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Sage Policy  
Group, Inc.

# **Manufacturing in Maryland: A Cornerstone of Shared Prosperity – An Update**

Submitted by:  
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Submitted to:  
Manufacturers' Alliance of Maryland

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## The Economic and Fiscal Impacts of Maryland's Manufacturing Sector – An Update

### Executive Summary

#### *Maryland's Manufacturing Sector Continues to Retrench*

- In early 2008, Sage Policy Group, Inc. (Sage) characterized and quantified the economic, fiscal and social contributions produced by Maryland's manufacturing sector. The analysis, which was exclusively based upon 2006 data available from publicly-available sources, concluded that manufacturing directly and indirectly supported nearly 334,000 jobs and \$86.5 billion in business sales as of that year (\$91 billion in 2010 dollars);
- The updated analysis based upon 2009 data reveals that manufacturing's support for employment in Maryland has declined 9 percent, wages are down 5 percent and business sales are off 13 percent since 2006. Associated State of Maryland revenues were down nearly 6 percent;
- The most recent data available indicate that Maryland is largely missing the national manufacturing recovery. Between December 2009 and December 2010, national manufacturing employment expanded 1.2 percent, but dipped another 6.3 percent in Maryland;
- Similar trends can be observed with respect to manufacturing payroll. Between December 2009 and December 2010, manufacturing payroll increased 3.8 percent in the U.S., but declined 1.8 percent in Maryland. Were Maryland's performance equal to the nation's over the past year, Marylanders would have been positioned to earn \$315 million more.

Exhibit E1. Economic impact of Maryland manufacturing, 2006 v. 2009 (dollars in 2010 \$millions)

<i>Economic Impact</i>	<i>Jobs</i>	<i>Wages</i>	<i>Business Sales</i>
2006	333,767	\$16,840	\$90,958
2009	303,855	\$16,063	\$79,271
<b>Percent Change</b>	<b>-9%</b>	<b>-5%</b>	<b>-13%</b>
<i>Fiscal Impact</i>	<i>2006 Total*</i>	<i>2009 Total</i>	<i>% Change</i>
Total for individuals and manufacturers	\$2,708	\$2,559	<b>-5.5%</b>

\*Reflects changes in tax rates from 2007 to today.

#### *There Remains Substantial Promise*

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- The industries in which Maryland enjoys the greatest leadership position generally sustained smaller declines in activity. For instance, total business sales supported by industry activity were down only 1 percent in chemicals, 4 percent in fabricated metal products, 5 percent in computers and electronics and 5 percent in transportation equipment;
- Maryland retains a formidable exporting sector led by transportation equipment, chemicals, computers and electronics, and machinery. Each of these sectors has experienced export growth over the past four years and total exports have expanded by nearly 30 percent in the last four years for which complete annual data are available.

#### *Conclusion*

For Maryland to achieve its full potential, export growth must continue to be rapid. The global economy is expected to more than double in size over the next 20 years. However, export growth depends on the

