, the Montana's manufacturing employment trend was not always downward: there were upticks in 1998 and 1999 and again in 2005 and 2006. Manufacturing's share of statewide employment decreased from 4.7 percent in 1997 to 3.7 percent in 2006. The relative importance of Montana's manufacturing employment declined by only one percentage point, while the corresponding nationwide decline was 3.1 percentage points.

Employment by industry. The trend in total employment may not accurately reflect conditions in each manufacturing sector. As shown in Table 6, there were significant declines in several manufacturing industries while other industries were stable or even increased employment. The largest declines were in wood products and primary metals. Computer & electrical products and machinery had the largest increases in employment. The underlying factors behind these industry employment trends will be discussed in the labor income section.

Labor income by industry. Labor income (corrected for inflation) is presented in Table 7. This indicator provides a reliable measure of overall and cyclic trends in manufacturing and its components. Year to year changes in labor income accurately mirror the corresponding trends in output and production

It takes only a quick comparison of Tables 6 and 7 to see that the trends in labor income and employment are quite different. Instead of declines the overall trend in labor income is upward between 1997 and 2006. Similarly, the significant employment decreases in wood products and primary metals are replaced by more modest declines in labor income. Labor income is less impacted by structural changes and increases in labor productivity than employment and is a more reliable indicator of output and production.

Montana's wood using and processing industries,

Table 5
Full- and Part-Time Employment
Total and Manufacturing, United States and Montana

	- Year -									
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
United States (Millions)										
Total	155.6	159.6	163.0	166.8	167.0	166.6	167.5	170.5	174.2	178.3
Manufacturing	17.9	18.2	17.9	17.8	17.0	15.8	15.0	14.9	14.9	14.8
Percent of Total	11.5	11.4	11.0	10.7	10.2	9.5	9.0	8.7	8.7	8.3
Montana (Thousands)										
Total	528.9	540.3	548.3	559.1	566.0	572.4	579.2	597.0	598.0	637.3
Manufacturing	24.6	25.0	25.3	25.0	24.6	23.4	22.2	22.7	22.5	23.9
Percent of Total	4.7	4.6	4.6	4.5	4.3	4.1	3.8	3.8	3.8	3.7

Note: Includes the self employed.
Source: U.S. Bureau of Economic Analysis.

Table 6
Full- and Part-Time Employment
Montana

	- Year -									
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Manufacturing	24587	24991	25337	25021	24601	23376	22208	22539	22977	23886
Durable goods	16041	16481	16789	16582	16553	15348	14342	14277	14684	15298
Wood product	6496	6427	6434	6272	6085	5958	5474	5440	5454	5461
Nonmetallic mineral	1252	1271	1320	1251	1094	1007	1140	1116	1139	1107
Primary metal	1045	1046	1041	1057	924	565	446	333	364	386
Fabricated metal	1470	1513	1514	1505	1622	1517	1515	1546	1596	1777
Machinery manufacturing	961	1143	1338	1323	1912	1493	1316	1299	1436	1573
Computer and electronic	483	600	660	682	698	603	481	476	505	591
Electrical equipment and appliance	(T)	(T)	(T)	(T)	141	135	127	187	194	207
Motor vehicles, bodies and trailers, and parts	337	328	358	393	365	(D)	(D)	(D)	345	408
Other transportation equipment	(T)	255	(T)	(T)	204	(D)	(D)	(D)	224	221
Furniture and related	1258	1417	1568	1531	1376	1298	1306	1358	1330	1325
Miscellaneous	2390	2371	2313	2302	2132	2239	2027	1990	2097	2242
Nondurable goods	8546	8510	8548	8439	8048	8028	7866	8262	8293	8588
Food	2746	2639	2772	2693	2615	2634	2517	2784	2802	2991
Beverage and tobacco	821	841	823	788	785	811	827	832	803	861
Textile mills	(T)	(T)	(T)	(T)	(D)	(D)	(D)	(D)	(D)	(D)
Textile product mills	(T)	(T)	(T)	(T)	237	236	242	224	212	215
Apparel manufacturing	(T)	(T)	(T)	(T)	315	288	269	306	312	327
Leather and allied	(T)	(T)	(T)	(T)	177	218	204	209	215	215
Paper manufacturing	668	727	767	791	(D)	(D)	(D)	(D)	(D)	(D)
Printing and related support activities	1405	1366	1340	1304	1229	1193	1193	1232	1244	1304
Petroleum and coal	930	914	917	925	917	933	914	887	928	942
Chemical	804	899	900	817	681	705	737	783	784	762
Plastics and rubber	(T)	(T)	(T)	(T)	403	364	333	374	384	379

Notes: Includes the self employed. (T) and (D) not shown to avoid disclosure of confidential information.
Source: U.S. Bureau of Economic Analysis.

