

Reports of the death of U.S. manufacturing have been greatly exaggerated.

Introduction

A certain fallacy has taken hold in Washington. Too many lawmakers are operating under a mistaken trio of assumptions: that U.S. manufacturing is on the decline, that unfair foreign competition explains that decline, and that failure to formulate a policy response to arrest and reverse that trend imperils the nation's future. The ascent of those views on Capitol Hill is a testament to the power of exaggeration, repetition, and indignation, and is a profound disservice to the truth. Some very bad policy options, predicated on those myths, are now under consideration in Congress.

Reports of the death of U.S. manufacturing have been greatly exaggerated. It is true that the number of workers employed in U.S. manufacturing industries declined by about three million between 2000 and 2003. It is also true that real wage growth in manufacturing has been anemic since the manufacturing recession earlier in the decade. And it is correct that the manufacturing sector's contribution to GDP has been shrinking. But those data are not evidence of a declining manufacturing sector or unfair trade competition. At most, they shed some light on a sector that is in transition. And during that transition, some phenomenal operating results have been registered.

Since the nadir of the manufacturing recession in 2002, the sector as a whole has experienced robust and sustained output, revenue, and profit growth, achieving gains in all three for four straight years. Two thousand and six was a record year for output, revenues, profits, profit rates, and return on investment in the manufacturing sector. And, despite all the stories about the erosion of U.S. manufacturing primacy, the United States remains the world's most prolific manufacturer—producing two and a half times more output in 2006 than those much-celebrated Chinese factories.

Of course, manufacturing is not monolithic. It comprises a variety of industries, each facing different economic circumstances. Some industries may be doing very well, while others struggle to adapt to changing circumstances. Accord-

ing to the findings presented in this paper, for every two U.S. manufacturing industries that experienced increases in revenue, one experienced a decline; for every two that saw their profits increase, one saw its profits decline; for every two that experienced increases in output, one experienced falling output. Thus, roughly two-thirds of U.S. manufacturing is doing well by the most traditional metrics of economic health. What about the other third? Can their lagging health be attributed to increased foreign competition? If so, are policymakers justified in intervening to try to change the tide?

This paper seeks to present the facts about the condition of U.S. manufacturing, while dispensing with some persistent myths along the way.

Proliferating Myths

Washington is abuzz with talk of U.S. manufacturing demise. Protectionists on the op-ed pages, on the airwaves, and in Congress emphasize the decline of U.S. manufacturing at the hands of insidious foreign competition, which has been enabled (if not encouraged) by an administration that has ignored the plight of blue-collar America, while tolerating unfair foreign trade practices. Reinforcing that perspective are the opinions expressed almost nightly by television talk show hosts, who seem more intent on stoking controversy than on providing a forum for honest debate.

The thrust of those messages, which continue even after several consecutive years of recovery and strong operating performance within the manufacturing sector, is that new trade policies are needed to arrest the decline of U.S. manufacturing, which would otherwise be in excellent financial health, and a reliable engine of U.S. job growth. Averting new, playing-field-leveling trade policies in the near term, so the message goes, will further erode U.S. capacity to maintain its position of global economic preeminence.

Several years into this campaign, and long after the facts on the ground have changed significantly, that message is gaining traction with

policymakers. One reason for the traction is that political action tends to lag behind economic or social circumstances. In 2007 we are five years beyond the nadir of the U.S. manufacturing recession, well into recovery and even record territory. Yet, Congress appears keen to act on behalf of the sector, as if its troubles weren't several years removed. Another reason has to do with the change in control of Congress last November. An agenda that caters to the wishes of labor—and its manufacturing industry benefactors—is more likely to resonate with the new Democratic majority.

The political story of manufacturing is all about job losses. Between 2000 and 2003, the number of workers employed in the U.S. manufacturing sector declined from around 17.3 million to around 14.5 million—a drop of 2.8 million workers.¹ But since then the rate of decline has reverted to the much more modest, decades-long manufacturing average. Between 2003 and 2006, the number of workers employed in the sector dropped to 14.2 million—a decline of only 300,000 workers.² And on top of that picture of stabilizing manufacturing employment, nearly all relevant statistics point to a thriving manufacturing sector.

Yet the three million jobs lost figure has become emblematic of some presumed failure of policy. That number has been cited and repeated so frequently that it is treated with a certain solemnity, a false significance, which far exceeds its utility as a measure of the condition of U.S. manufacturing then or now. The fact that the U.S. manufacturing sector has recovered fully from its recession in 2001–02, and has even reached new heights with respect to several important indicia, has been nearly totally lost in the political debate about what must be done to save manufacturing.

In March the congressional leadership unveiled its “New Trade Policy for America,” which contains several policy bullet points, including the following: “Democrats offer a trade policy that will [among other things] stand up for American workers, farmers, and businesses, *especially in the hard-hit U.S. manufacturing sector.*”³ Democrats advocate better enforcement of trade agreements to “ensure

that countries play by the rules so that trade is a two-way street.”⁴

For the record, last year the “hard-hit” manufacturing sector produced more output than at any other time in history, while achieving record sales and record profits (in constant dollar terms). Likewise, U.S. manufacturing exports reached record highs. Thus, trade is already a two-way street, and policymakers should resist any measures that might impede its flow.

Lawmakers are so keen to be seen doing something for manufacturing that many appear unwilling to acknowledge the sector's tremendous recovery. Such acknowledgement could deprive them of an opportunity to report back to their constituents how hard they are working for the American family.

Testifying recently at a House Ways and Means Committee trade subcommittee hearing on the merits of the Nonmarket Economy Trade Remedy Act of 2007 (a bill to, among other things, authorize the application of countervailing duties against nonmarket economies), Rep. Peter Visclosky (D-IN) offered, “My message, simply put, is that if we are to maintain a manufacturing base in the United States, we *must* have zero tolerance for unfair and illegal trade. . . . If our companies cannot count on a level playing field, then U.S. manufacturing has no long-term future.”⁵ Visclosky should also consider the growing importance of export markets to U.S. manufacturers lest he think there is nothing to lose by enacting aggressive trade legislation.

In May, Democratic members of the Michigan congressional delegation as well as the state's governor issued their “American Manufacturing Initiative,” billed as a “comprehensive initiative to revitalize U.S. manufacturing.”⁶ In offering his support of the initiative, Sen. Carl Levin (D-MI) opined that “the Bush Administration has not lifted a finger to support manufacturing in America while we have lost three million manufacturing jobs on its watch.”⁷ Rep. John Dingell (D-MI), another sponsor of the initiative, declared: “Manufacturers are hurting in large part due to this Administration's lax attitude toward unfair trade practices.”⁸

In fairness, Michigan's political representatives may have reason to despair about their

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manufacturing industries. While the rest of U.S. manufacturing has recovered, Michigan's manufacturing economy remains stagnant. Real GDP growth between 2005 and 2006 in Michigan ranked dead last among the 50 states. Meager manufacturing value-added growth contributed only 0.05 percentage points to what was a net contraction of the state's economy to the tune of -0.5 percent. Nationwide, the contribution of manufacturing was .41 percentage points to an overall GDP growth rate of 3.4 percent. Had Michigan's manufacturing sector been able to contribute as much as neighboring Indiana's manufacturing sector did to its overall economy, Michigan's economy would have actually grown—by 0.3 percent.⁹

The strength of manufacturing outside of Michigan is strong evidence that unfair trade and the administration's allegedly lax attitude toward it are not to blame for Michigan's problems. Manufacturing's woes in that state likely have more to do with the relatively high level of labor force unionization, restrictive work rules, and state laws and regulations that deter investment and business formation there.

In the presidential debates, candidates from both major parties have spoken about our fragile manufacturing sector and the unwillingness of the current president to respond with get-tough trade policies. Responding to a question by Chris Matthews about how he would be different from President Bush, Republican candidate Duncan Hunter offered: "You know, we won World War II, World War I and the Cold War with a major industrial base. We're losing our industrial base through bad trade policy right now. China is cheating on trade. I would enforce trade laws. That's something that the president is not doing."¹⁰

A top priority of Democratic candidate Dennis Kucinich would be to "cancel NAFTA, cancel the WTO, go back to bilateral trade conditioned on workers' rights, [and] human rights."¹¹

Even the Democratic presidential frontrunner, Sen. Hillary Clinton, has been perpetuating the myth and spreading fear about the impact of trade on manufacturing. Voicing her opposition to the pending U.S.-South Korea

Free Trade Agreement, Senator Clinton opined: "While I value the strong relationship the United States enjoys with South Korea, I believe that this agreement is inherently unfair. It will hurt the U.S. auto industry, increase our trade deficit, cost us good middle-class jobs and make America less competitive."¹²

And it's not only the politicians hemming about manufacturing and trade. Informing policymakers' perspectives are trade associations and lobbying groups promoting legislation that will give them an advantage over their competition. All too often, they are aided in these efforts by print and broadcast reporters who like sensationalistic and economically divisive stories. And sometimes the testimony of pro-protection experts is no better grounded in economics than the nightly commentaries of CNN's Lou Dobbs. According to recent congressional testimony of by Lawrence Mishel, an economist from the pro-union Economic Policy Institute:

For working Americans, the effects of the enormous growth in foreign trade have been mostly negative, resulting in the loss of good-paying manufacturing jobs, significant downward pressure on wages, and increased inequality. The doubling of trade as a share of our economy over the last 25 years has been accompanied by a massive trade deficit, directly displacing several million jobs. Most of these jobs were in the manufacturing sector, which included millions of union jobs that paid better-than-average wages. In just the five years from 2000–05, more than three million manufacturing jobs disappeared. We estimate that at least one-third of that decline was caused by the rise in the manufactured goods trade deficit.¹³

To paint this gloomy picture, Mishel ignores a host of economic facts. Since 1980 trade as a share of U.S. GDP has increased by 130 percent.¹⁴ Imports alone have increased six-fold.¹⁵ But that huge growth in trade has

occurred alongside the creation of 46 million net new jobs in the United States since 1980—1.8 million net new jobs per year.¹⁶ Meanwhile the average U.S. unemployment rate has decreased in each successive decade: in the 1980s, it was 7.3; in the 1990s, it was 5.8; and, since 2000, it has been 5.1.¹⁷ As of June 2007, the unemployment rate stood at 4.5 percent.

Given the manufacturing sector's return to record sales and profitability after the phase-out of those "better-than-average" paying union jobs, the competitive burdens imposed on manufacturers by union rules and wages should be obvious.

Despite U.S. manufacturing's overall health, in the 109th Congress more than two dozen pieces of trade legislation—most of them aimed at China—were introduced. In less than the first six months of the 110th Congress, more than one dozen pieces of trade legislation were introduced in response to, among other things, the presumed precariousness of U.S. manufacturing.¹⁸

Section 1, paragraph 8 of H.R. 294, which would prohibit the United States from negotiating or entering into any new bilateral or regional trade agreements for a period of two years, reads: "United States trade policies have had a devastating impact on the manufacturing sector in the United States; an estimated 2,800,000 manufacturing jobs in the United States have been lost since 2001."¹⁹

Likewise, section 1, paragraph 3 of H.R. 1002, a bill to impose import duties on Chinese goods unless and until China revalues its currency to the satisfaction of the Congress, is premised on the alleged impact of currency manipulation on U.S. manufacturing. It reads: "China's undervalued currency and the United States trade deficit with the People's Republic of China is contributing to significant United States job losses and harming United States business. In particular, the United States manufacturing sector has lost more than 3,009,000 jobs since January 2001."²⁰

Those urgent calls to arms rely on two premises: that U.S. manufacturing is in decline and that the failure of U.S. trade policy to address unfair competition is to blame. But

accepting those premises requires neglect of the abundant evidence to the contrary. The totality of evidence points to a robust manufacturing sector. If that were understood by policymakers, they might be less quick to endorse provocative trade policies, particularly given that manufacturers are America's chief importers, and export markets have been manufacturing's greatest source of growth in recent years.