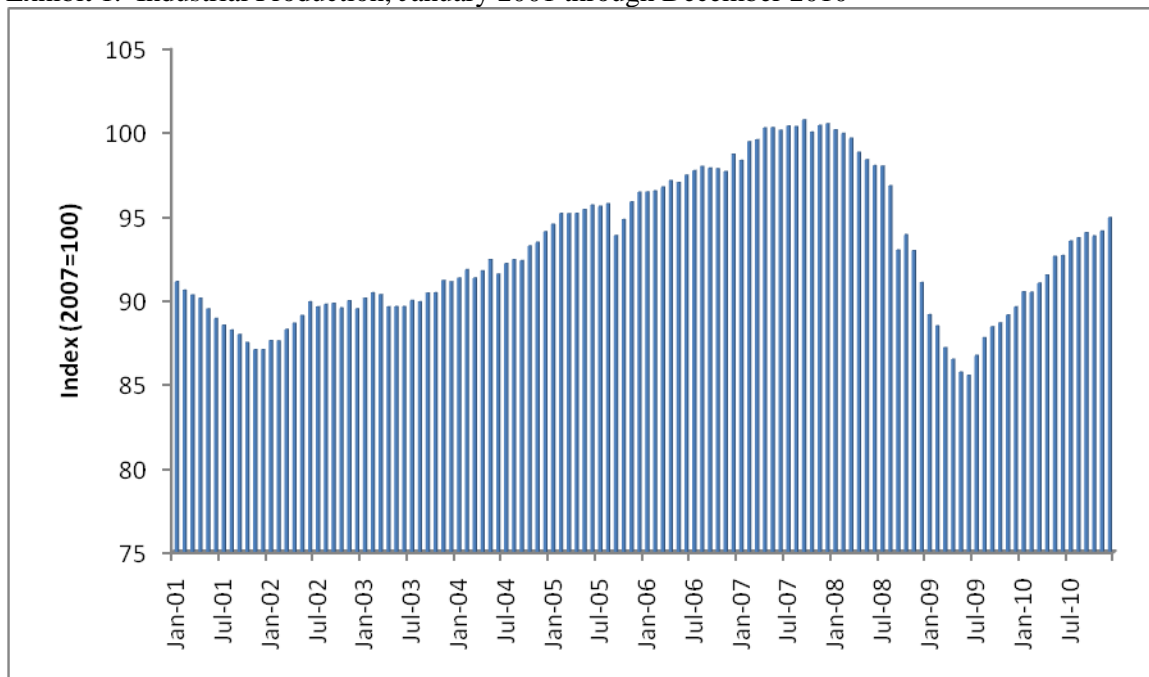
ongoing presence of a manufacturing sector that is large enough to be efficient, diverse enough to be resilient, and contemporary enough to innovate.

## Introduction

In early 2008, Sage Policy Group, Inc. (Sage) characterized and quantified the economic, fiscal and social contributions produced by Maryland's manufacturing sector. Despite years of employment decline and dislocation, through the third quarter of 2007, Maryland's manufacturing sector continued to contribute massively to the state's well-being. Our analysis, which was exclusively based upon 2006 data available from publicly-available sources, concluded that manufacturing directly and indirectly supported nearly 334,000 jobs and \$86.5 billion in business sales as of that year (\$91 billion in 2010 dollars).

This report represents an update. The time since Sage's initial investigation has been chaotic and has been associated with one of the deepest downturns in U.S. economic activity in generations. In absolute terms, no industry suffered as much as manufacturing, which experienced a massive downshifting in demand, production and employment. For instance, between September 2007 and June 2009, industrial production in America declined 15.1 percent. Manufacturing employment during that same period declined 14.5 percent and payroll fell a hefty 12.3 percent.

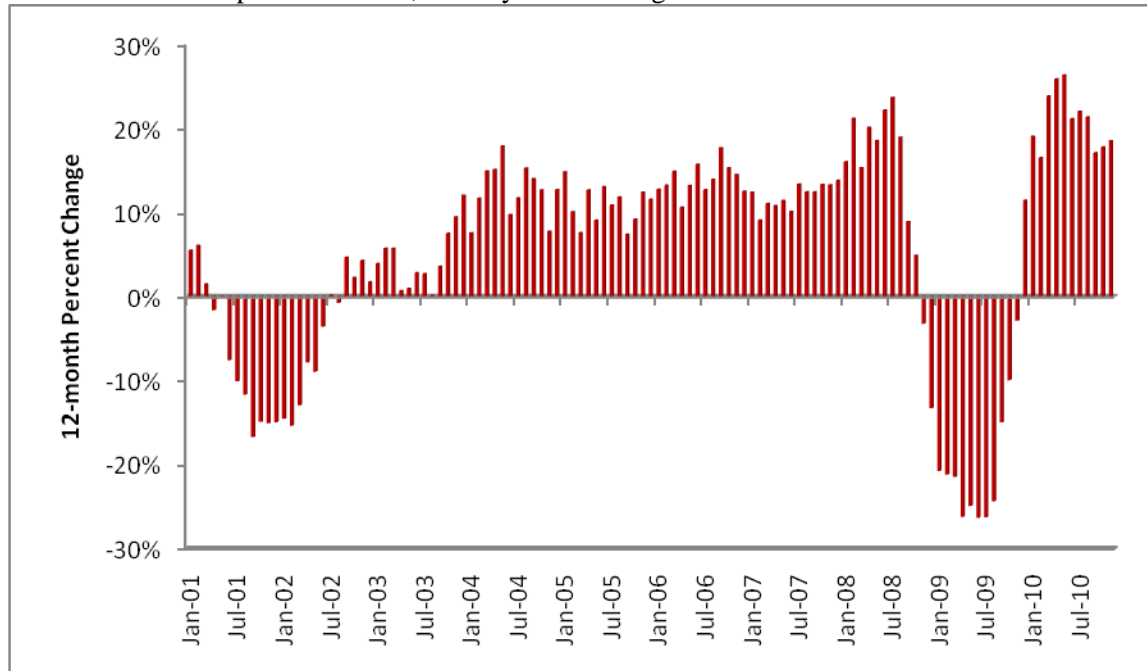
Exhibit 1. Industrial Production, January 2001 through December 2010