Table 7
Labor Income in Manufacturing, Montana
(Thousands of 2005 Dollars)

	- Year -									
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Manufacturing	952,685	1,027,597	1,054,636	1,065,910	1,088,268	1,049,177	1,025,516	1,099,354	1,152,829	1,181,595
Durable goods	591,521	639,147	659,436	687,030	671,810	636,145	609,580	625,771	650,917	665,759
Wood product	257,692	259,934	268,958	269,313	255,937	253,358	236,442	240,066	239,344	235,088
Nonmetallic mineral	45,601	49,111	52,035	50,184	45,585	41,735	49,027	48,853	49,775	46,035
Primary metal	71,698	71,207	74,268	92,448	67,321	52,548	46,669	57,114	59,188	54,971
Fabricated metal	46,432	48,785	48,712	48,119	53,671	54,076	53,504	54,256	57,872	65,504
Machinery	35,187	42,942	53,344	56,340	84,647	71,569	61,780	63,374	71,396	83,551
Computer and electronic	19,217	29,854	29,707	31,563	28,771	25,139	21,642	20,165	26,329	24,228
Electrical equipment and appliance	(T)	(T)	(T)	(T)	6,813	7,030	7,548	8,808	9,303	10,132
Motor vehicles, bodies and trailers, and parts	12,644	14,830	15,196	17,192	16,557	(D)	(D)	(D)	17,710	20,341
Other transportation equipment	(T)	12,071	(T)	(T)	10,400	(D)	(D)	(D)	10,437	10,055
Furniture and related	27,427	37,061	37,481	38,146	35,243	34,571	38,156	33,994	34,064	35,078
Miscellaneous	64,827	69,026	69,320	73,600	66,865	69,896	66,962	71,781	75,499	80,775
Nondurable goods	361,164	388,450	395,200	378,879	416,458	413,032	415,936	473,583	501,912	515,837
Food	83,207	84,988	88,375	84,823	89,325	91,492	86,893	96,696	97,145	102,800
Beverage and tobacco	29,207	30,526	27,582	26,865	29,747	31,524	29,159	35,368	34,079	35,629
Textile mills	(T)	(T)	(T)	(T)	(D)	(D)	(D)	(D)	(D)	(D)
Textile product mills	(T)	(T)	(T)	(T)	8,067	8,055	6,802	8,821	8,520	9,171
Apparel	(T)	(T)	(T)	(T)	4,000	5,126	7,235	8,739	8,013	8,625
Leather and allied	(T)	(T)	(T)	(T)	2,853	2,407	4,041	2,384	2,468	2,552
Paper	41,862	45,067	51,980	50,884	(D)	(D)	(D)	(D)	(D)	(D)
Printing and related	33,988	35,620	37,133	37,831	38,348	37,476	38,792	39,070	39,265	41,622
Petroleum and coal	105,690	115,613	122,237	108,243	142,940	133,495	129,678	164,395	191,054	197,419
Chemical	40,962	49,329	45,249	44,722	44,292	42,744	48,340	54,143	58,099	52,436
Plastics and rubber	(T)	(T)	(T)	(T)	9,287	9,012	8,431	9,615	10,102	11,176

Notes: Includes the income of the self employed. Labor income includes wages and salaries plus certain employer-paid fringe benefits. (D) and (T) not shown to avoid disclosure of confidential information.

Source: U.S. Bureau of Economic Analysis.

the largest component of manufacturing, saw stable or slightly declining labor income between 1997 and 2006. The fastest growth during this period was the tripling of machinery (Semitool and Jore) and the almost doubling of computer and electronic parts. The long-term downward trend in primary metals reflects the closing of the East Helena smelter and the continued downsizing of the Columbia Falls Aluminum Company.