The Real State of U.S. Manufacturing

By historic standards and relative to other countries' manufacturing sectors, U.S. manufacturing is in very good condition today. Those who speak of the demise of manufacturing often cite a few select facts: the decline in manufacturing employment, that sector's diminishing contribution to gross domestic product, and the stagnation of real manufacturing wages. Those are important statistics, which should be considered in context and weighed in conjunction with other relevant data if informed conclusions are to be reached and bad policy choices avoided.

Consider the following facts. In 2006, amid record imports of manufactured products:

- Real U.S. manufacturing output reached an all-time high.
- Real manufacturing revenues reached an all-time high.
- Real manufacturing operating profits reached an all-time high.
- After-tax profit rates for manufacturing corporations reached an all-time high.
- Return on equity for manufacturing corporations reached an all-time high.
- The value of U.S. manufacturing exports reached an all-time high.
- U.S. factories remained the world's most prolific, accounting for over a fifth of world manufacturing value added.

Given these facts, it is extraordinarily difficult to make a serious case that our manufacturing sector has been hard hit or is in decline. Should we lament the loss of high-paying union jobs when the subsequent output and productivity statistics make clear that those jobs were highly overpaid? With an overall unemploy-

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ment rate of 4.5 percent and average wages outside of manufacturing surpassing average manufacturing wages for the first time ever in 2006, it takes real creativity to paint a picture of gloom and doom.²¹ And does real manufacturing wage stagnation tell the full story of employee remuneration when firms cover a large part of their employees' dramatically increasing health care costs? Real wage growth is held back by inclusion of those inflating health care costs in the consumer price index (i.e., the denominator). Since employers cover a large part of those costs, they should be considered in the numerator as well, to ensure an apples-to-apples comparison. That's why total compensation, and not wages, is the proper metric of employee remuneration.

What about output and value added increases? How about record revenues and profits? Do they count for anything? Hasn't trade been a large net plus for the sector?

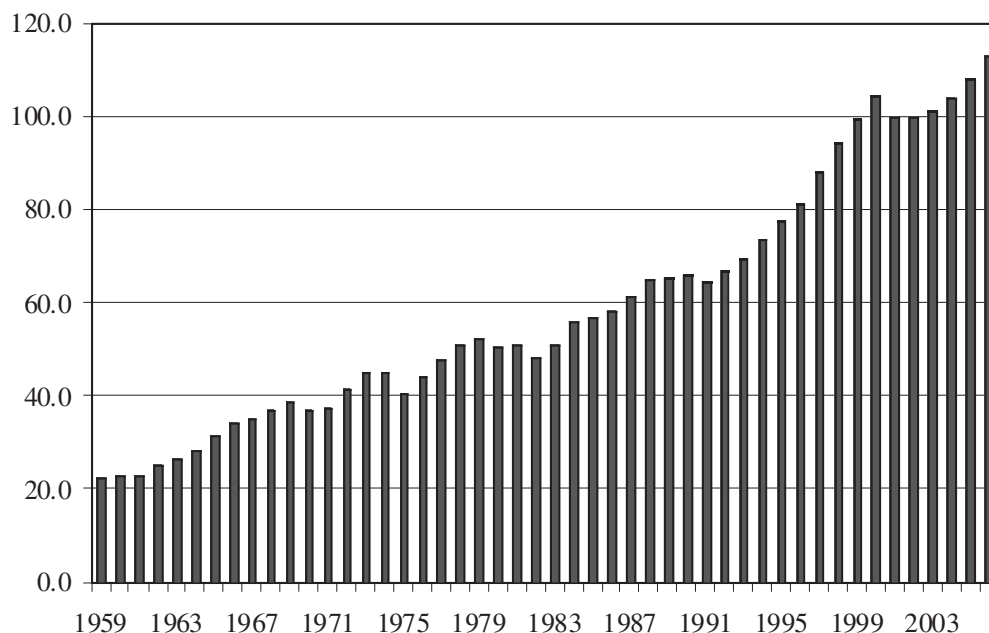
Output

As Figure 1 demonstrates, U.S. manufacturing output reached its highest level ever in 2006.

After declining by about four percent from 2000 to 2001 and remaining stagnant in 2002, output returned to its upward trajectory in 2003. In 2006 real output was 13 percent higher than in 2001, the year before the first full year of China's membership in the World Trade Organization. It was 53 percent higher than in 1994, the oft-cited "beginning of the end" for manufacturing as the North American Free Trade Agreement took effect, the Chinese government pegged its currency at about 8 yuan to the dollar, and Congress ratified the Uruguay Round Agreements Act, cutting trade barriers and establishing the World Trade Organization. It was well more than double the output of 1980, when imports were only 16 percent of their 2006 level; and it was more than five times greater than output in 1960, when the U.S. trade deficit was only 2 percent of its 2006 value.

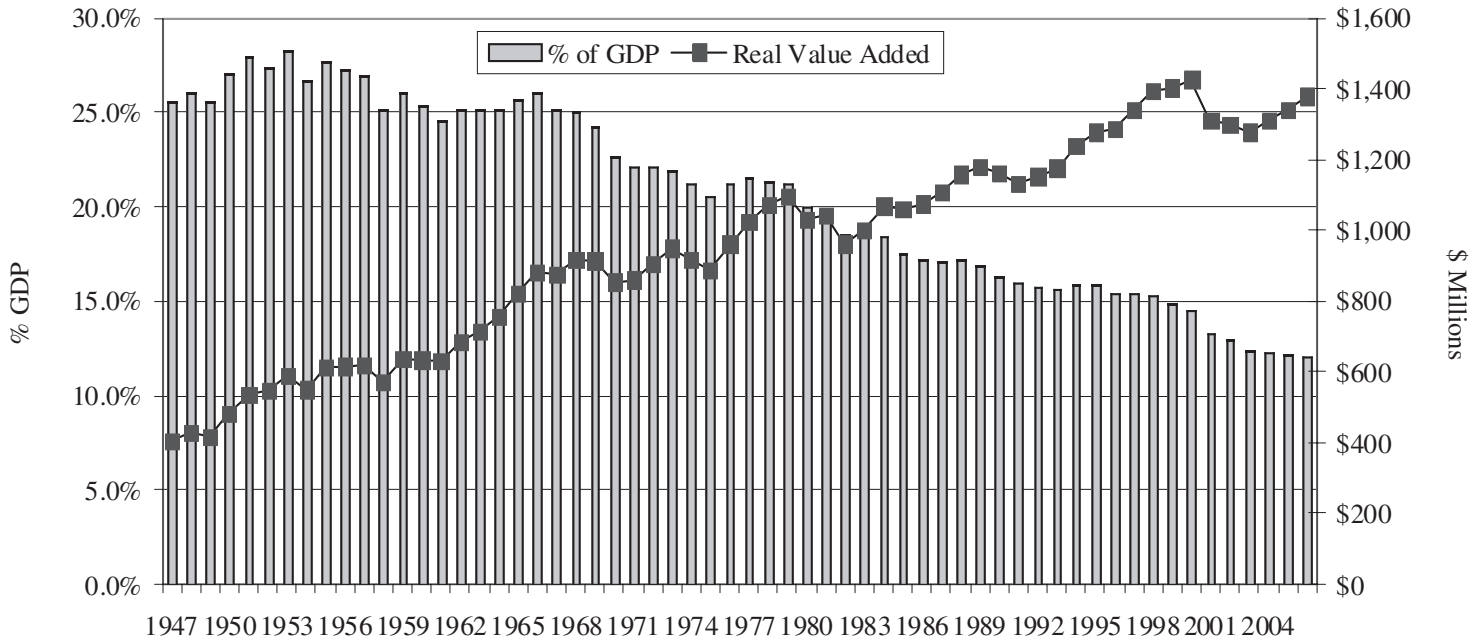
In other words, U.S. factories have continuously churned out more output year after year (with the exception of brief retractions during economic recessions) regardless of the decline in manufacturing employment and regardless

Figure 1
Real U.S. Manufacturing Output, 1959–2006 (Indexed to 2002 Output)



Source: *Economic Report of the President, 2007*, Table B-51.

Figure 2
Manufacturing Value Added, % of GDP and Real Value Added(1947–2006)



Source: Bureau of Economic Analysis, GDP-by-Industry Accounts, http://www.bea.gov/industry/gpotables/gpo_action.cfm.

of import levels. Thus, job attrition and rising imports are not particularly useful measures of the health of U.S. manufacturing, even though they are among the most frequently cited “evidence” of domestic decline.

Instead, the employment and output figures considered together suggest that with greater rates of labor productivity, far fewer workers are needed on the production line. The import and output figures considered together confirm findings reported by Daniel Griswold, whose research indicates a strong correlation between manufacturing imports and manufacturing output. They have risen and fallen together over a long time horizon.²²

U.S. manufacturers are among America’s largest importers. In 2006, “industrial supplies and material,” and “capital goods (except automotive)” comprised nearly 55 percent of all imports.²³ Those are the purchases of U.S. companies—not consumers. They are raw materials, components, and other intermediate goods used in the production of final products in the United States. Thus, access to foreign-produced com-

ponents, materials, and sources of energy are essential to U.S. manufacturers’ profitability. With access to imports compromised by trade restraints or a weaker dollar, costs of production tend to be higher, and profits tend to be lower.

Since imports are so crucial to U.S. manufacturers, some would suggest that total manufacturing output is a figure that obscures the true picture of the activity of U.S. factories. If a large portion of the final product comprises imported components, then assigning the total value of output to U.S. production inflates the portion of output that should be attributed to U.S. plants and workers. Accordingly, value added in U.S. plants is the more appropriate measure of U.S. output. And that metric, the skeptics suggest, reveals a manufacturing sector in decline.

As Figure 2 reveals, manufacturing value added is indeed declining as a percentage of the total U.S. economy. That’s not a recent phenomenon, though. Manufacturing’s share of GDP peaked in 1953, when it comprised 28.3 percent of the economy, and has been declining almost

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continuously ever since. Today it accounts for just over 12 percent of the economy.

Declining relative contribution of manufacturing to total economic output is true of all developed countries. Just as the agricultural sectors yielded in significance to the emerging manufacturing sectors during the 19th century, manufacturing has been yielding to services for the past half century. This process is nothing to be alarmed by, yet protectionists cite those statistics as though they were a sign of impending doom.

Although contribution to GDP provides information about the relative size of manufacturing, it reveals nothing about its health. Declining share of GDP is not a sign of manufacturing weakness, but a testament to the relative size and growing importance of the U.S. services sector, which has expanded more rapidly than manufacturing. In absolute terms, manufacturing value added has been increasing nearly every year since the end of World War II. For three straight years following the manufacturing recession, value added has been increasing. The \$1.38 trillion level reached in 2006 was the highest level since the \$1.43 trillion level in 2000, which was an all-time record for manufacturing value added.

Still, skeptics point out that U.S. manufacturing output growth has been mild relative to the growth experienced in other countries. Perennial, double-digit percentage increases in China's rate of economic growth relative to the steady but lower rates of growth in the United States have produced squeals of panic.