Source: Federal Reserve

But since June 2009, the U.S. economy has been in recovery, led in large measure by a substantial surge in industrial production and a rapid rise in exports. The question is whether Maryland is positioned to participate in the ongoing recovery of manufacturing, or whether the state's business climate will leave Maryland's manufacturers and exporters behind, and along with them many Maryland families.

Exhibit 2. U.S. Exports of Goods, January 2001 through November 2010



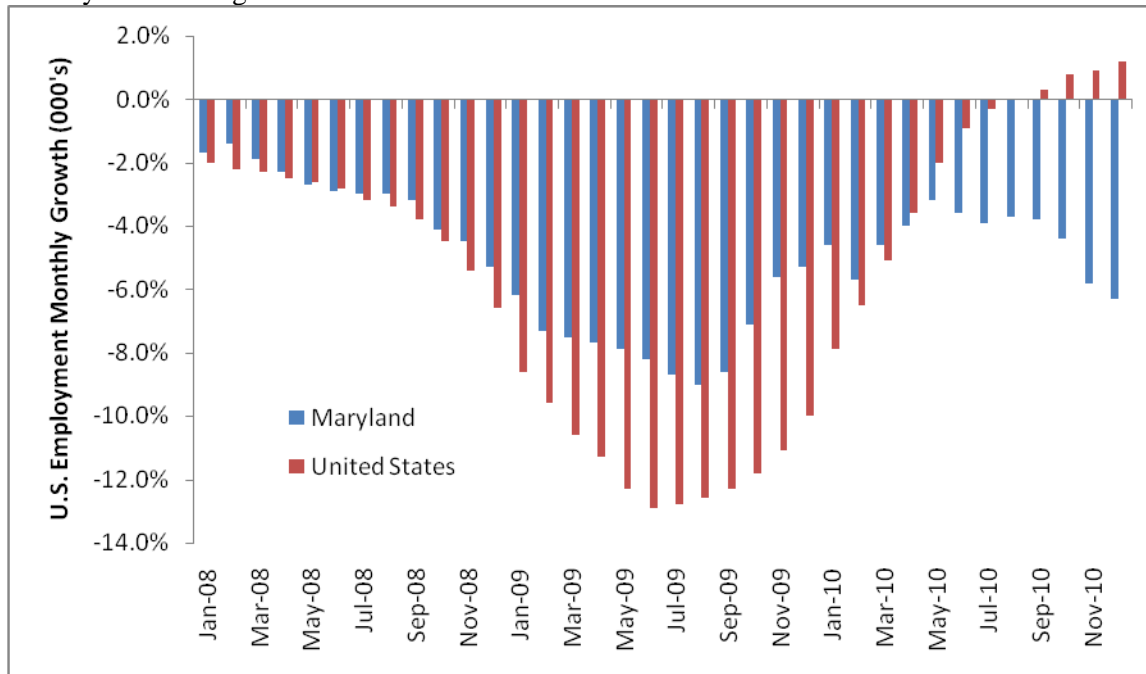
Source: Bureau of Economic Analysis

### The Recovery that Missed Maryland

Over the last twelve months, national manufacturing employment has grown by 1.2 percent, adding 136,000 jobs. In fact, as of this writing, monthly manufacturing employment in America has been improving for 18 consecutive months in terms of year-over-year employment. Unfortunately, during that same period, Maryland has continued to hemorrhage industrial employment. Over the past year, Maryland manufacturing employment slipped 6.3 percent.