The 2001 recession and the economic aftermath of Sept. 11 hit U.S. manufacturing particularly hard. Even by 2006, U.S. manufacturing labor income had not yet regained its 2000 pre-recession peak. Particularly large reductions were felt in computer manufacturing, which is the largest single industry in manufacturing as measured by labor income (as well as GDP). In 2006, labor income in computer manufacturing was 24.2 percent lower than in 2000.¹

Montana manufacturing was not impacted to the same degree by the 2001 recession and September 11 aftermath. Manufacturing labor income peaked in 2001 and then declined for two years, reaching a trough in 2003 about 5.8 percent below the 2001 peak. Manufacturing labor income then turned upward and by 2006 was approximately 8.5 percent above the previous peak.

Employment and per worker wages and salaries.

This section examines employment and per worker wages in manufacturing and compares them to similar figures for other industries and to corresponding U.S. averages. The figures for wage and salary employment in Table 8 do not include the self-employed because these estimates are sometimes inexact. Similarly, wages and salaries directly measure the amounts paid to workers and may be spent by them. Other income measures (i.e. labor income per worker) may be influenced by special factors such as collective bargaining agreements in industries and certain

8 ¹The U.S. government revised its statistical definitions in the late 1990s and this slightly changed certain historic data. The figures in tables 5, 6, and 7 for labor income and employment supersede those published in earlier versions of this report.

**Table 8
Employment, Wages and Salaries per Worker, by Industry
Montana, 2005**

	Wages and Salaries per Worker		
	Wage and Salary Employment	Current Dollars	Percent of U.S.
All Industries	462,339	30,534	72.7
Farm wage and salary disbursements	5,691	31,844	122.5
Nonfarm wage and salary disbursements	456,648	30,518	72.5
Private wage and salary disbursements	363,320	29,596	70.3
Forestry, fishing, related activities, and other	3,782	25,811	99.5
Mining	7,343	64,776	83.1
Utilities	2,983	64,131	82.0
Construction	31,224	35,387	79.5
Manufacturing	20,443	37,589	73.2
Durable goods	12,943	36,275	67.1
Wood products	4,855	37,412	107.8
Nonmetallic mineral products	998	35,402	78.0
Primary metals	356	38,573	70.6
Fabricated metal products	1,413	35,425	80.1
Machinery	1,433	44,013	81.1
Computer and electronic products	535	36,807	44.9
Electrical equipment	179	41,480	83.3
Motor vehicles and parts	400	34,198	61.0
Other trans. equipment	180	34,083	50.1
Furniture and related products	1,003	27,185	79.0
Miscellaneous	1,591	32,364	69.2
Nondurable goods	7,500	39,855	85.6
Foods	2,666	28,937	78.9
Beverage and tobacco products	806	27,241	52.7
Textile mills	(D)	(D)	(D)
Textile product mills	187	20,690	65.8
Apparel	134	28,619	92.2
Leather and allied products	65	16,015	45.1
Paper	(D)	(D)	(D)
Printing and related support activities	1,135	28,397	67.5
Petroleum and coal products	933	84,446	98.7
Chemical	683	50,605	69.3
Plastics and rubber products	317	27,328	66.8
Wholesale trade	16,765	40,448	69.7
Retail trade	57,914	22,164	86.6
Transportation and warehousing	13,753	39,411	93.3
Information	7,765	37,426	56.5
Finance and insurance	16,618	43,761	55.7
Real estate and rental and leasing	6,249	26,297	62.6
Professional and technical services	19,692	42,001	61.5
Management of companies and enterprises	1,222	48,005	54.1
Administrative and waste services	18,294	22,266	75.8
Educational services	4,648	18,893	59.5
Health care and social assistance	55,842	32,620	84.1
Arts, entertainment, and recreation	11,574	16,712	53.8
Accommodation and food services	46,497	12,810	75.4
Other services, except public administration	20,712	21,121	80.9
Government and government enterprises	93,328	34,107	81.2
Federal, civilian	13,528	55,101	87.8
Military	8,253	32,793	79.9
State and local	71,547	30,289	77.5
State government	26,147	31,854	79.6
Local government	45,400	29,388	75.8

Note: D is not disclosed.
Source: U.S. Bureau of Economic Analysis.

