MANUFACTURING Institute

MAPI Manufacturers Alliance

2011 Report on the Structural Cost of U.S. Manufacturing

October, 2011

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FOREWORD

In the summer of 2008, on the heels of the greatest financial crisis since the Great Depression, the U.S. economy stumbled badly, eventually contracting more than 5 percent from its peak. Manufacturing, for almost a century the engine that has driven the American economy, fared much worse – contracting more than 20 percent from peak to trough. Such a collapse made recovery all the more difficult for the economy at large, because manufacturing – while less than 12 percent of GDP – remains one of the most influential economic sectors. No sector stimulates more direct and indirect economic activity; no sector invests more in research, development, and innovation; no sector comes close to providing manufacturing's level of exports; no sector can match the average total compensation provided to its workers.

The good news for policymakers was that, in the initial recovery phase, U.S. manufacturing experienced a dramatic rebound in business, spawned by a huge inventory swing and a boost in exports, providing enough steam to keep a struggling U.S. recovery from backsliding.

The bad news was that, even with the sharp rebound, by the close of 2011 the factory sector had only clawed halfway back to its December 2007 peak. Unfortunately, full recovery is made all the harder by a fundamental challenge: U.S. manufacturers face a set of structural disadvantages that erode U.S. competitiveness and offset many of the productivity gains achieved through innovation and the relentless pursuit of efficiencies.

What follows on these web pages is an analysis of the cost of production in the United States. The initial groundbreaking report documenting the underlying structural costs of U.S. manufacturers was released in 2003. Subsequent reports were issued in 2006 and 2008. This new, web-based Structural Cost Report will allow The Manufacturing Institute and MAPI to provide a real-time analysis, with updates throughout the year.

What we find in the middle of 2011 is that structural costs are slowly eating away at the ability of U.S. manufacturers to compete effectively. While manufacturers have many challenges in the current global environment, domestically imposed costs are undermining our ability to compete by **adding at least 20 percent to the cost of doing business** in the United States.

We arrived at this figure by beginning with a raw cost index benchmark based on wage compensation relative to total value added in manufacturing, comparing the United States and nine major trading partners including Canada, China, and Mexico. Then, we compared the policy decisions that affect the cost of business in each country including: corporate tax rates, employee benefits, tort litigation, regulatory compliance and energy.

The analysis demonstrates how even nominally more expensive locations such as Canada or the United Kingdom are, in fact, lower-cost locations for production when these expensive cost factors are weighed.

In an era when policymakers have acknowledged the need to build a more competitive environment for manufacturers here, these underlying cost pressures are highly counterproductive. If ever there were a wake-up call for U.S. policymakers about the costs they continue to impose on U.S. manufacturers, this is it.

There is a wide range of policy steps that federal and state governments can immediately take to support stronger U.S. manufacturing; see the NAM's manufacturing strategy at **www.nam.org/strategy**. We encourage elected officials to begin shaping a pro-manufacturing agenda for the near future.

The loss of a strong manufacturing base would have unfortunate consequences for the U.S. standard of living as well as our national security. We urge all Americans who are concerned about the future of our country to understand the cost burden that U.S. companies face and help foster a new appreciation for manufacturing among policymakers, the media, and the American public.

We commend the author, Jeremy Leonard, economic consultant to MAPI, for his creativity in distilling huge amounts of sometimes disparate data to complete this project.

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SUMMARY OF FINDINGS

US manufacturers enjoyed a raw cost index (which represents production costs that are under the direct control of manufacturers) that is 9 percent lower than the trade-weighted average of their 9 largest trading partners. In all previous cost studies, the US RCI was higher than the trade-weighted average of the 9 countries.

The trade-weighted average structural cost burden (which includes corporate tax burden, employee benefits, tort costs, pollution abatement compliance, and energy costs) of U.S. manufacturers relative to their counterparts in our nine largest trading partners rose to 20 percent, up from 17.8 percent in the 2008 cost study.

As a result, the RCI advantage is completely erased by the structural cost burden. All in, US manufacturing costs are 9.3 percent higher than their 9 largest trading partners on a trade-weighted basis.

The increase is due entirely to widening gaps with our foreign competitors with regard to corporate tax rates and employee benefits. Taken together, these two structural costs account for 85 percent of the total gap, up from 75 percent in the 2008 cost study.

A bright spot in the update is trends in commercial tort costs, which have come down considerably in recent years. As a result, the foreign advantage with regard to tort costs has fallen steadily since the 2006 cost study, and is now estimated at just 1.6 percent below the US burden.