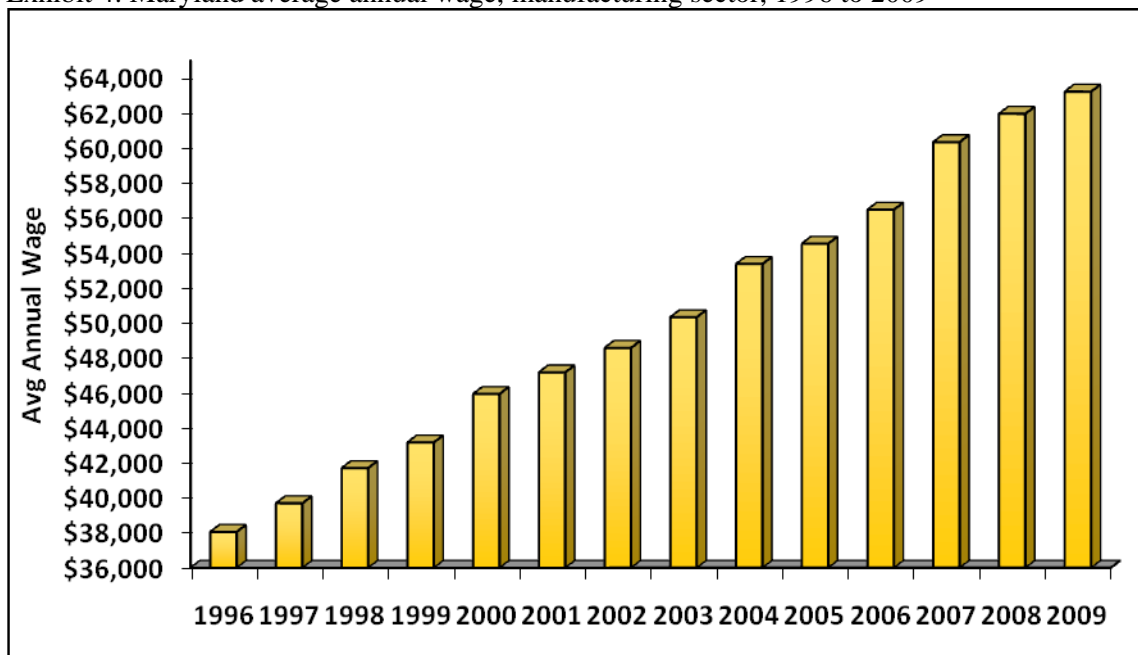
Similar trends can be observed with respect to manufacturing payroll. Between December 2009 and December 2010, manufacturing payroll in the U.S. increased 3.8 percent, but declined 1.8 percent in Maryland. Were Maryland's performance to have equaled the nation along this dimension over the past year, Marylanders would have been positioned to earn \$315 million more than they did. Each manufacturing job lost in Maryland is associated with larger losses in income over time. As exhibit 4 reflects, despite the ongoing loss in manufacturing employment in Maryland, average annual wages are rising as the state's manufacturing workforce becomes more technically sophisticated and increasingly concentrated in high value-added sectors.

Exhibit 3. National v. Maryland Manufacturing Employment Growth, January 2008 through December 2010



Source: BLS

Exhibit 4: Maryland average annual wage, manufacturing sector, 1996 to 2009



Source: Bureau of Labor Statistics

## The Economic and Fiscal Impacts of Maryland's Manufacturing Sector

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### Manufacturing's Economic Impact has Declined in Maryland over the Past Three Years

Exhibit 5 shows industry-by-industry economic impact in Maryland. Specifically, the total economic activity supported in Maryland by twenty-one sectors of the manufacturing industry is detailed in terms of jobs, associated wages and business sales. Of these twenty-one sectors, none support as much economic activity as they did three years ago. Sage's analysis concludes that manufacturing's support for employment in Maryland has declined 9 percent, wages are down 5 percent and business sales are off 13 percent. Overall sales declines were relatively larger because of a combination of falling output and lower prices.