Table 9
Exports and Value of Shipments
Montana 2002 to 2005
(Thousands of Current Dollars)

		- 2002 -			- 2003 -		
		Exports	Shipments	Exports as Percent of Shipments	Exports	Shipments	Exports as Percent of Shipments
NAICS code	Total manufacturing	289,886	4,987,577	5.8	272,722	5,334,052	5.0
311	Food products	13,212	482,611	2.7	13,517	529,657	2.6
312	Beverages & tobacco	5	(D)		19	(D)	
313	Textile mills	219	(D)		290	(D)	
314	Textile mill products	150	(D)		150	(D)	
315	Apparel	624	15,409	4.1	1,399	(D)	
316	Leather & allied products	416	(D)		629		
321	Wood products	20,345	854,352	2.4	21,650	757,899	2.9
322	Paper manufacturing	29,997	(D)		28,292	(D)	
323	Printing & related	150	(D)		148	(D)	
324	Petroleum & coal products	1,230	1,807,038	0.1	1,330	(D)	
325	Chemical	59,506	178,695	33.3	64,788	(D)	
326	Plastics & rubber products	1,716	56,039	3.1	2,201	(D)	
327	Nonmetallic mineral products	27,793	167,927	16.6	29,559	224,982	13.1
331	Primary metals	7,295	(D)		6,992	(D)	
332	Fabricated metal products	3,021	198,579	1.5	2,974	156,298	1.9
333	Machinery	71,782	197,393	36.4	58,795	243,619	24.1
334	Computer and elec. products	17,031	(D)		13,281	(D)	
335	Electrical equipment, appliances & component	9,424	15,547	60.6	7,077	(D)	
336	Transportation equipment	8,533	70,968	12.0	11,424	(D)	
337	Furniture & related	345	75,067	0.5	142	(D)	
339	Micellaneous	17,092	186,048	9.2	8,064	185,163	4.4
		- 2004 -			- 2005 -		
		Exports	Shipments	Exports as Percent of Shipments	Exports	Shipments	Exports as Percent of Shipments
NAICS code	Total manufacturing	431,824	6,487,284	6.7	510,154	8,129,513	6.4
311	Food products	19,574	670,372	2.9	18,620	700,495	2.6
312	Beverages & tobacco	24	(D)		115	(D)	
313	Textile mills	165	(D)		332	(D)	
314	Textile mill products	250	(D)		533	(D)	
315	Apparel	1,035	(D)		1,577	(D)	
316	Leather & allied products	798	(D)		1,062	(D)	
321	Wood products	33,628	970,445	3.5	33,418	1,039,850	3.2
322	Paper manufacturing	39,633	(D)		35,854	(D)	
323	Printing & related	217	(D)		508	(D)	
324	Petroleum & coal products	2,683	(D)		3,115	(D)	
325	Chemical	120,616	(D)		128,632	(D)	
326	Plastics & rubber products	2,877	(D)		4,015	(D)	
327	Nonmetallic mineral products	28,925	(D)		31,163	(D)	
331	Primary metals	24,683	(D)		25,451	(D)	
332	Fabricated metal products	4,512	195,911	2.3	4,192	207,407	2.0
333	Machinery	113,849	183,426	62.1	158,773	242,030	65.6
334	Computer & elec. products	12,558	(D)		22,620	(D)	
335	Electrical equipment, appliances & component	5,353	(D)		7,266	(D)	
336	Transportation equipment	10,401	(D)		23,419	(D)	
337	Furniture & related	237	(D)		246	(D)	
339	Micellaneous	9,808	183,426	5	9,242	189,422	4.8

Note: (D) not shown to avoid disclosure of confidential information.

Sources: www.wisetrade.org (accessed May 29, 2008). U.S. Census Bureau, Census of Manufacturers. U.S. Census Bureau, Annual Survey of Manufacturers.