US manufacturers continue to enjoy a modest advantage with regard to energy costs, which, at 0.9 percent is unchanged from the 2008 study.

The burden of pollution abatement compliance is also unchanged, but this is mainly due to a lack of new relevant data for the United States. Unlike most other countries in the study, the United States does not collect systematic information on a regular basis, and the last such survey was completed in 2005.

RAW COST INDEX

Conceptually, the raw cost index for manufacturing is the ratio of wage compensation (which excludes benefit costs) to value-added in manufacturing. As explained in the 2003 cost study (page 9). This metric captures wage costs directly (abstracting from employee benefits) and raw materials and capital costs indirectly (because increases in these will reduce value added and push up the raw cost index). Because it is calculated in home currency rather than US dollars, changes in exchange rates have no effect on it by design.

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The US RCI was significantly lower than in 6 of the 9 trading partners. Only Mexico, China and Taiwan had a lower RCI. The main reason is because US manufacturers were much more nimble in downsizing their labor force in response to the 2008-09 recession. As a result, productivity growth continued to improve during the downturn, unlike in other countries where it is more difficult to shed workers.

The gap with Mexico (36 percent) is not nearly as large as wage differentials might suggest, though it has widened somewhat since the 2008 cost study. This is due to Mexican productivity improvements outpacing wage growth in recent years.

The gap with China (60 percent) is largely unchanged from the 2008 cost study, but because there is no updated data for China makes this number unreliable. We do know that average manufacturing wages in Chinese urban areas have increased by more than 40 percent since the 2008 cost study, but we have no reliable data on productivity trends since then, making calculation of the RCI impossible. However, it is highly unlikely that productivity grew by 40 percent since the 2008 cost study, implying that the China-US RCI gap is likely smaller than the data imply.

	United States	Canada	Mexico	Japan	China	Germany	United Kingdom	Korea	Taiwan	France	Average of 9 partners
2003	$24.30	$27.57	$8.11	$16.92	$5.34	$29.60	$28.30	$23.96	$16.41	$26.50	$19.30
2006	$23.85	$27.01	$8.11	$14.43	$5.34	$27.93	$27.88	$23.29	$15.58	$27.21	$17.91
2008	$29.83	$35.61	$23.37	$25.81	$12.41	$32.96	$44.43	$31.45	$22.13	$35.49	$27.63
2011	$29.83	$40.43	$18.99	$40.27	$12.41	$55.92	$48.98	$34.75	$23.85	$34.79	$32.75
Percent Change 2003-2011	22.8%	46.6%	134.1%	138.0%	132.4%	88.9%	73.1%	45.0%	45.3%	31.3%	69.7%

CORPORATE TAX RATES

The trade-weighted foreign corporate tax advantage reached 8.6 percentage points in the 2011 cost study (52 percent of the entire structural cost gap). The foreign advantage has increased steadily since the first cost study in 2003, when the gap was 5.6 percentage points.

The US is falling behind by standing still. While the federal and state combined rate has been unchanged, every other country in the study has lowered corporate tax rates at least once since 1997, and most countries have done so several times. The result is that the US rate is now second-highest in the OECD to Japan.

The increase in the foreign advantage since the 2008 tax study is due to rate reductions in Canada (36 percent to 31 percent), Germany (38.4 percent to 29.4 percent) and Taiwan (25 percent to 17 percent).

While some contend that a high US statutory rate masks a lower effective tax rate (due to advantageous depreciation schedules and deductions, careful work by Jack Mintz and Duanjie Chen shows that, even when these factors are taken into account, the effective tax rate on new business investment remains among the highest in the world.

Corporate Tax Rates (Foreign Advantage)

	Canada	Mexico	Japan	China	Germany	United Kingdom	Korea	Taiwan	France	Average of 9 partners
2003	3.4	6.0	-2.0	15.0	0.4	10.0	10.3	15.0	5.7	5.6
2006	3.9	11.0	-0.7	15.0	1.7	10.0	12.5	15.0	6.7	7.6
2008	3.9	12.0	-0.7	15.0	1.6	10.0	12.6	15.0	6.7	7.8
2011	9.0	10.0	-0.7	15.0	10.6	12.0	15.8	23.0	6.7	8.6
Change from 2003-2011	5.6	4.0	1.3	0.0	10.2	2.0	5.5	8.0	1.0	3.0