Exhibit 5. Economic impact of manufacturing, 2006 v. 2009, wages and business sales in 2010 \$millions

Type of Manufacturing	2006			2009			Percent Change		
	Jobs	Wages	Business Sales	Jobs	Wages	Business Sales	Jobs	Wages	Business Sales
Food	46,846	\$1,789	\$11,266	45,288	\$1,907	\$10,545	-3%	7%	-6%
Beverage and tobacco product	12,425	\$521	\$4,710	11,099	\$429	\$3,692	-11%	-18%	-22%
Textile mills	2,358	\$99	\$594	1,506	\$60	\$336	-36%	-39%	-43%
Textile product mills	1,793	\$64	\$305	1,577	\$59	\$264	-12%	-8%	-13%
Apparel	2,363	\$93	\$569	2,204	\$64	\$409	-7%	-30%	-28%
Leather and allied product	299	\$13	\$81	270	\$9	\$54	-10%	-31%	-34%
Wood product	5,735	\$267	\$1,519	4,071	\$164	\$902	-29%	-39%	-41%
Paper	11,235	\$477	\$3,111	8,826	\$339	\$2,110	-21%	-29%	-32%
Printing and related support activities	20,203	\$1,044	\$3,380	16,673	\$773	\$2,544	-17%	-26%	-25%
Petroleum and coal products	2,588	\$126	\$1,092	2,164	\$89	\$752	-16%	-30%	-31%
Chemical	45,139	\$2,430	\$16,580	42,543	\$2,571	\$16,354	-6%	6%	-1%
Plastics and rubber products	13,291	\$745	\$3,263	12,421	\$589	\$2,635	-7%	-21%	-19%
Nonmetallic mineral product	10,608	\$487	\$2,471	8,359	\$365	\$1,792	-21%	-25%	-27%
Primary metal	15,234	\$602	\$3,860	13,602	\$508	\$3,158	-11%	-16%	-18%
Fabricated metal product	18,867	\$868	\$4,353	18,292	\$880	\$4,163	-3%	1%	-4%
Machinery	16,056	\$957	\$6,252	13,868	\$725	\$4,283	-14%	-24%	-31%
Computer and electronic product	66,272	\$4,318	\$17,917	63,149	\$4,570	\$16,970	-5%	6%	-5%
Electrical equipment and appliance mfg.	5,072	\$219	\$1,152	4,408	\$205	\$992	-13%	-6%	-14%
Transportation equipment	18,701	\$1,077	\$4,534	18,034	\$1,201	\$4,297	-4%	12%	-5%
Furniture and related product	7,252	\$259	\$2,714	5,652	\$192	\$1,914	-22%	-26%	-29%

Miscellaneous	11,430	\$386	\$1,236	9,848	\$364	\$1,102	-14%	-6%	-11%
<b>Total</b>	<b>333,767</b>	<b>\$16,840</b>	<b>\$90,958</b>	<b>303,855</b>	<b>\$16,063</b>	<b>\$79,271</b>	<b>-9%</b>	<b>-5%</b>	<b>-13%</b>

However, the industries in which Maryland enjoys the greatest leadership position generally sustained smaller declines in activity. For instance, total business sales supported by industry activity were down only 1 percent in chemicals, 4 percent in fabricated metal products, 5 percent in computers and electronics and 5 percent in transportation equipment.

Diminished economic activity translates into smaller fiscal impacts. Between 2006 and 2009, the fiscal impacts of manufacturing in terms of State of Maryland revenues declined nearly 6 percent or by approximately \$150 million per annum.