Table 10
Exports and Value of Shipments
Montana 2006
(Thousands of Current Dollars)

		- 2006 -		
		Exports	Shipments	Exports as Percent of Shipments
NAICS code	Total manufacturing	709,935	9,555,352	7.4
311	Food products	16,469	724,621	2.2
312	Beverages & tobacco	52	(D)	
313	Textile mills	300	(D)	
314	Textile mill products	756	(D)	
315	Apparel	1,926	(D)	
316	Leather & allied products	769	(D)	
321	Wood products	33,204	956,022	3.5
322	Paper manufacturing	40,664	(D)	
323	Printing & related	1,267	(D)	
324	Petroleum & coal products	4,361	(D)	
325	Chemical	210,402	(D)	
326	Plastics & rubber products	3,852	(D)	
327	Nonmetallic mineral products	33,292	(D)	
331	Primary metals	65,226	(D)	
332	Fabricated metal products	5,146	212,731	2.4
333	Machinery	190,189	299,171	63.6
334	Computer & elec. products	17,491	(D)	
335	Electrical equipment, appliances & component	10,026	(D)	
336	Transportation equipment	63,090	(D)	
337	Furniture & related	362	(D)	
339	Micellaneous	11,091	207,942	5.3

Note: (D) not shown to avoid disclosure of confidential information.

Sources: www.wisertrade.org (accessed May 29, 2008). U.S. Census Bureau, Census of Manufacturers. U.S. Census Bureau, Annual Survey of Manufacturers.

Table 11
Montana Manufacturing Exports,
by Country, 2003 to 2006
(Thousands of Current Dollars)

	-2003-	-2004-	-2005-	-2006-	
	Exports	Exports	Exports	Exports	Rank
Total All Countries	\$272,722	\$431,824	\$510,154	\$709,935	
Canada	150,759	199,136	217,688	299,594	1
Japan	22,187	50,349	53,169	81,793	2
Germany	7,087	11,767	48,970	54,556	3
China (Taiwan)	8,985	27,016	32,432	36,659	4
United Kingdom	9,032	14,601	22,551	34,953	5
Korea	7,418	17,355	24,296	31,795	6
Netherlands	11,736	6,790	15,775	30,467	7
Singapore	6,455	8,062	7,575	24,394	8
China (Mainland)	10,035	15,124	25,378	20,040	9
Mexico	4,054	12,000	7,461	10,958	10

Source: www.wisertrade.org (accessed May 29, 2008).

employer-paid fringe benefits and may not accurately reflect amounts currently received by workers.

The average Montana manufacturing wage and salary workers earned about \$37,600 in 2006, more than 23 percent higher than the average of \$30,500 for all workers in the state. The highest average wages within manufacturing (and indeed among all industries shown in Table 8) were the \$84,400 received in the petroleum refining industry. The next highest were the \$50,600 earned in chemical manufacturing and the \$44,000 earned in machinery manufacturing. The lowest paying manufacturing industries were leather and allied products (\$16,000) and textile products (\$20,700)—both relatively small industries in Montana.

Wages and salaries per worker in Montana are less than their respective U.S. average, reflecting the general trend of lower incomes in the state. Overall, wages and salaries per worker were about \$30,500 in 2006, roughly 72.7 percent of the U.S. average. For manufacturing, average wages and salaries per worker in Montana were 73.2 percent of the corresponding national average, only slightly higher than for all workers. Within manufacturing, all the industries except wood products were also less than their respective national averages.

Manufacturing exports. Montana manufacturing firms exported approximately \$709 million in 2006, up about 64 percent from 2004. The data in Table 10 show

that overall manufacturing exports grew more than 144 percent between 2002 and 2006. Exports accounted for about 7.4 percent of the total value of manufacturing shipments in 2006, representing a significant increase from the 5.8 percent reported in 2002.

Even though exports are a relatively small share of total manufacturing, they are very important (and growing) in certain sectors. The two largest industries in 2006 were machinery (which includes Semitool and Jore Manufacturing) with approximately \$190 million in exports and chemicals (which includes ASMI) with approximately \$210 million. The machinery industry exports represented about 63.6 percent of the value of their shipments. Corresponding data for the chemical industry is not available, but exports were about 33 percent of shipments in 2002. Chemical industry exports more than tripled between 2002 and 2006, and this percentage probably increased significantly.

The destinations of Montana manufacturing exports are summarized in Table 11. Canada remains the number one destination, accounting for roughly 40 to 55 percent of exports during the 2003 to 2006 period. Next are the other major world economic powers Japan (11.5 percent in 2006) and Germany (7.7 percent in 2006). The 2003-06 growth in manufacturing exports was not confined to one or two countries, all of the top ten nations experienced significant increases during this period.