

**ECONOMIC IMPACT AND SMALL BUSINESS ANALYSIS:
METAL FURNITURE COATING**

This report contains portions of the economic impact analysis report that are related to the industry profile.

2 ECONOMIC IMPACTS

The MACT standards on metal furniture manufacturing facilities require these producers to reduce the level of HAPs in their coatings and solvents to meet the levels specified by the floor. The costs of meeting the MACT standards will vary across facilities depending upon their physical characteristics and current usage of coatings and solvents. These regulatory costs will have financial implications for the affected producers, and broader implications as these effects are transmitted through market relationships to other producers and consumers. These potential economic impacts are the subject of this section.

Inputs to the economic analysis include:

- Baseline characterization of metal furniture industry.
- Baseline market data as projected from industry and secondary sources.
- Compliance cost estimates for industry segments (through model plants) to meet the MACT floor standards.

The Agency has estimated the national total annual compliance costs for this regulation to be \$14.77 million in 1997.

Metal furniture production is an assembly-line process in which components are cut, assembled, and coated. The common structural materials used in production are steel and aluminum; however, there has been a recent trend toward the use of plastics for certain components. Production of metal furniture involves coating operations that emit HAPs through use of coatings with high solvent concentrations. Coatings and paints are applied to the metal surfaces to protect them from wear and corrosion. The coatings possess varying characteristics which make them suitable for different applications.

Households, businesses, and institutions purchase and use metal furniture and related products. The Standard Industrial Classification (SIC) of the industries that manufacture the various products covered under this source category are provided in Table 2-1. For the purposes on this analysis, the metal furniture industry segments are defined as:

1. **Metal furniture** classified by SIC codes 2514, 2522, and 2531 and include household metal furniture, office metal furniture, and public building metal furniture.

2. **Metal fixtures** classified by SIC 2542, 3645, 3646, and 2599 and includes cabinets, counters, display cases, residential lighting fixtures, commercial and industrial lighting fixtures, and institutional lighting fixtures.
3. **Fabricated metal products** covered by SIC codes 3429, 3469, and 3495 and includes furniture hardware, wastebaskets, stamped metal, and furniture springs.
4. **Dental and laboratory metal furniture and apparatus** covered by SIC codes 3821 and 3843 and include dental cabinets and chairs; and laboratory furniture, benches, tables, and cabinets.

Table 2-1 also lists the corresponding North American Industrial Classification System (NAICS) codes.

Table 2-1. SIC Codes and Metal Furniture Product Descriptions

SIC Code	NAICS Code	Title	Product Description
2514	337124	Metal Household Furniture	Bookcases, Chairs, Tables, Swings, Kitchen Cabinets, Medical Cabinets, Camp Furniture, Frames for Boxsprings, Cribs, Cots, Garden Furniture, Serving Carts
2522	337214	Office Furniture, Except Wood	Bookcases, Chairs, Tables, Desks, File Cabinets, Wall Cases, Partitions, Modular Furniture, Benches
2531	33636 3371271 3371274	Public Building and Related Furniture	Benches, Portable Bleacher Seating, Stadium Seating, Theater Seating, School Furniture, Church Furniture
2542	337215	Office and Store Fixtures, Partitions, Shelving, and Lockers, Except Wood	Cabinets, Counters, Display Cases, Display Fixtures, Bar Fixtures, Shelving, Showcases, Sorting Racks, Lunchroom Fixtures
3645	335121	Residential Electric Lighting Fixtures	Chandeliers (Residential), Floor Lamps, Lamps (Residential), Wall Lamps, Desk Lamps, Lamp Shades (Metal), Table Lamps
3646	335122	Commercial, Industrial, and Institutional Electric Lighting Fixtures	Chandeliers (Commercial), Desk Lamps
2599	3371277 337127A 3391137	Furniture and Fixtures, Not Elsewhere Classified	
3429	332951	Hardware, Not Elsewhere Classified	Furniture hardware, Convertible bed mechanisms
3469	3321165	Metal Stampings, Not Elsewhere Classified	Wastebaskets, Stamped Metal
3495	3326124	Wire Springs	Furniture Springs, Spring Units for Seats
3821	339111	Laboratory Apparatus and Furniture	Laboratory Furniture, Benches, Tables, Cabinets
3843	339114	Dental Equipment and Supplies	Dental Cabinets, Dentists' Chairs

The following subsections address the economic impacts of the regulation on the individual industry segments and the product markets served by those facilities within each segment.

2.1 Market Impacts

In conducting an economic impact analysis, the Agency typically models the responses by producers and markets to the imposition of the proposed regulation. The alternatives available to producers in response to the regulation and the context of these choices are important in determining the economic and financial impacts. Economic theory predicts that producers will take actions to minimize their share of the regulatory costs. Producers decide whether to continue production and, if so, determine the optimal level consistent with market signals. These choices and market feedback allow them to pass costs forward to the consumers of their end-products or services and/or to pass costs backward to the suppliers of production inputs.

Table 2-2 presents total annual compliance costs as a share of the value of shipments for the major industry segments affected by this regulation. These estimates are also provided for each SIC code within the metal furniture industry segment.