According to commentator and former presidential candidate Pat Buchanan, last year "China's economy grew by 10 percent—and by 140 percent over the last 10 years, tripling the growth in the United States. Not only are we shipping factories, technology, equipment and jobs to China, we are exporting our future to China."²⁴ While the growth rates differential may be true, Buchanan's point is as hyperbolic as it gets. As the world's largest manufacturer, starting from a large base of output, the United States would have difficulty growing at the same pace as a rapidly expanding developing country's manufacturing sector, where base year outputs

are much smaller. Smaller economies experience higher rates of growth for each incremental increase in output, relative to larger economies, because their bases are smaller.

A more informative benchmark for considering relative sizes and growth rates of different countries' manufacturing output is share of total world output over time. According to the United Nations Industrial Development Organization, the U.S. share of world manufacturing output, on a value-added basis, has remained steady for more than a decade. In 2005, U.S. factories accounted for 21.1 percent of the world's manufacturing output, which was only a very small decline from their 1993 share of 21.4 percent. Over that same period, Japan's share declined from 22.4 percent to 19.0 percent, and the combined share of the 27 members of the European Union declined from 29.3 percent to 26.5 percent. Meanwhile, China's share of world manufacturing value added increased from 3.5 percent in 1993 to 8.0 percent in 2005.²⁵

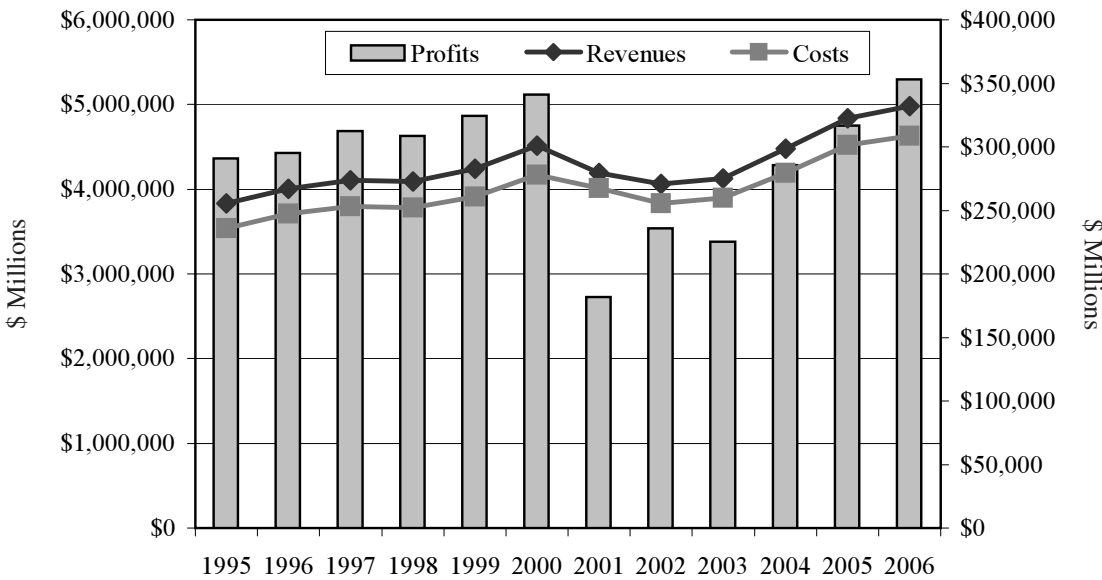
Thus, on a global basis, U.S. manufacturing continues to retain its position of primacy. Despite the alarmist rhetoric, U.S. factories are the most prolific in the world. Although China's share of world manufacturing output more than doubled between 2000 and 2005, U.S. producers still churn out 2.5 times the value added coming from Chinese factories.

Operating Performance

To complement the record output just established, U.S. manufacturing recorded its strongest financial performance ever in 2006. As Figure 3 indicates, after four consecutive years of sales revenue growth—representing a 22.5 percent increase since 2002—revenues hit a record of nearly \$5 trillion in 2006.²⁶ After declining slightly from 2002 to 2003, operating profits increased for three straight years and by a total of 57 percent to reach a record \$353 billion in 2006.²⁷

Most remarkable, perhaps, in light of all of the hand wringing about manufacturing's dire straits is that for the first time ever (or at least since the data show, going back to 1947), after-tax manufacturing profit rates broke through

Figure 3
All Manufacturing Revenues, Costs, and Profits (in Constant Million \$)



Note: Revenues and costs measured on left Y-axis; Profits measured on right Y-axis.
 Source: Bureau of the Census, Quarterly Financial Report for Manufacturing, Mining, and Trade Corporations (First Quarter 1995–Fourth Quarter 2006).

the 8 percent mark in 2006. Likewise, for the first time ever, return on equity in the sector exceeded an astounding 18 percent.²⁸ Thus, based on production and operating performance, U.S. manufacturing appears to be firing on all cylinders.

Employment/Productivity

Though the trend has been evident for decades, the first few years of this decade witnessed an accelerated decline in manufacturing employment. The loss of about 3 million manufacturing jobs has been used as a call to arms by those who see the manufacturing sector as under assault by foreign competition. But employment statistics are fairly uninformative as evidence of the health of an industry or sector.

As manufacturing employment has declined, value added per worker has increased (see Figure 4).

Declining employment in a sector that is producing record output is hardly credible evidence of doom. In fact, the two indicators taken together are evidence of rising labor pro-

ductivity, which, as the source of long-term increases in living standards, is something to cheer. As Harvard Business School professor Michael Porter put it in his influential book, *The Competitive Advantage of Nations*:

A nation's standard of living in the long term depends on its ability to attain a high and rising level of productivity in the industries in which its firms compete.²⁹

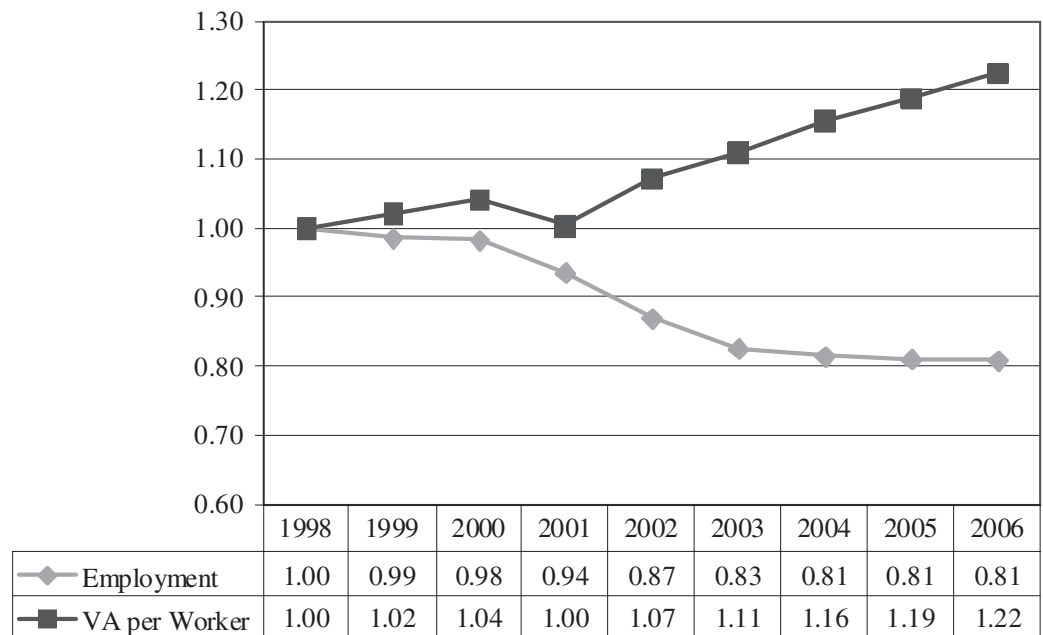
When manufacturers can produce more output with fewer and less costly inputs, that's called progress. With the national unemployment rate at 4.5 percent, 1.8 million net new jobs created each year, U.S. plants producing record output, and manufacturing companies earning record profits, what is so troubling about the loss of manufacturing jobs?

Compensation

The notion that most of the jobs lost were high-paying union manufacturing jobs and the

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Figure 4
Manufacturing Employment and Value Added per Worker 1998–2006
(Data Indexed to 1998 Values)



Source: Bureau of Economic Analysis.

new jobs obtained were all lower-paying service sector positions is also a myth. Not only are there many more jobs in the services sector than in manufacturing, but, contrary to popular misconception, the average wage paid in the services sector is higher than the average wage in the manufacturing sector.

According to a 2003 Commerce Department study, “Manufacturing in America,” which provided a comprehensive assessment of the state of U.S. manufacturing as it began its recovery from recession:

Manufacturing’s advantage in total compensation is based on benefits, rather than higher hourly wages. Average hourly earnings of production workers since 1967, when measured on an inflation-adjusted basis, suggest that manufacturing as a sector has offered an average, rather than high, hourly wage. There are, of course, specific sectors such as autos and steel that have offered wages far above the average, but

these are balanced by others that have offered below average wages. In fact, the average hourly earnings in the wholesale trade, finance, and services sectors have surpassed those in manufacturing over the past 10 years; only retail trade remains lower.³⁰

Real wage growth in manufacturing has been somewhat stagnant over the course of this decade. That would seem to suggest that the benefits of any productivity gains are not going to the workers. But wages are only a part of total compensation, which includes retirement, health care, other insurance, vacation pay, and other expenses. The costs of health insurance, in particular, have been increasing much faster than the consumer price index as a whole. Thus, the value of benefits employees receive has been increasing. The Commerce study provides some illuminating data on the topic:

The advantage of working in the manufacturing sector has derived, instead,

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from the higher level of average benefits received (\$8.89 per hour for manufacturing versus \$5.94 for non-manufacturing). Manufacturers contribute an average of \$0.81 per hour more for health insurance, \$0.66 more for overtime and supplemental pay, \$0.62 more for leave, \$0.29 more for retirement, and \$0.34 more for other benefits.³¹

Benefits continue to be a large part of manufacturing compensation, and total compensation has been rising since the recession. For manufacturing workers, real wages increased by a total of 4 percent between 2001 and 2005, while real benefits increased by 42 percent.³² Compensation for manufacturing workers was up 11 percent, as opposed to 6 percent for the economy as a whole.

Trade

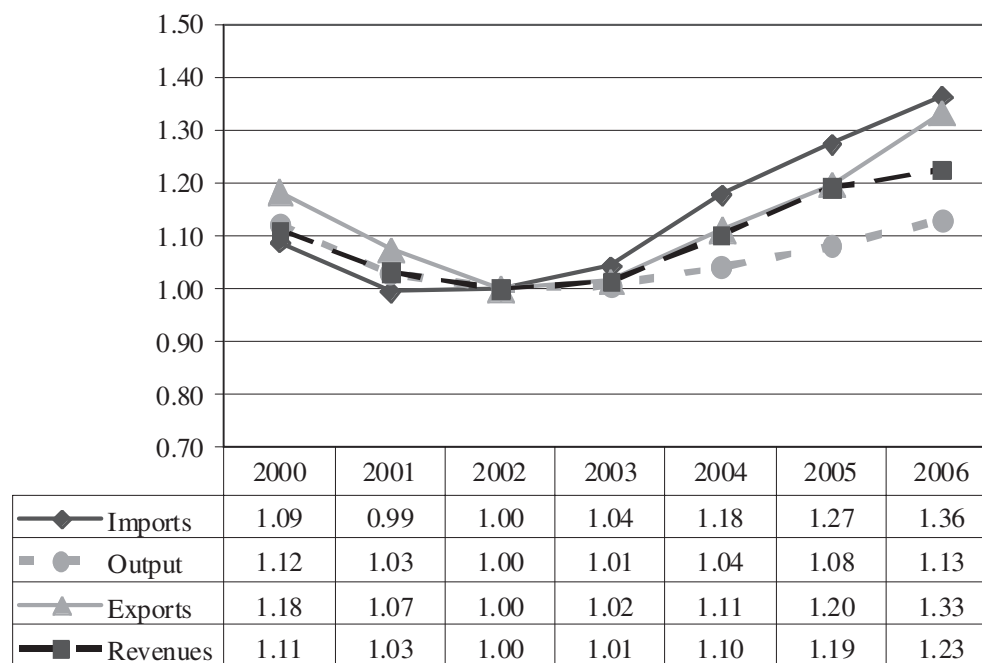
As described above, the rising level of U.S. imports and exports has been associated with

positive developments in key manufacturing performance indicia. As Figure 5 illustrates, changes in output, exports, and revenues closely track changes in imports, whereas Figure 6 demonstrates the relative unresponsiveness of compensation and employment to changing levels of imports. As manufactured imports declined in 2001 and 2002, manufacturing output, exports, and revenues declined as well. When imports began to pick up again as the manufacturing recession was ending, all of those real variables tracked upwards, adding yet more data points to the line that confirms a strong positive correlation. Contrary to the assertions of trade bashers, changes in compensation and employment appear to have been unaffected by changes in imports.