Exhibit 6. Fiscal impact of Maryland manufacturing, 2006 v. 2009, (in \$2010, millions)

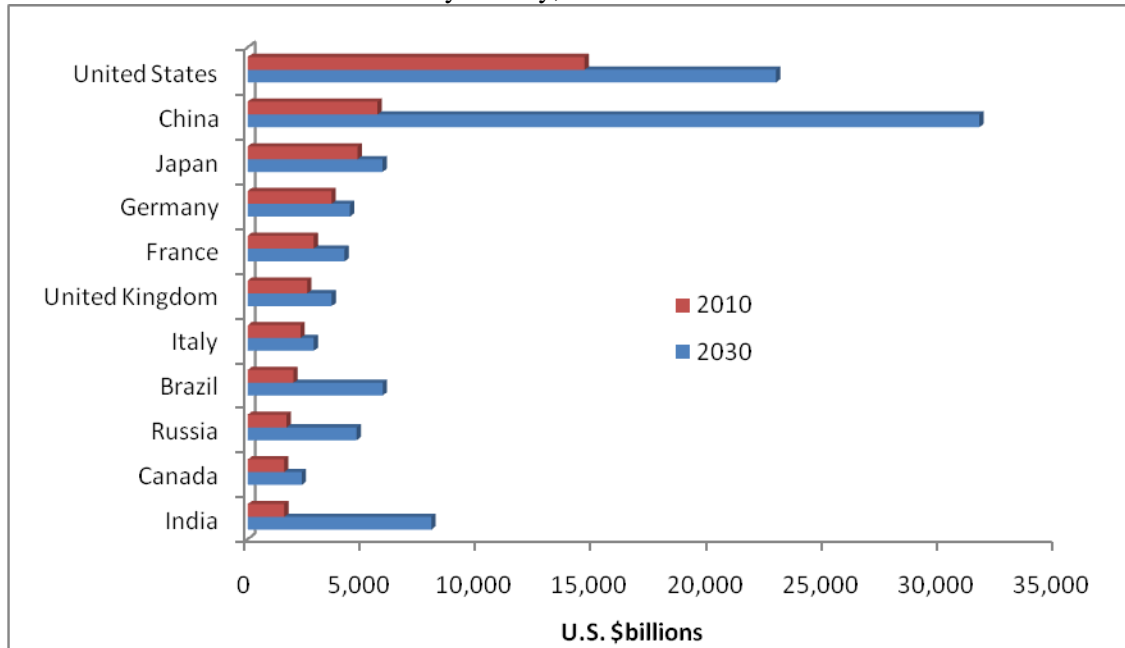
	<i>2006 Total*</i>	<i>2009 Total</i>	<i>% Change</i>
Fiscal impacts of Maryland manufacturing-associated wages	\$2,068	\$1,972	-4.6%
Fiscal impacts of Maryland manufacturing activity (e.g., corporate income tax, retail sales)	\$640	\$586	-8.4%
<b>Total for individuals and manufacturers</b>	<b>\$2,708</b>	<b>\$2,559</b>	<b>-5.5%</b>
*Reflects changes in tax rates from 2007 to today.			

### There is still much Promise

Despite years of decline and underperformance, Maryland's manufacturing sector continues to hold promise. Much of this is due to the ongoing expansion of the global economy, presently \$61 trillion in size based on market exchange rates. According to Goldman Sachs, by the year 2030, the expectation is that the global economy will be \$138 trillion in size, led by the then-largest economy in the world: China. The U.S. will be second according to expectations followed by India, Brazil and Japan. The largest growing markets by 20-year CAGR include China (+9.0%), India (+8.4%), the Philippines (+7.5%), and Malaysia (+6.9%).

For Maryland to achieve its full potential, significant export growth will be necessary. Export-related jobs tend to pay more than the average manufacturing job and the average manufacturing jobs pays substantially more than the average economy-wide employment opportunity.