Table 2-2. Effect of Compliance Costs on Metal Furniture Producers by Industry Segment : 1997

Industry Segment	Value of Shipments (\$10 ⁶ /yr) ^a	Total Compliance Costs (\$10 ⁶ /yr)	Cost Share ^b (%)
Metal Furniture	\$11,791	\$4.4	0.04%
Household (SIC 2514)	\$2,275	\$1.7	0.07%
Office (SIC 2522)	\$8,001	\$1.9	0.02%
Institutional (SIC 2531)	\$1,515	\$0.9	0.06%
Metal Fixtures (SICs 2542, 3645, 3646, 2599)	\$10,334	\$7.5	0.07%
Fabricated Metal Products (SICs 3429, 3469, 3495)	\$5,150	\$1.8	0.04%
Dental and Laboratory (SICs 3821, 3843)	\$4,686	\$1.1	0.02%
Total, all industry segments	\$31,961	\$14.8	0.05%

Notes: ^aTotal compliance cost are representative of the expected costs faced by affected facilities within the listed SIC codes.

^bRelative cost shares computed as the total compliance costs divided by the value of shipments.

Table 2-2 shows that compliance costs are an extremely small share of the value of shipments. Within the metal furniture industry segment, costs range from 0.02 to 0.07 percent of the value of shipments; therefore, indicating that the costs of meeting this regulation are not deemed significant. If the metal furniture producers were to partially or fully absorb the costs of complying with this rule, market prices would either increase by less than shown in Table 2-2 or not at all. Because of the product diversity within these SIC codes, the government and industry data do not provide the requisite production and/or price data upon which to base the economic modeling. In lieu of these data, the Agency has employed a 1997 baseline characterization for each industry segment where price is normalized to \$1 so that the “value of shipments” proxies the production quantity. The cost shares across the industry segments are then used as the “shifters” of the market supply curve in a partial equilibrium model.

Based on the Agency’s partial equilibrium modeling, as shown in Table 2-3, the projected change in market price and output is minimal as a result of the proposed MACT standard on existing sources. The market price and output impacts are less than 0.1 percent across all industry segments. The metal household furniture and the metal fixtures industry segments are projected to incur the largest impacts of 0.04 percent.

Table 2-3. Market Impacts on Metal Furniture Producers by Industry Segment : 1997

Industry Segment	Cost Share of Sales (%)	Market Impacts^a (%)	
		Price	Output
Metal Furniture	0.04%	0.02%	-0.02%
Household (SIC 2514)	0.07%	0.04%	-0.04%
Office (SIC 2522)	0.02%	0.01%	-0.01%
Institutional (SIC 2531)	0.06%	0.03%	-0.03%
Metal Fixtures (SICs 2542, 3645, 3646, 2599)	0.07%	0.04%	-0.04%
Fabricated Metal Products (SICs 3429, 3469, 3495)	0.04%	0.02%	-0.02%
Dental and Laboratory (SICs 3821, 3843)	0.02%	0.01%	-0.01%
Total, all industry segments	0.05%	0.02%	-0.02%

^a Percent change in market price and output result from the Agency's partial equilibrium model with unitary market supply and demand elasticities. As a result, the predicted percent change for price and output will be the same.

4 REFERENCES

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U.S. Department of Commerce, Bureau of the Census. 1999. Concentration Ratios in Manufacturing (for the year 1992).

**Appendix A. Summary Data for EPA Sampled Companies Operating Metal Furniture
Manufacturing Facilities: 1997**

Company Name	Sales (\$10⁶)	Employment	No. of Facilities		
			Total	Major Source	Small Business
Arrowhead Holdings Corporation	\$165.50	1,990	3	3	No
Atlas Springs Manufacturing Corporation	\$9.40	140	1	1	Yes
B-Line Systems	\$223.50	1,400	1	1	No
Crown Metal Manufacturing Company	\$13.00	125	1	0	Yes
Davies Office Refurbishing, Inc.	\$2.50	200	1	1	Yes
Dehler Manufacturing Company, Inc.	\$10.00	120	1	0	Yes
Den-Tal-Ez, Inc.	\$23.10	327	1	1	Yes
Genlyte Group Incorporated	\$664.10	3,490	1	1	No
Hickory Springs Manufacturing Company	\$23.10	295	2	2	Yes
HON Industries	\$1,696.40	9,824	7	4	No
Kimball International	\$1,107.00	9,556	2	2	No
Leggett & Platt Incorporated	\$3,370.40	27,000	10	10	No
Lozier Corporation	\$281.10	2,400	3	3	No
L.A. Darling Company, Inc.	\$300.00	3,000	2	2	No
Metal Creations	\$37.00	NA	1	1	Yes
Mid-West Chandelier Company	\$17.80	NA	1	1	Yes
National Service Industries, Inc.	\$2,031.30	16,700	7	1	No
Nevin Laboratories, Inc.	NA	NA	1	0	No
Professional Refinishing Organization	\$2.20	58	1	1	Yes
Republic Storage Systems, Inc.	\$52.00	450	1	1	Yes
Siemens Medical System, Inc.	\$11,144.00	57,950	1	1	No
Standex International Corporation	\$616.20	5,500	1	1	No
Steelcase Incorporated	\$2,742.50	16,400	11	11	No
Virco Manufacturing Corporation	\$273.60	2,373	1	1	No
			62	49	10