



**Testimony Of  
Dr. Paul Freedenberg  
Vice President – Government Relations  
On Behalf Of  
AMT – The Association For Manufacturing Technology  
Before The  
U.S. – China Economic and Security Review Commission  
June 23, 2005**

**Testimony Of**  
**Dr. Paul Freedenberg**  
**Vice President – Government Relations**  
**On Behalf Of**  
**AMT – The Association For Manufacturing Technology**  
**Before The**  
**U.S. – China Economic and Security Review Commission**  
**June 23, 2005**

---

I am testifying today on behalf of AMT - The Association For Manufacturing Technology, where I am the Vice President for Government Relations. AMT was founded in 1902 as the National Machine Tool Builders' Association and represents more than 350 manufacturing technology providers located throughout the United States, almost the entire universe of machine tool builders who operate here. Most of them would be classified as small businesses, with only a dozen or so having more than 500 employees. Today, I would like to talk about the state of the U.S. machine tool industry and how this affects our nation's defense industrial base.

First, we need to look at the machine tool industry in the United States and its role in defense activities. It would be misleading to look merely at the number of machine tools sold to the Defense Department by AMT companies, which was a mere \$67 million in 2003 (**Item 1**). A more significant number is the amount of machine tool consumption represented by companies participating in U.S. defense contracts, which accounts for approximately \$674 million in sales, approximately 14 percent of total machine tool sales. Those are the companies that could be considered part of the U.S. defense industrial base.

A bit of history would be useful. In 1986, after five years of steady loss of the domestic market by the U.S. machine tool industry, President Ronald Reagan took action to limit foreign machine tool importation into the United States, under the authority of the Trade Act of 1962, which authorizes the limitation of imports for national security purposes. President Reagan initiated negotiations with Japan and Taiwan, the two countries with the fastest growing machine tool sales in the United States, to limit the importation of their machine tools. He also informed Germany and Switzerland that their exports of machine tools into the U.S. would be monitored in order to ensure that those countries did not take advantage of Japan's and Taiwan's restraint. Justified by the threat to our national security that the loss of the machine tool industry would cause, five-year (subsequently extended to seven-year) voluntary restraint arrangements ("VRAs") were successfully negotiated with both Japan and Taiwan. Taiwan was frozen at its 1985 level. Japan was rolled back to its 1981 market share in six key categories of machine tools (**Item 2**). This action and the industry rebuilding that it enabled preserved the domestically produced machine tool market share at approximately 50 percent over the next decade.

The justification for negotiating these VRAs was that the potential loss of the domestic capacity to manufacture machine tools would endanger the U.S. Government's ability to mobilize in the event of a national emergency. Machine tools, which are the principal ways that we cut, shape, and form metal, are considered such a key factor in the production of weapons systems that this unprecedented trade action was felt to be justified by a free trade-oriented President.

At the time that this trade action was taken, our defense strategy contemplated the need for the United States armed forces to be able to fight two and one-half wars simultaneously. The

calculation behind the VRAs, based on a simple input-output model, was that without a substantial machine tool base, there would be insufficient surge capacity to respond to an emergency mobilization. During the 1982-1986 time period, the trend lines were definitely pointing to a loss of the core machine tool capacity necessary for an appropriate response.

Based on public testimony and published reports, it is my understanding the current defense planning no longer contemplates the need for fighting two and one-half wars simultaneously. Indeed, Defense Department officials have stated publicly that the current war-fighting scenario contemplates a “come as you are” war, with re-supply dependent on whatever happens to be in the U.S. defense industrial base at the time of the initiation of hostilities (“off the shelf”) with re-supply significantly aided by the manufacturing capacity of our allies. In other words, manufacturing capacity to build weapons systems in the event of an emergency would either come from existing capacity, or it would be imported into the United States, or, as an acceptable alternative, it would be made off-shore as needed. The current plan does not seem to anticipate the threat of disrupted supply lines, a concern that existed during the Reagan Administration and was an integral part of all previous administrations’ war planning.