Statutory corporate tax rates

Source: KPMG

Note: For China, a hybrid rate for domestic firms and companies in special economic zones is used

	U.S.	Canada	Mexico	Japan	China	Germany	U.K.	Korea	Taiwan	France
1997	40%	44.6%	34%	51.6%	33%	57.4%	31%	30.8%	25%	36.6%
2010	40%	31%	30%	40.7%	25%	29.41%	28%	24.2%	17%	33.3%

EMPLOYEE BENEFITS

The trade-weighted foreign employee benefit advantage reached 5.7 percentage points in the 2011 cost study (34 percent of the entire structural cost gap). The foreign advantage has increased steadily since the first cost study in 2003, when the gap was 5.6 percentage points.

Only French manufacturers devote a higher percentage of compensation to employee benefits than their US counterparts (31.2 percent vs. 23.6 percent).

In many competitor nations (Mexico, Japan, Germany, France and the UK), employer-paid fringe benefits have remained a fairly stable share of compensation since the first cost study. However, in the United States that share has steadily crept higher from 20.8 percent in 2001 to 23.6 percent in 2009, with most of the increase occurring since the 2008 cost study. The main contributors to this growth are the health and pension benefit components.

Most other nations finance the bulk of health care services from general revenues, with firms providing supplemental insurance. As corporate tax rates have come down, the direct cost to business of financing health care services has declined, offsetting any increases in supplemental insurance premiums.

Employee Benefits (Foreign Advantage)

	Canada	Mexico	Japan	China	Germany	United Kingdom	Korea	Taiwan	France	Average of 9 partners
2003	4.8	9.4	9.4	12.6	-3.6	5.1	-9.0	11.5	-10.7	5.5
2006	4.8	12.1	5.9	14.9	0.1	4.4	-1.2	10.9	-8.3	6.8
2008	2.2	11.1	4.1	3.9	-1.1	0.6	4.9	9.3	-10.1	3.6
2011	3.3	12.9	5.7	5.6	1.3	2.6	5.8	8.8	-7.6	5.7
Change from 2003-2011	-1.5	3.5	-3.7	-7.0	4.9	-2.5	14.8	-2.7	3.1	0.2

Employer Costs of Employee Compensation, United States

Source: Bureau of Labor Statistics Note: Does not include payroll taxes for Social Security and Medicare

	Employer-provided Health Care		Employer-provided Pensions	
	Dollars per Hour	Share of Compensation	Dollars per Hour	Share of Compensation
2001	$1.75	7.2%	$0.75	3.1%
2011	$3.21	9.7%	$1.57	4.8%
Percent Change 2001-2011	83.4%		109.3%	

TORT COSTS

The trade-weighted foreign tort cost advantage was 1.6 percentage points in the 2011 cost study (just under 10 percent of the entire structural cost gap).

Due to the fact that a rigorous international comparison of costs has not been done since the first cost study, **the results assume that tort costs in other countries have not changed significantly in the 2000s**. A thorough literature review of tort developments in Europe and elsewhere in the industrialized world undertaken prior to each cost study update broadly supports making this assumption, but it remains an assumption.

Unlike taxes and employee benefits, this foreign advantage has narrowed steadily since the 2006 cost study. Commercial tort costs in the United States have decreased by 12 percent from their 2004 peak of $173.5 billion. In the context of growing manufacturing output, the share of manufacturing value-added devoted to litigating tort claims fell to 2.9 percent in the 2011 cost study, compared to a peak estimated at nearly 5 percent.

This decline can in large part be credited to the Class Action Fairness Act, enacted in 2005, which reduced financial incentives for filing large class action suits and cracked down on "jurisdiction-shopping" for plaintiff-friendly court districts (see details in 2006 cost study p. 12 and 2008 cost study pp. 9-11).

Nevertheless, the fact remains that the US tort system is fundamentally different from most systems elsewhere in the industrialized world in that each party pays its own legal costs. In almost all other countries, plaintiffs must pay all or part of the defendant's legal costs in case of judgment in the defendant's favor. Because of the strong disincentives for groundless lawsuits in such systems, it is unlikely that the foreign advantage will disappear entirely without more fundamental changes to the incentive structure in the current US system.