Exhibit 7. Gross Domestic Product by County, 2010 and 2030

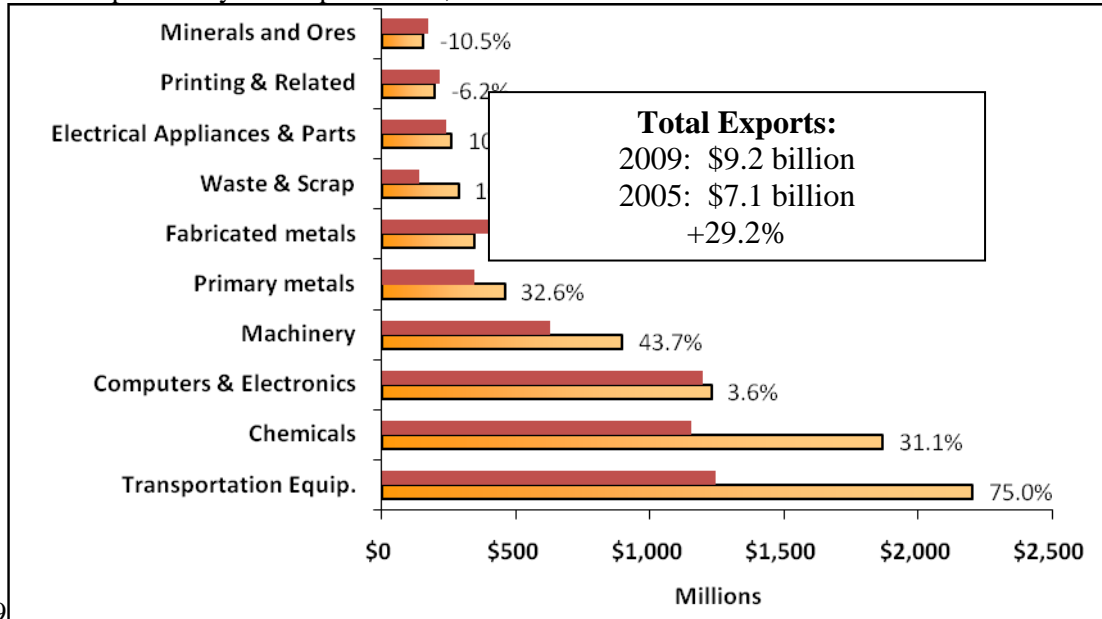


Note: Figures shown in fixed 2010 USD

Source: MSCI, FactSet, Goldman Sachs Global ECS Research

Fortunately, Maryland retains a formidable exporting sector. The exhibit below reflects Maryland's ten leading export sectors, led by transportation equipment, chemicals, computers and electronics, and machinery. Each of these sectors has experienced export growth over the past four years. Total exports have expanded by nearly 30 percent in the last four years for which complete annual data are available, though as Exhibit 9 reflects, 2009 itself was a year of export decline as the global economy retrenched.

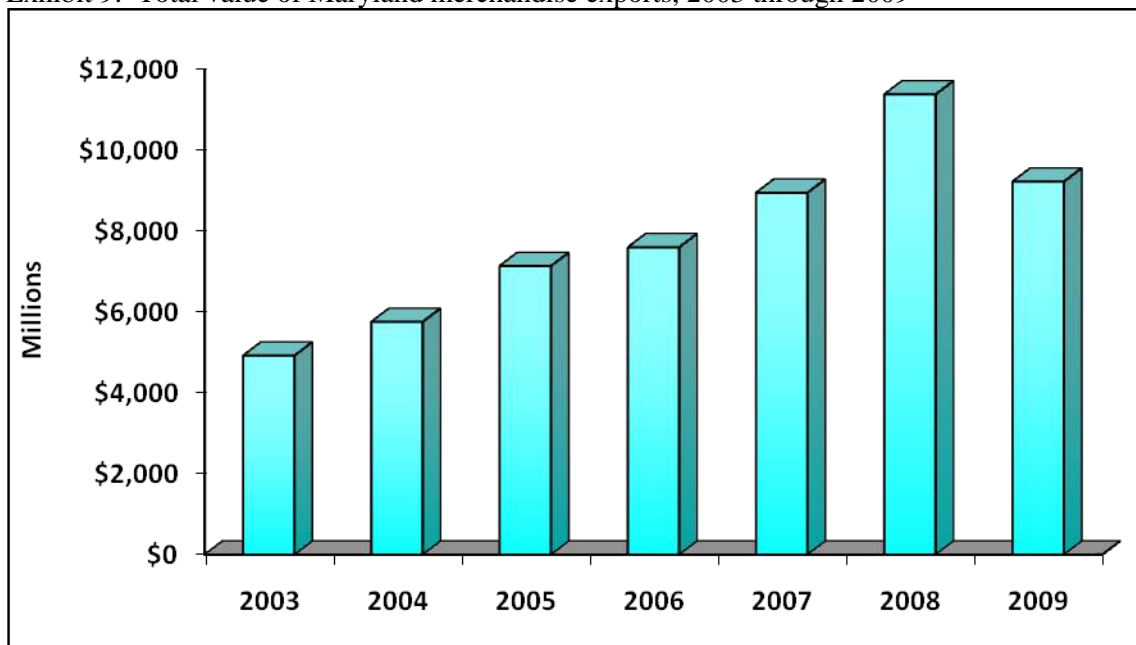
Exhibit 8: Top 10 Maryland export sector, 2005 v. 2009