During any possible conflict, the President has the authority to invoke the Defense Production Act (“DPA”), which gives him the authority to interrupt domestic consumer production and institute priority production for national security mobilization priorities. For example, in 1991 the DPA was invoked to divert machines from commercial production to defense production. However, as was demonstrated by the problems created when the Swiss manufacturer of a component of the Smart Bomb refused to ship to the Defense Department on a priority basis, the authority of the DPA ends at our nation’s borders.

Now I will turn to another issue—the state of the machine tool industry today. The simple answer to the question of “what is wrong with the machine tool industry today” that many of our members give is that, in too many cases, their customers have disappeared. When our member companies go to make their sales calls, they find their traditional customers either closed, moved to another country—most likely China—or else unwilling to make the new investment in sophisticated and productive equipment that is necessary to remain competitive in today’s manufacturing marketplace, because of the uncertainty concerning the future of manufacturing in the United States. Doing nothing is not a rational option. Investment in productive equipment is the only counter to the low labor costs offered by China. Yet the do nothing option is what too many companies are choosing today.

My industry, the machine tool industry, saw its domestic market shrink by almost 60 percent from 1998 to 2002. Last year it rebounded, with growth of 35 percent, but it remains 40 percent below its peak year of 1998 (**Item 3**). I would emphasize that not just our members’ sales but all sales of machine tools in the United States diminished, from a high of almost \$8 billion in 1998 to last year’s sales of a mere \$5 billion. That has meant, despite the desire of our membership to retain skilled workers, we have seen employment shrink 33 percent to 38,500 workers from a high of 61,500 workers during that same five-year period (**Item 4**).

To add to domestic woes, foreign penetration of the U.S. market has increased by 15 percentage points, to a level of 70 percent (**Item 2**), as a result of a diminished market abroad and fierce competition for one of the last remaining open machine tool markets in the world. Perhaps some saw it as inevitable, but I still find it surprising – and disheartening – to point out the fact that in 2002 China machine tool sales passed the United States in the process of becoming the largest consumer of machine tools in the world (**Item 5**). Last year, China’s machine tool consumption was almost 60 percent above that of the United States (**Item 6**). Just as disheartening is the fact that the machine tool consumption trend lines continue to head in opposite directions for

our two countries. Indeed, this is a troubling indicator of manufacturing's decline in the United States.

As the members of this Commission know, machine tools are a leading indicator of manufacturing activity. So it is logical that the trends that I have just recounted were mirrored in the activity of overall U.S. manufacturing, with its loss of millions of jobs and a foreign manufacturing penetration increase of approximately 12 percentage points over a similar period (from 40 percent in 1998 to approximately 52 percent in 2002). That fact should be equally troubling to members of this commission.

There are many critical challenges for the United States defense industrial base. First and foremost is the decreased size of the industrial sector. The Asian currency crisis of 1998 was the first blow. This was followed by a five-year period when the euro was 20 to 30 percent below its historic levels (for a similar basket of currencies). Foreign demand for U.S. machine tools was drawn away by the attractiveness of products priced in the weak euro and an aggressively cost-competitive Asian competitors, also armed with an under-priced currency.

Add to the above problems the fact that, second only to Japan, United States industry is among the highest taxed among industrialized countries. Indeed, a recent study issued jointly by the Manufacturers Alliance ("MAPI") and the National Association of Manufacturers ("NAM") found that U.S. industry operates under a 22 percent cost disadvantage as a result of its tax and regulatory burden (**Item 7**).

The largest and fastest growing machine tool market in the world is found in China, and U.S. machine tool builders are eager to compete for business there. Yet many barriers stand in their way. Let me briefly summarize those barriers.

First and foremost, export controls limit U.S. machine tool trade with China, particularly those affecting 5-axis machining, have negatively impacted the U.S. machine tool industry. The United States has had a strict regime of export controls since the end of the Second World War. With its one country veto system, CoCom limited all Western industrialized countries alike from trading with China (among others). But after 1994, when enforcement of the multilateral rules affecting export controls became a matter of "national discretion," U.S. vendors experienced a license denial rate from the U.S. Government of more than 50 percent, while their European counterparts saw their licenses for the same or similar products approved quickly and positively. As a result, the Chinese were denied almost none of the multiple-axis, precision machine tools that they desired, but U.S. vendors found themselves increasingly excluded from a lucrative market, which eventually became the largest machine tool market in the world. Not only did the license denials for controlled products hurt sales but those denials caused U.S. machine tool builders to develop a reputation for unreliability that carried over to lower technology, non-export controlled products as well.