Tort Costs (Foreign Advantage)

	Canada	Mexico	Japan	China	Germany	United Kingdom	Korea	Taiwan	France	Average of 9 partners
2003	3.1	N/A	3.3	N/A	0.7	3.4	N/A	N/A	1.3	3.2
2006	3.2	4.4	3.2	4.4	2.5	3.5	4.4	4.4	3.5	3.7
2008	2.9	3.2	3.1	3.2	0.5	3.2	3.2	3.2	1.1	2.9
2011	1.6	1.8	1.7	2.3	-0.8	1.8	2.3	2.3	-0.3	1.6
Change from 2006-2011	-1.6	-2.5	-1.5	-2.0	-3.3	-1.6	-2.0	-2.0	-3.7	-2.1

ENERGY COSTS

Energy costs were the only structural cost examined for which the United States had an advantage over its 9 largest trading partners on a trade-weighted average basis (0.9 percentage points).

While costs of many industrial energy sources are significantly lower in the United States than elsewhere, the fact that energy costs account for a very small proportion of overall manufacturing costs (averaging less than 2 percent of manufacturing shipments, compared to 15 percent for labor costs and50 percent for raw materials and intermediate goods – see 2008 cost study, p. 14) means that the effect on total costs is muted. For instance, the price of natural gas in the United States was $207 per million kCal, less than half the price in Japan and France and less than one-third the price in Taiwan and Korea, but these large gaps do not lead to large differences in the context of total structural costs.

Nonetheless, as previous cost studies have noted, the vast potential for oil and gas development in the United States should allow us to improve this cost advantage at least incrementally (as well as pursue the broader goal of reducing dependence on foreign sources) provided that restrictions on exploration and drilling are relaxed.

Energy Costs (Foreign Advantage)

	Canada	Mexico	Japan	China	Germany	United Kingdom	Korea	Taiwan	France	Average of 9 partners
2003	6.0	2.3	-12.5	2.3	-0.6	-2.1	-4.1	-15.3	4.2	0.5
2006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.7
2008	0.1	-0.4	-1.5	N/A	-1.7	-3.3	-4.3	1.2	-1.6	-0.9
2011	0.7	-1.9	-1.2	0	-1.9	-3.9	-4.2	0.8	-3.2	-0.9
Change From 2003-2011	-5.3	-4.2	11.3	-2.3	-1.3	-1.8	-0.1	16.1	-7.4	-1.4

POLLUTION ABATEMENT COSTS

The trade-weighted foreign pollution abatement cost advantage was 1.8 percentage points in the 2011 cost study (10 percent of the entire structural cost gap). **Due to a lack of updated data standardized by the OECD, this is unchanged from the 2008 cost study.**

The United States, unlike most other OECD countries, does not undertake regular surveys of pollution abatement costs. The last such survey was completed in 2005 and reported on in the 2008 cost study.

Furthermore, most nations that do collect such data are moving (at the OECD's suggestion) to a broader concept of "environmental protection" that encompasses a broader set of activities than reducing pollutants, making comparisons since the 2008 cost study essentially meaningless.

Pollution Abatement Costs (Foreign Advantage)

	Canada	Mexico	Japan	China	Germany	United Kingdom	Korea	Taiwan	France	Average of 9 partners
2003	2.8	N/A	2.3	N/A	2.4	3.0	N/A	N/A	1.5	3.5
2006	2.8	6.1	2.3	6.1	2.4	3.0	3.3	6.1	1.5	5.2
2008	0.7	3.3	0.7	3.4	0.2	2.7	0.5	3.4	0.2	1.8
2011	0.7	3.3	0.7	3.4	0.2	2.7	0.5	3.4	0.2	1.8
Change From 2006-2011	-2.1	-2.8	-1.6	-2.7	-2.2	-0.3	-2.8	-2.7	-1.3	-3.4

Cost of Regulatory Compliance for U.S. Manufacturers

Source: W. Mark Crain, Nicole V. Crain and Thomas Hopkins

	Number of Firms	Cost per Firm	Total Cost	Value-Added	Regulatory "Tax"
1997	N/A	N/A	$147.0B	$1,277.3B	11.5%
2004	296,121	$548,077	$162.3B	$1,482.7B	10.9%
2009	278,703	$688,194	$191.8B	$1,717.5B	11.2%

About The Manufacturing Institute
The Manufacturing Institute is the non-profit, non-partisan affiliate of the National Association of Manufacturers dedicated to changing the face of manufacturing in the country so that policy makers (government), educators, and the public understand its importance and take action to sustain and expand the industry in the United States. The Institute's strategic agenda focuses on education reform and workforce development, innovation, and research.
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