The premise that U.S. manufacturing is under duress from imports is not supported by the data, which instead indicates record manufacturing performance by the most relevant measures. As manufacturing imports have achieved new heights, manufacturing output,

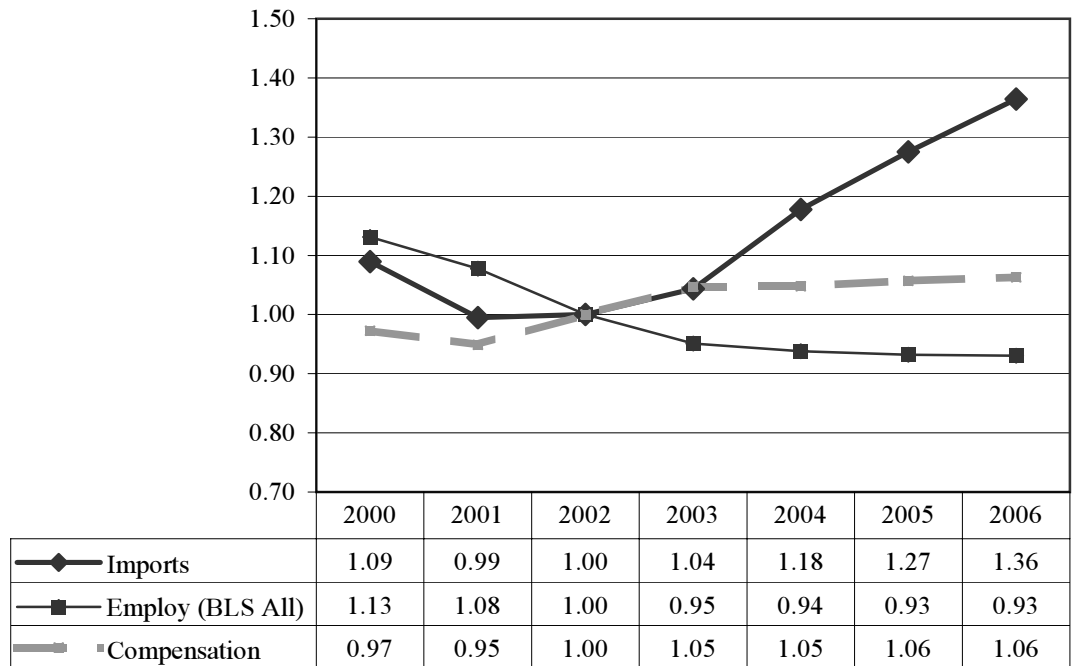
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Figure 5
Real Imports, Real Output, Real Exports, and Real Revenues, 2000–2006 (Values Indexed to 2002)



Source: U.S. International Trade Commission (imports and exports); Bureau of Economic Analysis (output); Bureau of the Census (revenues).

Figure 6
Real Imports, Real Compensation, and Employment, 2000–2006 (Values Indexed to 2002)



Source: U.S. International Trade Commission (imports); Bureau of Economic Analysis (employment and compensation).

revenues, exports, and profits have all set records, too. Trade is an important part of that success story: greater access to raw materials and components has helped control costs of production, while greater access to foreign markets has been crucial to surging sales revenues.

Adopting bellicose rhetoric toward trade partners and agitating for restrictive policies would be shortsighted even if there were wide-ranging problems within the manufacturing sector. U.S. manufacturers account for more than half of all U.S. import value. Just injecting uncertainty into the trade and investment climate, not to mention imposing restrictions, would likely lead to higher costs. Insisting on Chinese currency revaluation and risking retaliation by supporting provocative measures to compel that outcome, when the consequences of a rising Yuan could include higher raw materials' costs for U.S. producers is simply playing with fire. The same presumed dynam-

ic that would deter U.S. consumers from purchasing Chinese goods would affect U.S. producers by driving up their costs; and stronger Chinese demand for commodities and other materials, on account of a stronger currency, would also put upward pressure on the prices of oil, rubber, copper, iron ore, and other commodities needed by U.S. producers and paid for by U.S. consumers.

The data presented above indicate that the U.S. manufacturing sector is doing quite well, as a whole. But averages can obscure acute circumstances. To be sure, U.S. manufacturing is not monolithic. It comprises a variety of industries, each facing different conditions of competition for inputs and customers, each requiring different mixes of labor and capital, and each facing differing degrees and manifestations of competition from foreign producers. Skill sets of workers, exposure to international competition, volatility of the market, ability to attract capital, and other factors can differ dra-

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matically across industries. Some industries may be doing exceptionally well by historic standards and relative to their foreign competition, while others might be struggling by either standard or both. Some industries might be enjoying the fruits of international trade—better and more cost-effective access to raw materials and production components as well as access to bigger markets for their final products—while others have simply struggled to eke out profits as international trade has grown over the decades.

The remainder of this paper is devoted to assessing the state of U.S. manufacturing and the impact of trade on an industry-specific basis by presenting and evaluating objective, commonly used government data on operating performance, output, employment, compensation, and trade. As described in greater detail below, most industries within the manufacturing sector are doing well by those measures. The few that are not performing well—that have experienced declining revenues, profits, and output—are those less technologically intensive industries characterized by a lower-skilled workforce and lower wages.

In effect, the picture that emerges from these data about U.S. manufacturing and trade is a textbook explanation of comparative advantage. U.S. manufacturing, although declining in terms of its total contribution to U.S. output, is thriving at the higher end of the value chain, while it is atrophying at the lower end.

The Industry-Specific Details

The government agencies that collect data and publish reports on U.S. economic activity often present their findings by industry so that the state of the apparel industry, for example, can be distinguished from the state of the computer and electronics products industry. The most common classification system is the North American Industrial Classification System, which provides for 21 distinct manufacturing industries.³³

Presented below are the 21 broad (3-digit) manufacturing industries within the NAICS.

- 311, Food Manufacturing
- 312, Beverage and Tobacco Product Manufacturing
- 313, Textile Mills
- 314, Textile Product Mills
- 315, Apparel Manufacturing
- 316, Leather and Allied Product Manufacturing
- 321, Wood Product Manufacturing
- 322, Paper Manufacturing
- 323, Printing and Related Support Activities
- 324, Petroleum and Coal Products Manufacturing
- 325, Chemical Manufacturing
- 326, Plastics and Rubber Products Manufacturing
- 327, Nonmetallic Mineral Product Manufacturing
- 331, Primary Metal Manufacturing
- 332, Fabricated Metal Product Manufacturing
- 333, Machinery Manufacturing
- 334, Computer and Electronic Product Manufacturing
- 335, Electrical Equipment, Appliance, and Component Manufacturing
- 336, Transportation Equipment Manufacturing
- 337, Furniture and Related Product Manufacturing
- 339, Miscellaneous Manufacturing

For each of the 21 industries, data pertaining to production, financial performance, employment, productivity, compensation, and trade were collected and assessed. The data for each of those statistics are presented as appendices, and are referenced throughout the discussion below.

Table 1 provides a consolidated picture of the changes in those data, from which many useful conclusions can be drawn.³⁴ For each industry, the table includes a percentage change from 2002 (the nadir of the manufacturing recession) through the most recent full year for which data were available (either 2006 or 2005). It also includes a “rank” for each metric, where “1” corresponds to the best change in performance and

U.S. manufacturing is thriving at the higher end of the value chain, while it is atrophying at the lower end.