2009

Source: U.S. Commerce Department

Exhibit 9: Total value of Maryland merchandise exports, 2003 through 2009



Source: U.S. Commerce Department

### Conclusion

Data characterizing the performance of Maryland's manufacturing sector over the past three years are somewhat discouraging. Maryland's manufacturing sector has scarcely begun to recovery despite the fact that manufacturing employment in America has been improving for 18 consecutive months in terms of year-over-year employment. Between December 2009 and December 2010, national manufacturing employment grew by 1.2 percent, adding 136,000 jobs, and association payroll expanded 4 percent. Unfortunately, during that same period, Maryland

continued to hemorrhage industrial employment, with manufacturing employment slipping 6.3 percent and payroll falling 1.8 percent.

Sage's economic and fiscal impact analysis reveals that over the past three years for which complete annual data are available, the number of jobs supported by Maryland's manufacturing sector (including multiplier effects) is down 9 percent, wages are down 5 percent and business sales are down 13 percent. Tax revenues accruing to the State of Maryland as a result of diminished manufacturing and manufacturing-related activity is off nearly 6 percent over that period despite an overall increase in tax rates.

But there remains considerable promise. The segments in which Maryland enjoys the most substantial leadership position, including chemicals, computers and transportation equipment suffered less dramatic declines in activity. Moreover, Maryland retains an expanding manufacturing export sector, led by high value-added segments such as transportation equipment, chemicals, electronics and machinery.

## Appendix

Between December 2007 and December 2010, national manufacturing employment slipped 9 percent. During that period, manufacturing employment in Maryland fell 16 percent.

Exhibit A1. Manufacturing Employment Growth, December 2010 v. December 2007

Rank	State	% Change	Rank	State	% Change	Rank	State	% Change
1	Alaska	-5.1%	18	West Virginia	-13.1%	35	Arizona	-16.5%
2	Wyoming	-8.0%	19	Wisconsin	-13.3%	36	Colorado	-16.8%
3	South Dakota	-9.0%	20	New Hampshire	-13.5%	37	Missouri	-16.9%
4	Hawaii	-9.2%	21	Kansas	-13.9%	38	North Carolina	-18.4%
5	North Dakota	-9.5%	22	Pennsylvania	-14.1%	39	Ohio	-18.6%
6	Texas	-9.7%	23	California	-14.2%	40	Mississippi	-18.9%
7	Nebraska	-9.8%	24	South Carolina	-14.6%	41	Tennessee	-19.0%
8	Iowa	-10.6%	25	Utah	-14.6%	42	Alabama	-19.1%
9	Vermont	-10.7%	26	New Mexico	-14.7%	43	Indiana	-19.3%
10	Maine	-10.7%	27	Kentucky	-15.1%	44	Rhode Island	-20.2%
11	Louisiana	-11.4%	28	New York	-15.4%	45	Oregon	-20.9%
12	Minnesota	-11.6%	29	Idaho	-15.7%	46	Georgia	-21.5%
13	Connecticut	-11.6%	30	Illinois	-15.8%	47	Delaware	-21.8%
14	Montana	-12.3%	31	New Jersey	-15.9%	48	Florida	-22.6%
15	Arkansas	-12.6%	32	Virginia	-15.9%	49	Nevada	-23.4%
16	Massachusetts	-12.7%	33	Oklahoma	-16.0%	50	District of Columbia	-23.5%
17	Washington	-13.0%	<b>34</b>	<b>Maryland</b>	<b>-16.0%</b>	51	Michigan	-24.0%

Source: Bureau of Labor Statistics

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