

**The Economic Effects on Michigan of the
Denso Manufacturing Michigan, Inc. Facility Expansion Decision**

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Abstract

Denso Manufacturing Michigan, Inc. is considering expanding its operations in Battle Creek, Michigan by adding 90,000 square feet of new manufacturing space and installing injection molding machines, furnaces, and assembly conveyor systems to add capacity to produce air conditioning and engine cooling modules. The facility would employ an additional 300 people by 2004. We estimate that by 2012, this expansion will have generated a total of 702 jobs in the state. Total state government revenues through 2012, net of MEGA costs and adjusted for inflation, would increase by \$23,684,000 (2002 dollars) due to the expansion of Denso Manufacturing Michigan, Inc.

The purpose of this study is to estimate the potential economic and fiscal benefits to Michigan of Denso Manufacturing Michigan, Inc. expanding its operations in Battle Creek, Michigan by adding 90,000 square feet of new manufacturing space and installing injection molding machines, furnaces, and assembly conveyor systems to add capacity to produce air conditioning and engine cooling modules (SIC 3714). Investment activity would take place between 2003 and 2004, with an investment of \$45 million. The facility would employ an additional 300 people by 2004.

The estimates of the benefits include the total number of jobs created in Michigan (by major industry, including spin-off jobs), and the associated personal income and state government revenue. Benefits net of the MEGA incentive package, from 2003 to 2012, are shown in the attached table. The MEGA incentive package includes a tax credit to the company for the period 2003 to 2012 equal to 50 percent of the state income tax rate on the payroll (gross wages) of employees hired at the facility as a result of the project.

The total employment effects, reported in the first line of the table, include the direct jobs created at the facility itself plus spin-off jobs. The spin-off jobs are generated from two sources, increased purchases from Michigan suppliers and spending by people who receive income due to the increased economic activity. The investment activity is expected to generate a total of 209 jobs in 2003 and 87 jobs in 2004; almost all of these jobs are temporary. In 2005, the first year of full operations without investment activity, an additional 779 jobs are generated in the state. We estimate that by 2012, this expansion will have generated a total of 702 additional jobs in the state. The total number of jobs created (direct plus spin-off) for every direct job introduced constitutes the "employment multiplier." The employment multiplier for the expansion averages 2.4 over the period 2005 to 2012. Sectoral detail on the employment gains is also shown in the table.

Personal income is shown in the next section of the table. Personal income is defined as the income of Michigan residents from all sources, after deduction of contributions to social insurance programs but before deduction of income tax and other personal taxes. As shown in the table, if Denso Manufacturing Michigan, Inc. were to expand its operations in Michigan under the incentive program, state personal income in 2005 would be higher by \$43.4 million (in current dollars) than it would be without the expansion, and in 2012 it would be \$53 million higher. Adjusted for inflation, these numbers in 2002 dollars would be \$32.1 million in 2005 and \$36 million in 2012.

The gain in economic activity results in higher state government revenues. We estimate that in 2005, the first year of full operations without investment activity, the new facility would generate \$3,338,000 in additional gross state government revenue, and that the MEGA package would provide a \$189,000 incentive to Denso Manufacturing Michigan, Inc. Thus, the Denso Manufacturing Michigan, Inc. expansion would increase state government revenues in 2005 by \$3,149,000, net of MEGA incentive costs.

Over the period 2003 to 2012, gross state government revenue is projected to increase by \$35,043,000 (in current dollars) due to the expansion of Denso Manufacturing Michigan, Inc. The MEGA incentive package for Denso Manufacturing Michigan, Inc. is forecast to cost \$2,026,000 over the period, resulting in a net increase in state government revenue of \$33,017,000. Adjusted for inflation, the total net increase in state government revenue from 2003 to 2012 would be \$23,684,000 in 2002 dollars.

None of these estimates include the nonmeasurable effects that would produce additional economic and fiscal benefits for Michigan, such as the intangible advantages of influencing other location and expansion decisions.

**Economic and Fiscal Effects on Michigan of the Denso Manufacturing Michigan, Inc. Facility Expansion
Net Benefits with the Incentive Package**

Economic/Fiscal Indicator	2003	2004	2005	2010	2012	Total 2003-2012
Total Employment	614	898	779	696	702	—
Manufacturing	195	376	349	324	324	—
Nonmanufacturing	419	522	430	372	378	—
Retail Trade	73	110	92	72	72	—
Services	120	185	138	107	111	—
Other	226	227	200	193	195	—
In current dollars (thousands):						
Personal income	27,400	44,800	43,400	49,600	53,000	455,700
Gross state revenue	2,107	3,445	3,338	3,814	4,076	35,043
MEGA cost	91	186	189	232	258	2,026
State revenue net of MEGA cost*	2,016	3,259	3,149	3,582	3,818	33,017
Adjusted for inflation (thousands of 2002 dollars):						
Personal income	21,869	34,668	32,140	34,596	36,043	326,809
Gross state revenue	1,682	2,666	2,472	2,660	2,772	25,132
MEGA cost	72	144	140	162	175	1,448
State revenue net of MEGA cost*	1,610	2,522	2,332	2,498	2,597	23,684

*These estimates do not include any state government revenue losses due to the Investment Tax Credit.

**Fiscal Effects on Michigan of the Denso Manufacturing Michigan, Inc. Facility Expansion
Net Benefits with the Incentive Package**

Year	Gross State Revenue	MEGA Cost	State Revenue Net of MEGA Cost
	(In thousands of current dollars)		
2003	2,107	91	2,016
2004	3,445	186	3,259
2005	3,338	189	3,149
2006	3,453	195	3,258
2007	3,537	201	3,336
2008	3,614	210	3,404
2009	3,707	221	3,486
2010	3,814	232	3,582
2011	3,953	245	3,708
2012	4,076	258	3,818