Table 1
Summary of Changes

NAICS	Industry Description	Revenues		Profits		Output		Value Added		VA/Worker		Compensation		Exports		Imports	
		%	Change	%	Change	%	Change	%	Change	%	Change	%	Change	%	Change	%	Change
		2002– Rank	2006	2002– Rank	2006	2002– Rank	2005	2002– Rank	2005	2002– Rank	2005	2002– Rank	2005	2002– Rank	2006	2002– Rank	2006
MFG	Total Manufacturing	22.5%	49.5%	8.07%	3.34%	10.78%	5.69%	33.22%	36.42%								
324	Petroleum and Coal Products Manufacturing	98.0%	1 452.4%	2 72.93%	1 123.46%	1 137.81%	1 11.73%	4 190.83%	1 161.18%	1 137.81%	1 11.73%	4 190.83%	1 161.18%	1 137.81%	1 11.73%	4 190.83%	1 161.18%
331	Primary Metal Manufacturing	58.7%	2 666.9%	1 29.08%	2 34.54%	2 45.97%	2 8.38%	6 118.61%	2 131.53%	2 45.97%	2 8.38%	6 118.61%	2 131.53%	2 45.97%	2 8.38%	6 118.61%	2 131.53%
327	Nonmetallic Mineral Product Manufacturing	36.8%	3 95.5%	5 9.87%	6 7.25%	8 10.49%	12 4.27%	14 16.03%	13 34.43%	8 10.49%	12 4.27%	14 16.03%	13 34.43%	10 36.8%	13 16.03%	14 16.03%	10 36.8%
333	Machinery Manufacturing	24.5%	6 123.0%	4 10.72%	4 6.35%	9 12.00%	11 7.10%	10 41.09%	3 58.88%	9 12.00%	11 7.10%	10 41.09%	5 58.88%	3 24.5%	10 41.09%	5 58.88%	3 24.5%
325	Chemical Manufacturing	18.9%	7 28.7%	9 12.33%	3 10.90%	6 17.46%	7 7.88%	7 48.29%	4 50.92%	7 17.46%	7 7.88%	7 48.29%	4 50.92%	4 18.9%	7 17.46%	7 48.29%	4 50.92%
337	Furniture and Related Product Manufacturing	33.5%	4 68.8%	7 5.99%	8 10.33%	7 17.68%	5 20.78%	2 35.31%	8 38.69%	4 68.8%	7 5.99%	8 10.33%	7 17.68%	5 20.78%	2 35.31%	7 17.68%	8 38.69%
321	Wood Product Manufacturing	12.8%	12 71.3%	6 10.33%	5 18.36%	3 18.78%	4 6.21%	11 17.73%	11 29.85%	12 71.3%	6 10.33%	5 18.36%	3 18.78%	4 6.21%	11 17.73%	12 17.73%	11 29.85%
332	Fabricated Metal Product Manufacturing	13.4%	10 61.6%	8 3.14%	11 12.29%	4 14.01%	9 2.64%	15 31.17%	6 44.94%	10 61.6%	8 3.14%	11 12.29%	4 14.01%	9 2.64%	15 31.17%	8 31.17%	6 44.94%
334	Computer and Electronic Product Manufacturing	18.4%	8 161.9%	3 0.14%	13 0.72%	10 14.94%	8 11.57%	5 15.20%	12 28.91%	8 161.9%	3 0.14%	13 0.72%	10 14.94%	8 11.57%	5 15.20%	14 15.20%	12 28.91%
326	Plastic and Rubber Products Manufacturing	25.1%	5 22.7%	10 5.19%	9 -4.57%	13 0.73%	16 2.05%	16 20.93%	5 47.89%	5 22.7%	10 5.19%	9 -4.57%	13 0.73%	16 2.05%	16 20.93%	10 20.93%	5 47.89%
339	Miscellaneous Manufacturing	16.0%	9 -5.0%	14 5.10%	10 11.83%	5 17.67%	6 5.65%	13 51.50%	14 24.25%	9 -5.0%	14 5.10%	10 11.83%	5 17.67%	6 5.65%	13 51.50%	3 51.50%	14 24.25%
311,312	Food and Beverage and Tobacco Products	13.1%	11 -10.5%	15 6.40%	7 -6.09%	15 -1.76%	17 1.66%	17 12.24%	9 34.92%	11 -10.5%	15 6.40%	7 -6.09%	15 -1.76%	17 1.66%	17 12.24%	16 12.24%	9 34.92%
313,314	Textile Mills and Textile Product Mills	-10.2%	16 4.6%	12 -15.07%	17 0.41%	11 26.58%	3 6.08%	12 7.89%	13 28.31%	16 4.6%	12 -15.07%	17 0.41%	11 26.58%	3 6.08%	12 7.89%	17 7.89%	13 28.31%
323	Printing and Related Support Activities	-5.4%	15 4.3%	13 -13.00%	16 -5.00%	14 3.99%	13 7.22%	9 14.93%	15 17.58%	15 -5.4%	15 4.3%	13 -13.00%	16 -5.00%	14 3.99%	13 7.22%	9 14.93%	15 17.58%
335	Electrical Equip., Appliance, and Component Mfg.	-1.7%	14 -19.4%	17 0.29%	12 -9.41%	16 3.69%	14 15.29%	3 39.76%	7 40.74%	14 -19.4%	17 0.29%	12 -9.41%	16 3.69%	14 15.29%	3 39.76%	6 39.76%	7 40.74%
322	Paper Manufacturing	-15.9%	18 -11.9%	16 -5.24%	15 0.22%	12 12.83%	10 7.72%	8 17.92%	15 20.16%	18 -15.9%	18 -11.9%	16 -5.24%	15 0.22%	12 12.83%	10 7.72%	8 17.92%	11 20.16%
336	Transportation Equipment Manufacturing	2.4%	13 -72.2%	18 -0.55%	14 -18.37%	17 -15.87%	18 -3.52%	18 29.30%	18 10.35%	13 -72.2%	18 -0.55%	14 -18.37%	17 -15.87%	18 -3.52%	18 29.30%	9 29.30%	18 10.35%
315,316	Apparel and Leather Products Manufacturing	-12.6%	17 13.7%	11 -28.40%	18 -25.60%	18 0.85%	15 23.12%	1 -15.48%	17 12.17%	17 13.7%	11 -28.40%	18 -25.60%	18 0.85%	15 23.12%	1 -15.48%	18 -15.48%	18 12.17%

Source: Bureau of the Census (revenues and profits); Bureau of Economic Analysis (value added, VA per worker, compensation); International Trade Commission (imports and exports).

“18” corresponds to the worst. The industries are presented in descending order of “average rank,” which is the rank calculated by averaging the ranks of the performance metrics—revenues, profits, output, value added, and exports.

What immediately stands out from these data is the fact that the strong performance of U.S. manufacturing as a whole, described above, has been widely distributed among its component industries. In other words, the average strength of the sector has not been driven by the strong performance of just a few industries.

From the perspective of real manufacturing revenues, 2002 was the nadir of the overall manufacturing recession. Real revenues for the sector had fallen nearly 10 percent from record levels in 2000. By 2006, real revenues had jumped nearly 23 percent for manufacturing as a whole, eclipsing previous sales records achieved throughout the 1990s, to establish a new record high of nearly \$5 trillion.

Contrary to assertions of the demise of manufacturing, 13 of 18 industries showed revenue gains between 2002 and 2006. Twelve of those 13 industries experienced double-digit percentage increases. Significantly, those gains do not reflect a one-time surge attributable to something aberrational. Out of the 13 industries experiencing revenue gains between 2002 and 2006, 12 experienced gains year-over-year, every year or every year but one, which suggests that revenue growth is an ongoing trend.³⁵

The profit picture was similar. The nearly 50 percent increase in real operating profits between 2002 and 2006 was also widely distributed. Real profits also increased for 13 of 18 industries, and 11 of those 13 experienced double-digit percentage increases. Nine of those 13 had year-over-year profit increases in every year or every year but one. But, unlike revenues, which bottomed out in 2002, manufacturing operating profits hit their low in 2001, plunging 47 percent from record highs the previous year. From 2001 to 2006, operating profits for the sector as a whole increased by a whopping 94 percent.

As far as production goes, real manufacturing output, which hit a record in 2006, increased for 13 of 18 component industries,

and real value-added increased for 12 of 18. All of the industries experiencing increased output had year-over-year output increases every year or every year but one.

As has been frequently noted, employment in the manufacturing sector has been declining for decades. After a pronounced 16 percent drop between 2000 and 2003, attrition rates returned to the longer-term, gradual rate of decline in 2004. All of the 3-digit manufacturing industries experienced job losses between 1998 and 2005 and between 2002 and 2005. But declining employment amid rising output reflects increasing productivity. Annual value added per worker increased from around \$81,000 in 1998 to around \$96,000 in 2005, an increase of 18 percent. Since the bottom of the recession in 2002, value added per worker has increased nearly 11 percent. All but two industries experienced increases in productivity over that period.

Although real wage growth has been sluggish throughout manufacturing, wages are only part of total compensation. In manufacturing in particular, the value of employee benefits tends to be higher than the average in the overall economy. Whereas real wage growth between 2002 and 2005 was 3.4 percent for manufacturing as a whole, real benefits growth was 13.6 percent. Total compensation thus increased by about 5.7 percent over the period.

Total compensation growth economywide was 4.1 percent over the period, a figure that was surpassed by 14 of 18 manufacturing industries. Only one manufacturing industry, transportation equipment manufacturers, experienced a decline in real compensation since 2002.

Impact of Trade

Given the findings of robust manufacturing health, the contention that trade is a cause of manufacturing decline is all but moot. Of course, some industries have not been doing as well as others. Has trade had a different impact with respect to those industries?

What is perhaps most surprising about the data, given the antitrade rhetoric so popular in Washington, is that export growth was evident

What immediately stands out is the fact that the strong performance of U.S. manufacturing as a whole has been widely distributed among its component industries.

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for all but one of 18 industries. Double-digit percentage export growth between 2002 and 2006 was the case for 16 of 18 industries. Export growth has been an important part of manufacturing's strong revenue and profit growth.

It is also quite evidently not the case that industries that have experienced the largest increases in imports have performed the poorest. As Table 1 indicates, industries that experienced faster growth in imports generally fared better with respect to the crucial indicators of health. Seven of the top 10 industries in terms of import growth ranked in the top 10 in terms of performance ("Average Rank"). Four of the five industries experiencing the fastest growth in imports were among the top five performing industries (in terms of "Average Rank"). The best performing industry experienced the largest growth in imports; the second best performing industry experienced the second largest growth in imports. At the other end of the spectrum, four of the five industries with the slowest growth in imports were among the five worst performing industries.

These findings sharply contradict the conventional wisdom that seems to be informing the antitrade posturing of an increasing number of policymakers. Revenues, profits, output, value added, and even compensation rose the most for industries most exposed to import competition, and they rose the least for those industries experiencing the smallest increases in imports.

As a reality check on those findings about trade and manufacturing performance, Table 2 presents some basic correlation statistics to ascertain information about the relationship between trade, employment, wages, and operating performance.³⁶ The correlation statistic does not speak to the question of causality, but it does provide information about the relationship between variables. The figures in Table 2 can be interpreted as the slope of the line that plots the two variables being measured. A figure of 1.000 indicates a perfect positive linear relationship, such that the variables move in the same direction and by the same percentage. A -1.000 indicates a perfect negative linear relationship, such that the variables move in

opposite direction by the same percentage.

What the data demonstrate is that for manufacturing as a whole, and for most industries, there is a stronger positive correlation between imports and exports, and between imports and revenues, and between imports and profits than there is a negative correlation between imports and employment, or between imports and wages.

- Out of 20 industries (including manufacturing overall), 15 demonstrated a stronger positive correlation between imports and exports than a negative correlation between imports and employment.
- Seventeen showed a stronger positive correlation between imports and exports than a negative correlation between imports and wages.
- Sixteen showed a stronger positive correlation between imports and revenues than a negative correlation between imports and wages.
- Thirteen industries even demonstrated a stronger correlation between imports and profits than between exports and profits.

Exposure to trade, as evidenced by the relationship between imports and exports and operating performance, has been an important component of the success of U.S. manufacturing industries.

On average, U.S. manufacturing is performing very well by historic standards. But that assessment does not characterize all U.S. manufacturing industries. Strong performance is eluding about one out of every three U.S. manufacturing industries (as defined at the 3-digit NAICS level). Within that third are a few industries that stand out as poor performers with respect to most of the performance-oriented metrics (revenues, profits, output, value-added) used to rank industries in Table 1. In particular, the paper industry (NAICS 322), apparel and leather products (315,316), printing (323), electrical equipment, appliance and component manufacturing (335), and transportation equipment manufacturing (336) have all experienced declines in three of the four performance-oriented metrics.

Table 2
Correlation Coefficients

NAICS	Imports and Exports	Imports and Employment	Imports and Wages	Imports and Profits	Imports and Revenues	Exports and Employment	Exports and Wages	Exports and Profits	Exports and Revenues
MFG	0.908	-0.583	-0.075	0.814	0.966	-0.294	-0.408	0.749	0.929
311	0.393	-0.517	-0.736	0.593	0.927	0.074	-0.642	0.481	0.456
312	-0.453	0.038	-0.598	-0.291	-0.311	0.132	0.166	0.012	0.520
313,314	0.748	-0.906	-0.690	0.367	-0.402	-0.473	-0.540	0.566	0.136
315,316	-0.230	-0.352	0.358	0.854	0.142	0.966	-0.814	-0.361	0.668
321	0.576	0.017	-0.206	0.905	0.938	0.134	-0.637	0.407	0.547
322	0.885	-0.703	-0.538	0.139	-0.559	-0.633	-0.743	0.161	-0.562
323	0.712	-0.582	-0.389	0.514	-0.375	-0.126	-0.671	0.106	-0.107
324	0.886	-0.440	-0.733	0.879	0.954	-0.445	-0.844	0.817	0.886
325	0.973	-0.703	-0.161	0.425	0.846	-0.637	-0.203	0.386	0.875
326	0.886	-0.807	0.059	0.651	0.888	-0.471	-0.265	0.676	0.942
327	0.218	-0.114	-0.277	0.822	0.911	0.619	-0.625	0.264	0.315
331	0.941	-0.457	-0.487	0.964	0.980	-0.362	-0.589	0.876	0.964
332	0.890	-0.247	-0.169	0.696	0.874	0.125	-0.418	0.662	0.800
333	0.948	-0.286	-0.706	0.871	0.861	-0.003	-0.797	0.878	0.930
334	0.556	-0.094	0.743	0.619	0.692	0.604	-0.035	-0.028	0.886
335	0.895	-0.646	-0.032	-0.240	0.139	-0.325	-0.201	-0.017	0.170
336	0.820	-0.175	0.103	-0.233	0.761	0.041	-0.306	-0.296	0.631
337	0.723	-0.860	-0.180	0.543	0.595	-0.426	-0.516	0.661	0.815
339	0.727	-0.651	0.401	0.344	0.816	-0.782	0.257	0.249	0.903

Source: Author's calculations.

With the exception of the transportation equipment industry (which can attribute much of its bad performance to faulty production and labor-relations decisions), what these industries have in common is that they are relatively low-technology, low-wage, and labor-intensive. The skills required of workers in these industries and the going wage rates are generally below average for manufacturing. In effect, those are the industries that U.S. manufacturing is outgrowing as resources are reallocated to enterprises higher up the manufacturing value chain. In 1998, these industries accounted for over 12 percent of manufacturing output; in 2005, they accounted for only 8 percent. These are the industries in which the United States will and should have difficulty competing with manufacturers in lower-wage, lower-skill countries. The object of trade policy should not be to interfere with that process, particularly since it encourages workers to improve their

skill sets and channels resources to where they can be used most efficiently.

Manufacturers' Own Words Confirm the Data

Although in stark contract to the picture of manufacturing decline presented by lobbyists and politicians in Washington, the findings presented above are not merely a competing thesis. They are the real story. And they are certainly not breaking news to the many manufacturing companies and industries whose tremendous success is reflected in those numbers. Even the most reputable and influential manufacturing trade associations have acknowledged that success and have distanced themselves from alarmist rhetoric about the manufacturing crisis.

At a congressional hearing on the topic of U.S.-China trade held earlier in 2007, Franklin

Despite all of the bluster about “saving” U.S. manufacturing, the truth is that the sector is in robust health.

Vargo of the National Association of Manufacturers gave testimony that should be required reading for all lawmakers who are considering supporting trade legislation on behalf of manufacturing.

It is not uncommon to hear that U.S. manufacturing is on its last legs, that we have been hollowed out and that our production base has moved overseas. A look at the factory shipments and industrial production data I have included as the last page of my testimony shows this is not true. Measured by historical standards and recent trends, U.S. manufacturing output is strong. This is not, of course, the case for all sectors. While some are doing very well, others are not. And within sectors some companies are doing well, while others are struggling to stay afloat.³⁷

Vargo’s testimony affirms many of the findings presented in the previous section. Other parts of his testimony seriously challenge the assertions of those who blame trade for the manufacturing sector’s woes.

Some commentators are fond of pointing out that the United States lost 3 million jobs in the “NAFTA-WTO decade.” The clear implication is that NAFTA and trade generally are the cause of the 3 million job loss. But that is untrue.

It is certainly true that between 2001 and 2003 nearly three million manufacturing jobs were lost—a huge number, close to one in every six jobs. The jobs have not come back since that time, with manufacturing employment trending down gradually since 2003. But since the U.S. manufactured goods deficit with NAFTA in 2001 was \$38 billion and the 2006 manufactured goods deficit with NAFTA was also about \$38 billion, how could the job loss have been caused by NAFTA?

Since there was no increase in the manufactured goods deficit with NAFTA, it is hard to see what kind of analysis would indicate NAFTA as the cause of our job loss.³⁸

Although some observers might infer (incorrectly) from Vargo’s testimony that blaming trade for those job losses would be justifiable had the NAFTA deficit increased in 2006, the real thrust of that portion of his testimony is in its refutation of Lawrence Mishel’s January 2007 testimony (cited above) that import growth was an important cause of the loss of those 3 million jobs.

According to statements and publications issued by manufacturing companies, industries, and their trade associations, manufacturers’ chief concerns about the future of manufacturing include the rising costs of health care, energy, taxation, and regulation. The past three consecutive “Labor Day Reports,” issued annually by the NAM, have identified these issues as primary concerns. In none of those issues was trade identified as something requiring the attention of policymakers.³⁹

Conclusion

The data presented above support three important conclusions: U.S. manufacturing is generally in superb health, and increasing international trade has a lot to do with that condition. Accordingly, lawmakers should back away from their hostile rhetoric about trade before they adopt policies that will damage the sector.

Despite all of the bluster about “saving” U.S. manufacturing, the truth is that the sector is in robust health. Record output, record sales, record profits, record returns on equity, and record compensation define the most recent year’s performance. Rather than being aberrational, one-time blips, those records are all the latest data points of a gradually ascending trend line that has been evident since the beginning of the sector’s recovery.

While some industries—mostly those that are more labor intensive and require lower-

skilled workers—have not been doing well in recent years, calls for interventionist trade policies are unjustified. Most of the five or six industries that are struggling are industries in which Americans have no comparative advantage. Measures to promote those industries would divert resources from the industries in which we are more competitive, discourage workers from acquiring new skills, and could inspire trade policy responses from abroad that would adversely affect our promising, competitive industries.

Instead of mischaracterizing the significance and meaning of the U.S. trade deficit and assuming that the loss of 3 million manufacturing jobs four years ago requires a tough response today, policymakers should try to attain a better understanding of the condition of U.S. manufacturing. They would learn that the sector is doing very well. And as Figure 6 and Tables 1 and 2 confirm, exposure to international trade has a lot to do with that performance. The evidence points to a U.S. manufacturing sector that is thriving in a global economy.

The evidence points to a U.S. manufacturing sector that is thriving in a global economy.

Appendix 1 Manufacturing Output and Value Added by Industry

		1998	1999	2000	2001	2002	2003	2004	2005	% Change 2002-05
Gross output (\$ Millions)										
Manufacturing	MFG	\$3,986,673	\$4,064,662	\$4,144,489	\$3,805,050	\$3,694,802	\$3,719,232	\$3,844,599	\$3,992,959	8.07%
Food and beverage and tobacco products		311,312	\$550,734	\$557,088	\$557,903	\$549,162	\$563,363	\$577,458	\$584,289	6.40%
Textile mills and textile product mills		313,314	\$91,387	\$84,491	\$74,385	\$71,612	\$67,995	\$65,249	\$60,821	-15.07%
Apparel and leather and allied products		315,316	\$74,960	\$66,370	\$55,197	\$44,369	\$36,971	\$32,006	\$31,766	-28.40%
Wood products		321	\$94,476	\$99,599	\$84,867	\$84,425	\$84,936	\$93,635	\$93,143	10.33%
Paper products		322	\$158,079	\$158,258	\$150,024	\$145,268	\$139,165	\$137,850	\$137,655	-5.24%
Printing and related support activities		323	\$103,008	\$103,684	\$97,750	\$91,338	\$86,311	\$84,675	\$79,466	-13.00%
Petroleum and coal products		324	\$139,574	\$162,161	\$230,354	\$203,922	\$228,211	\$281,688	\$352,638	72.93%
Chemical products		325	\$421,623	\$420,034	\$437,594	\$425,817	\$445,725	\$472,127	\$478,323	12.33%
Plastics and rubber products		326	\$167,650	\$173,161	\$174,616	\$163,591	\$163,948	\$163,358	\$171,104	5.19%
Nonmetallic mineral products		327	\$94,744	\$96,784	\$95,930	\$91,112	\$90,094	\$92,442	\$99,152	9.87%
Primary metals		331	\$172,074	\$158,895	\$154,955	\$132,729	\$126,975	\$160,793	\$171,645	29.08%
Fabricated metal products		332	\$259,198	\$258,635	\$263,911	\$242,709	\$225,774	\$231,106	\$240,275	3.14%
Machinery		333	\$278,852	\$272,490	\$281,596	\$247,264	\$231,878	\$237,240	\$254,916	10.72%
Computer and electronic products		334	\$443,426	\$464,225	\$500,763	\$408,954	\$337,707	\$330,215	\$338,173	0.14%
Electrical equip., appliances, and components		335	\$117,824	\$117,409	\$121,697	\$107,321	\$96,625	\$92,129	\$96,904	0.29%
Transportation Equipment		336	\$636,569	\$683,242	\$623,645	\$580,251	\$613,269	\$599,540	\$598,577	-0.55%
Furniture and related products		337	\$71,405	\$73,322	\$74,045	\$68,939	\$69,140	\$71,433	\$75,729	5.99%
Miscellaneous manufacturing		339	\$111,089	\$112,932	\$117,564	\$114,689	\$124,317	\$121,655	\$128,382	5.10%
Value added (\$ Millions)										
Manufacturing	MFG	\$1,392,952	\$1,403,024	\$1,426,218	\$1,309,867	\$1,298,206	\$1,277,455	\$1,311,157	\$1,341,540	3.34%
Food and beverage and tobacco products		311,312	\$142,564	\$156,912	\$163,209	\$165,923	\$157,825	\$142,703	\$155,816	-6.09%
Textile mills and textile product mills		313,314	\$28,118	\$27,016	\$22,180	\$21,065	\$21,715	\$21,412	\$21,151	0.41%
Apparel and leather and allied products		315,316	\$27,001	\$25,278	\$22,261	\$20,071	\$17,159	\$15,608	\$14,933	-25.60%
Wood products		321	\$30,431	\$32,626	\$31,437	\$29,197	\$30,169	\$34,960	\$34,556	18.36%
Paper products		322	\$54,060	\$55,330	\$55,594	\$47,798	\$48,286	\$48,208	\$48,392	0.22%
Printing and related support activities		323	\$48,207	\$49,233	\$49,009	\$45,769	\$42,524	\$42,429	\$41,631	-5.00%
Petroleum and coal products		324	\$31,763	\$22,887	\$26,248	\$32,593	\$36,790	\$49,164	\$56,289	123.46%
Chemical products		325	\$158,966	\$160,565	\$157,057	\$153,539	\$168,675	\$181,341	\$185,586	10.90%
Plastics and rubber products		326	\$65,927	\$67,540	\$66,728	\$61,919	\$62,897	\$61,287	\$60,020	-4.57%
Nonmetallic mineral products		327	\$43,874	\$46,086	\$45,743	\$43,810	\$42,416	\$45,242	\$47,288	7.25%
Primary metals		331	\$51,228	\$48,333	\$48,193	\$40,109	\$36,042	\$49,602	\$54,157	34.54%
Fabricated metal products		332	\$116,823	\$118,895	\$121,686	\$109,412	\$99,901	\$108,209	\$115,750	12.29%
Machinery		333	\$115,545	\$107,930	\$109,296	\$100,737	\$88,599	\$95,360	\$98,526	6.35%
Computer and electronic products		334	\$171,726	\$166,323	\$185,563	\$133,719	\$116,532	\$118,369	\$120,013	0.72%
Electrical equip., appliances, and components		335	\$46,370	\$49,246	\$50,580	\$48,040	\$46,822	\$41,773	\$42,417	-9.41%
Transportation Equipment		336	\$178,462	\$183,564	\$182,544	\$168,814	\$180,937	\$160,377	\$147,695	-18.37%
Furniture and related products		337	\$30,164	\$31,640	\$32,712	\$29,492	\$29,811	\$33,506	\$32,891	10.33%
Miscellaneous manufacturing		339	\$51,725	\$53,623	\$57,515	\$55,891	\$59,138	\$61,608	\$64,429	11.83%

Source: Bureau of Economic Analysis.

Appendix 2 Manufacturing Revenues and Profits by Industry

	NAICS	2001	2002	2003	2004	2005	2006	% Change 2002-06
Revenues (\$ Millions)								
Total Manufacturing	MFG	\$4,194,817	\$4,065,078	\$4,123,784	\$4,476,802	\$4,840,181	\$4,979,777	22.5%
Food Manufacturing	311	\$318,813	\$320,688	\$340,124	\$373,291	\$384,707	\$389,661	21.5%
Beverage and Tobacco Product Manufacturing	312	\$142,869	\$133,962	\$128,253	\$125,947	\$126,850	\$124,699	-6.9%
Textile Mills and Textile Product Mills	313,314	\$46,088	\$46,535	\$44,064	\$45,139	\$43,771	\$41,772	-10.2%
Apparel and Leather Products Manufacturing	315,316	\$90,214	\$85,400	\$77,957	\$83,296	\$79,430	\$74,607	-12.6%
Wood Product Manufacturing	321	\$59,032	\$60,123	\$58,677	\$68,386	\$70,560	\$67,829	12.8%
Paper Manufacturing	322	\$157,903	\$146,661	\$137,780	\$143,759	\$131,933	\$123,286	-15.9%
Printing and Related Support Activities	323	\$67,612	\$66,653	\$64,400	\$61,599	\$60,318	\$63,043	-5.4%
Petroleum and Coal Products Manufacturing	324	\$461,497	\$455,714	\$560,880	\$672,578	\$889,768	\$902,097	98.0%
Chemical Manufacturing	325	\$518,863	\$506,342	\$509,469	\$527,437	\$560,162	\$602,044	18.9%
Plastic and Rubber Products Manufacturing	326	\$123,838	\$117,305	\$116,401	\$129,745	\$142,985	\$146,791	25.1%
Nonmetallic Mineral Product Manufacturing	327	\$89,494	\$83,315	\$82,527	\$89,760	\$103,231	\$113,949	36.8%
Primary Metal Manufacturing	331	\$139,027	\$128,168	\$124,914	\$154,912	\$172,381	\$203,448	58.7%
Fabricated Metal Product Manufacturing	332	\$193,305	\$193,617	\$191,663	\$207,594	\$210,730	\$219,473	13.4%
Machinery Manufacturing	333	\$260,504	\$243,283	\$233,455	\$259,869	\$280,759	\$302,928	24.5%
Computer and Electronic Product Manufacturing	334	\$494,053	\$424,269	\$419,906	\$463,506	\$490,526	\$502,132	18.4%
Electrical Equip., Appliance, and Component Mfg.	335	\$175,943	\$175,047	\$171,017	\$177,544	\$174,358	\$172,148	-1.7%
Transportation Equipment Manufacturing	336	\$706,520	\$722,201	\$711,340	\$735,134	\$744,476	\$739,661	2.4%
Furniture and Related Product Manufacturing	337	\$56,762	\$54,016	\$50,705	\$53,980	\$61,414	\$72,098	33.5%
Miscellaneous Manufacturing	339	\$92,479	\$101,779	\$100,251	\$103,327	\$111,821	\$118,112	16.0%
Operating Profits (\$ Millions)								
Total Manufacturing	MFG	\$181,973	\$236,118	\$225,231	\$285,579	\$316,798	\$353,112	49.5%
Food Manufacturing	311	\$20,927	\$21,766	\$21,851	\$23,412	\$23,745	\$23,448	7.7%
Beverage and Tobacco Product Manufacturing	312	\$22,391	\$25,160	\$20,684	\$19,950	\$20,625	\$18,559	-26.2%
Textile Mills and Textile Product Mills	313,314	\$1,999	\$2,343	\$1,541	\$1,743	\$2,363	\$2,450	4.6%
Apparel and Leather Products Manufacturing	315,316	\$4,969	\$6,492	\$5,887	\$7,086	\$7,072	\$7,382	13.7%
Wood Product Manufacturing	321	\$1,838	\$2,482	\$3,145	\$5,739	\$4,865	\$4,253	71.3%
Paper Manufacturing	322	\$9,548	\$7,837	\$6,128	\$8,548	\$9,457	\$6,905	-11.9%
Printing and Related Support Activities	323	\$3,467	\$4,352	\$4,212	\$4,373	\$4,098	\$4,540	4.3%
Petroleum and Coal Products Manufacturing	324	\$32,805	\$12,163	\$24,523	\$40,702	\$60,775	\$67,184	42.4%
Chemical Manufacturing	325	\$43,555	\$51,554	\$50,835	\$43,170	\$51,492	\$66,340	28.7%
Plastic and Rubber Products Manufacturing	326	\$5,370	\$7,552	\$6,362	\$6,978	\$8,078	\$9,269	22.7%
Nonmetallic Mineral Product Manufacturing	327	\$6,615	\$5,999	\$5,761	\$7,306	\$10,261	\$11,728	95.5%
Primary Metal Manufacturing	331	\$1,683	\$2,737	\$844	\$12,596	\$15,266	\$20,993	666.9%
Fabricated Metal Product Manufacturing	332	\$12,005	\$12,875	\$12,921	\$16,550	\$17,970	\$20,803	61.6%
Machinery Manufacturing	333	\$12,665	\$11,687	\$11,812	\$17,973	\$20,629	\$26,059	123.0%
Computer and Electronic Product Manufacturing	334	-\$33,084	\$10,607	\$13,914	\$23,021	\$26,798	\$27,779	161.9%
Electrical Equip., Appliance, and Component Mfg.	335	\$17,054	\$17,594	\$12,155	\$11,492	\$12,231	\$14,189	-19.4%
Transportation Equipment Manufacturing	336	\$8,201	\$18,854	\$10,671	\$20,475	\$3,605	\$5,241	-72.2%
Furniture and Related Product Manufacturing	337	\$3,170	\$3,570	\$2,959	\$3,156	\$4,523	\$6,025	68.8%
Miscellaneous Manufacturing	339	\$6,796	\$10,492	\$9,025	\$11,308	\$12,944	\$9,963	-5.0%

Source: Bureau of the Census.

Appendix 3 Employment and Productivity by Industry

		1998	1999	2000	2001	2002	2003	2004	2005	% Change 2002-05
Full-time equivalent employees (1,000s)										
Manufacturing	MFG	17,225	17,045	16,947	16,190	15,056	14,306	14,117	14,044	-6.72%
Food and beverage and tobacco products	311,312	1,706	1,716	1,719	1,718	1,702	1,670	1,648	1,627	-4.41%
Textile mills and textile product mills	313,314	666	620	584	521	474	436	405	376	-20.68%
Apparel and leather and allied products	315,316	652	596	538	486	408	359	332	301	-26.23%
Wood products	321	597	618	606	576	566	544	556	564	-0.35%
Paper products	322	616	607	596	564	528	502	485	469	-11.17%
Printing and related support activities	323	774	775	767	764	705	675	663	644	-8.65%
Petroleum and coal products	324	129	126	120	118	116	114	109	109	-6.03%
Chemical products	325	966	967	968	946	913	891	872	862	-5.59%
Plastics and rubber products	326	938	935	942	880	835	806	793	791	-5.27%
Nonmetallic mineral products	327	531	535	545	535	511	492	495	496	-2.94%
Primary metals	331	625	609	611	560	498	467	458	459	-7.83%
Fabricated metal products	332	1,728	1,729	1,738	1,645	1,527	1,457	1,469	1,504	-1.51%
Machinery	333	1,479	1,433	1,420	1,348	1,209	1,136	1,125	1,148	-5.05%
Computer and electronic products	334	1,831	1,786	1,813	1,728	1,479	1,336	1,300	1,296	-12.37%
Electrical equipment, appliances, and components	335	565	552	568	548	491	455	440	429	-12.63%
Transportation Equipment	336	2,061	2,058	2,019	1,912	1,816	1,748	1,754	1,762	-2.97%
Furniture and related products	337	637	657	664	630	593	559	561	556	-6.24%
Miscellaneous manufacturing	339	725	727	728	711	685	662	650	651	-4.96%
Value Added per Worker										
Manufacturing	MFG	\$80,868	\$82,313	\$84,158	\$80,906	\$86,225	\$89,295	\$92,878	\$95,524	10.78%
Food and beverage and tobacco products	311,312	\$83,566	\$91,441	\$90,058	\$94,999	\$97,487	\$94,506	\$86,591	\$95,769	-1.76%
Textile mills and textile product mills	313,314	\$42,219	\$43,574	\$45,296	\$42,572	\$44,440	\$49,806	\$52,869	\$56,252	26.58%
Apparel and leather and allied products	315,316	\$41,412	\$42,413	\$46,565	\$45,805	\$49,195	\$47,797	\$47,013	\$49,611	0.85%
Wood products	321	\$50,973	\$52,792	\$51,876	\$53,088	\$51,584	\$55,459	\$62,877	\$61,270	18.78%
Paper products	322	\$87,759	\$91,153	\$93,279	\$84,748	\$91,451	\$94,183	\$99,397	\$103,181	12.83%
Printing and related support activities	323	\$62,283	\$63,526	\$63,897	\$59,907	\$62,162	\$62,998	\$63,996	\$64,645	3.99%
Petroleum and coal products	324	\$246,222	\$181,642	\$218,733	\$276,213	\$217,153	\$322,720	\$451,049	\$516,409	137.81%
Chemical products	325	\$164,561	\$166,045	\$162,249	\$162,303	\$183,293	\$189,309	\$207,960	\$215,297	17.46%
Plastics and rubber products	326	\$70,285	\$72,235	\$70,837	\$70,362	\$75,325	\$74,662	\$77,285	\$75,879	0.73%
Nonmetallic mineral products	327	\$82,624	\$86,141	\$83,932	\$81,887	\$86,286	\$86,211	\$91,398	\$95,338	10.49%
Primary metals	331	\$81,964	\$79,365	\$78,876	\$71,622	\$80,834	\$77,178	\$108,301	\$117,990	45.97%
Fabricated metal products	332	\$67,606	\$68,765	\$70,015	\$66,512	\$67,505	\$68,566	\$73,662	\$76,961	14.01%
Machinery	333	\$78,124	\$75,318	\$76,969	\$74,731	\$76,626	\$77,992	\$84,765	\$85,824	12.00%
Computer and electronic products	334	\$93,788	\$93,126	\$102,351	\$77,384	\$80,565	\$87,225	\$91,053	\$92,603	14.94%
Electrical equipment, appliances, and components	335	\$82,070	\$89,214	\$89,049	\$87,664	\$95,360	\$100,801	\$94,939	\$98,875	3.69%
Transportation Equipment	336	\$86,590	\$89,195	\$90,413	\$88,292	\$99,635	\$100,238	\$91,435	\$83,822	-15.87%
Furniture and related products	337	\$47,354	\$48,158	\$49,265	\$46,812	\$50,272	\$56,230	\$59,725	\$59,157	17.68%
Miscellaneous manufacturing	339	\$71,345	\$73,760	\$79,004	\$78,610	\$84,107	\$89,332	\$94,782	\$98,970	17.67%

Source: Bureau of Economic Analysis.

Appendix 4 Compensation in Manufacturing by Industry

	1998	1999	2000	2001	2002	2003	2004	2005	% Change 2002-05
Compensation (\$ Millions)									
All industries	\$43,678	\$44,875	\$46,407	\$46,409	\$47,248	\$48,249	\$48,888	\$49,196	4.12%
Manufacturing	\$49,665	\$51,206	\$54,219	\$52,887	\$55,734	\$58,372	\$58,385	\$58,907	5.69%
Food and beverage and tobacco products	\$39,434	\$39,701	\$41,510	\$41,562	\$44,338	\$43,224	\$43,817	\$45,074	1.66%
Textile mills and textile product mills	\$31,138	\$32,590	\$34,705	\$34,882	\$35,677	\$35,854	\$37,321	\$37,847	6.08%
Apparel and leather and allied products	\$28,514	\$28,613	\$30,227	\$29,700	\$31,319	\$35,635	\$36,708	\$38,561	23.12%
Wood products	\$35,254	\$35,435	\$36,587	\$36,193	\$36,408	\$37,339	\$38,291	\$38,669	6.21%
Paper products	\$52,189	\$53,357	\$54,680	\$55,447	\$59,734	\$67,121	\$63,829	\$64,344	7.72%
Printing and related support activities	\$44,283	\$44,675	\$46,027	\$43,709	\$44,549	\$45,869	\$46,555	\$47,764	7.22%
Petroleum and coal products	\$79,846	\$77,850	\$80,400	\$82,245	\$96,381	\$89,534	\$98,023	\$107,689	11.73%
Chemical products	\$69,913	\$71,408	\$74,479	\$73,916	\$82,165	\$84,368	\$87,244	\$88,638	7.88%
Plastics and rubber products	\$40,972	\$41,465	\$42,589	\$42,506	\$44,275	\$44,622	\$45,578	\$45,184	2.05%
Nonmetallic mineral products	\$44,114	\$45,446	\$47,317	\$46,859	\$47,860	\$48,530	\$49,031	\$49,904	4.27%
Primary metals	\$54,794	\$56,317	\$56,956	\$56,219	\$57,092	\$58,433	\$62,023	\$61,877	8.38%
Fabricated metal products	\$44,061	\$44,324	\$46,225	\$45,918	\$47,161	\$47,721	\$48,506	\$48,407	2.64%
Machinery	\$52,853	\$53,872	\$56,659	\$54,594	\$56,464	\$58,853	\$61,318	\$60,474	7.10%
Computer and electronic products	\$67,215	\$73,835	\$85,792	\$77,602	\$79,412	\$84,211	\$87,332	\$88,600	11.57%
Electrical equip., appliances, and components	\$48,499	\$51,624	\$53,931	\$50,983	\$53,973	\$57,617	\$59,480	\$62,226	15.29%
Transportation Equipment	\$62,479	\$64,087	\$65,573	\$65,260	\$73,694	\$82,079	\$71,425	\$71,100	-3.52%
Furniture and related products	\$33,513	\$34,097	\$35,825	\$35,500	\$36,335	\$42,275	\$45,897	\$43,884	20.78%
Miscellaneous manufacturing	\$44,934	\$46,454	\$48,503	\$48,984	\$50,749	\$52,516	\$53,916	\$53,614	5.65%
Wages and Salaries (\$ Millions)									
All industries	\$36,404	\$37,463	\$38,762	\$38,611	\$38,643	\$39,121	\$39,537	\$39,649	2.60%
Manufacturing	\$40,577	\$41,821	\$44,216	\$42,751	\$43,058	\$43,938	\$44,533	\$44,508	3.37%
Food and beverage and tobacco products	\$32,388	\$32,623	\$34,119	\$33,884	\$34,080	\$34,566	\$34,426	\$34,316	0.69%
Textile mills and textile product mills	\$26,049	\$27,237	\$29,019	\$28,839	\$29,414	\$29,307	\$30,017	\$29,827	1.40%
Apparel and leather and allied products	\$23,694	\$23,602	\$24,788	\$23,998	\$25,285	\$26,170	\$27,159	\$27,711	9.59%
Wood products	\$29,376	\$29,483	\$30,376	\$29,924	\$29,798	\$30,195	\$30,811	\$31,138	4.50%
Paper products	\$43,622	\$44,585	\$45,579	\$45,788	\$46,552	\$47,123	\$46,945	\$46,998	0.96%
Printing and related support activities	\$37,575	\$37,923	\$38,949	\$36,613	\$36,842	\$36,985	\$37,135	\$37,178	0.91%
Petroleum and coal products	\$63,068	\$60,869	\$62,550	\$63,376	\$63,327	\$64,556	\$69,410	\$73,268	15.70%
Chemical products	\$57,460	\$58,554	\$60,934	\$59,924	\$60,241	\$62,205	\$63,578	\$64,145	6.48%
Plastics and rubber products	\$34,076	\$34,464	\$35,359	\$34,959	\$35,734	\$36,104	\$36,507	\$35,867	0.37%
Nonmetallic mineral products	\$36,312	\$37,432	\$38,873	\$38,284	\$38,815	\$39,144	\$39,291	\$39,803	2.54%
Primary metals	\$44,243	\$45,462	\$45,764	\$44,717	\$44,727	\$45,540	\$47,254	\$46,742	4.51%
Fabricated metal products	\$36,138	\$36,262	\$37,692	\$37,283	\$37,574	\$37,916	\$38,343	\$38,151	1.53%
Machinery	\$44,151	\$44,787	\$46,865	\$44,944	\$45,236	\$46,007	\$47,145	\$47,029	3.96%
Computer and electronic products	\$55,536	\$61,147	\$71,378	\$63,981	\$63,678	\$66,416	\$68,181	\$69,141	8.58%
Electrical equip., appliances, and components	\$38,618	\$41,092	\$42,759	\$39,896	\$40,357	\$41,366	\$42,720	\$42,713	5.84%
Transportation Equipment	\$48,550	\$49,970	\$50,793	\$49,935	\$51,637	\$52,887	\$52,637	\$51,440	-0.38%
Furniture and related products	\$27,759	\$28,244	\$29,643	\$29,216	\$29,571	\$30,163	\$30,214	\$30,147	1.95%
Miscellaneous manufacturing	\$35,681	\$36,928	\$38,490	\$38,716	\$39,319	\$40,561	\$41,744	\$40,843	3.87%

Source: Bureau of Economic Analysis.

Notes

1. *Economic Report of the President* (Washington: Government Printing Office, 2007), Table B-46. Hereinafter ERP.
2. Ibid.
3. House Ways and Means Committee, "A New Trade Policy for America," March 27, 2004, <http://waysandmeans.house.gov/media/pdf/NewTradePolicy.pdf> (emphasis added).
4. Ibid.
5. Statement of The Honorable Pete Visclosky, Representative in Congress from the State of Indiana and Chairman of the Congressional Steel Caucus, Testimony Before the Subcommittee on Trade of the House Committee on Ways and Means, March 15, 2007 (emphasis in original), <http://waysandmeans.house.gov/hearings.asp?formmode=detail&hearing=537>.
6. Office of Sen. Debbie Stabenow, "Michigan Democrats Call for Comprehensive Initiative to Revitalize U.S. Manufacturing," press release May 17, 2007, <http://www.senate.gov/~stabenow/press/2007/051707MichiganDemocrats.htm>.
7. Office of Sen. Carl Levin, "The American Manufacturing Initiative," press release, May 25, 2007, <http://levin.senate.gov/newsroom/release.cfm?id=275203>.
8. Stabenow.
9. Bureau of Economic Analysis, Regional Economic Accounts, "Gross Domestic Product (GDP) by State, 2006," press release, June 7, 2007, http://www.bea.gov/newsreleases/regional/gdp_state/gsp_newsrelease.htm.
10. Statement of Duncan Hunter, Republican presidential candidate, Republican Candidates' Debate, Ronald Reagan Presidential Library, Simi Valley, California, May 3, 2007, <http://www.nytimes.com/2007/05/03/us/politics/04transcript.html?ex=1181707200&en=afe7246a8e5b8b2f&ei=5070>.
11. Statement of Dennis Kucinich, Democratic presidential candidate, Democratic Candidates' Debate, St. Anselm College, Manchester, New Hampshire, June 3, 2007, <http://kerryfoxlive.com/wordpress/?p=8849>.
12. *National Review Online*, <http://hillaryspot.nationalreview.com/>.
13. Statement of Lawrence Mishel, Ph.D., president, Economic Policy Institute, Testimony Before the House Committee on Ways and Means, January 30, 2007.
14. ERP, Table B-2.
15. Ibid.
16. ERP, Table B-36.
17. Compiled from ERP, Table B-42.
18. Numbers compiled from information found at www.thomas.loc.gov.
19. HR 294, http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:h294ih.txt.pdf.
20. HR 1002, http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:h1002ih.txt.pdf.
21. Unemployment data come from the Bureau of Labor Statistics; wage data come from ERP, Table B-47.
22. See, for example, Daniel Griswold, "A Package Deal: U.S. Manufacturing Imports and Output Rise and Fall Together," *Cato Institute Free Trade Bulletin* no.17, February 24, 2005.
23. Bureau of Economic Analysis, Survey of Current Business, Table F.1, U.S. International Transactions in Goods and Services, July 2007, vol. 87, no.7, http://www.bea.gov/scb/pdf/2007/07%20July/D-Pages/0707Dpg_F.pdf.
24. Patrick J. Buchanan, "Free Trade and Funny Math," *Human Events*, February 27, 2007.
25. UN Industrial Development Organization, "Share in Regional and World MVA," <http://www.unido.org/data/country/stats/>, cited in Edward Gresser, "Healthy Factories, Anxious Workers," *Progressive Policy Institute Policy Paper*, February 2007, http://www.ppionline.org/documents/Healthy_Factories_020907.pdf.
26. U.S. Bureau of the Census, "Quarterly Financial Report for Manufacturing, Mining, and Trading Corporation," 1Q 1995-4Q 1996.
27. Ibid.
28. ERP, Table B-93.
29. Michael E. Porter, *The Competitive Advantage of Nations*, 1st ed. (New York: Free Press, 1990).
30. U.S. Department of Commerce, *Manufacturing in America*, p. 17, http://www.commerce.gov/opa/press/Secretary_Evans/2004_Releases/Manufacturing%20Report/DOC_MFG_Report_Complete.pdf.

31. Ibid.

32. Bureau of Economic Analysis, Industry Economic Accounts, Gross-Domestic-Product-by-Industry Data (1998–2006), http://www.bea.gov/industry/xls/GDPbyInd_VA_NAICS_1998-2006.xls.

33. In some government statistical presentations, NAICS codes are consolidated and, consequently, there are fewer than 21 classifications.

34. In Table 1, data are presented for only 18 industry groups because six industries were consolidated into three industries (311 was merged with 312; 313 with 314, and; 315 with 316). This was necessary to ensure uniformity of reporting (i.e., so that each industry grouping would have data reported for each metric in Table 1).

35. Please consult the appendices to see the underlying data and to follow the analysis about trends.

36. The results are based on 24 quarterly observations (1Q 2001–4Q 2006) for each variable.

37. Testimony of Franklin Vargo, vice president, International Economic Affairs, National Association of Manufacturers before the Trade subcommittee of the House Ways and Means Committee, “U.S.-China Trade and Economic Relations,” February 15, 2007, p. 7.

38. Ibid.

39. National Association of Manufacturers, Labor Day Report 2004, 2005, 2006, http://www.nam.org/s_nam/bin.asp?CID=37&DID=235064&DOC=FILE.PDF.

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“Freeing the Farm: A Farm Bill for All Americans” by Sallie James and Daniel Griswold (no. 34; April 16, 2007)

“Leading the Way: How U.S. Trade Policy Can Overcome Doha’s Failings” by Daniel Ikenson (no. 33; June 19, 2006)

“Boxed In: Conflicts between U.S. Farm Policies and WTO Obligations” by Daniel A. Sumner (no. 32; December 5, 2005)

“Abuse of Discretion: Time to Fix the Administration of the U.S. Antidumping Law” by Daniel Ikenson (no. 31; October 6, 2005)

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