In recent years, the Chinese have developed five-axis machine tools, which, after all, is a technology that is more than 40 years old. But they still depend on Western technology for most of their sophisticated applications, realizing that they are still unable to develop the precision and reliability needed for many advanced manufacturing applications. Right now they are able to produce large volumes of unsophisticated machines, but the expectation is that within five years the Chinese will be ready to compete in world markets.

Another problem which has plagued the machine tool industry's competitiveness in China has been the difficulty in obtaining business visas for prospective customers to visit plants to witness demonstrations of products, to attend trade shows, or to come the United States to witness machine tool run-offs and demonstrations that a machine is working well and ready to be shipped to the customer for his production line. Within a few months of 9/11, the business visa process

changed dramatically. Business visas which used to take a few weeks, began to take several months, if they could be obtained at all. We began to hear continuing reports from AMT member companies of long delays in processing applications for visas for business-related travel to the United States. There seemed to be a consistent pattern of four-month delays in visa processing for business travel. In some consular posts, this delay is exacerbated by additional delays in obtaining interviews to submit visa applications. Further, AMT reported increased denials of visa applications for their overseas customers (without explanation).

Part of the delay appeared to be related to new security procedures for reviewing visa applications for counter-terrorism purposes, but a far larger portion of the problem appeared to be related to reviewing visa applications for technology control purposes. These review procedures are not related to counter-terrorism or other border security reasons. The U.S. technology control procedures for visa application reviews were suddenly changed in late July 2002 and applied to all visa applicants. The impact is especially severe for business travel to the U.S. for China (and a number of other Asian countries).

I know that the long delays and increased denials for technology-control purposes caused substantial competitiveness problems for a number of U.S. industry sectors, but it was particularly acute for the machine tool industry. The inability to secure U.S. visas for overseas customers on a timely basis directly contributed to loss of sales, shifts of sourcing to foreign competitors, and reduced business opportunities for AMT member companies. Indeed, in company after company that I visited during a recent trip to China, the difficulty in obtaining a business visa was cited by managers as a potential reason for not buying our members' products.

I know that this year has seen a significant improvement in the business visa processing times, with increased personnel assigned to the task and new procedures, and that Secretary Rice has committed herself to continuing to improve the situation, but I cannot emphasize enough the deleterious effect that these business visa delays and denials have had on our U.S. machine tool competitiveness in what has become the largest market in the world.

Finally, I would like to discuss the most significant competitiveness problem of all and the one that has the greatest indirect effect on the U.S. defense industrial base. I am referring to the problem of currency valuation.

Last year, our nation's bilateral trade deficit with China exceeded \$162 billion, the largest bilateral trade deficit in the world. Based on the first four months of 2005, that deficit is headed for almost \$200 billion this year. It is a deficit and a trend that any economist will tell you is unsustainable. Yet it has continued to grow at this pace for the past decade. Indeed, China is accumulating foreign currency reserves, mostly U.S. dollars, at a rate of more than \$6 billion per month. This is an uneven trading arrangement, and it is directly related to a distortion in the value of the two nations' currencies.

It is obvious that China's economic strategy over the past decade has been to keep the value of its currency low, boosting its exports and holding down imports. While many have observed that this is a highly successful strategy, another way of looking at it is that this is a shrewd method of exporting unemployment. Chinese intervention, through massive purchases of U.S. dollars, has kept the Chinese yuan from appreciating despite large trade surpluses and investment inflows. Ernest H. Preeg, of the Manufacturers Alliance and the Hudson Institute, has estimated that the yuan is as much as 40 percent below the value that would be set by the marketplace. Other international economists have estimated as much as a 50 percent undervaluation. By Preeg's calculation, that undervaluation means that U.S. exports to China would be overpriced by as much as 40 percent and that Chinese goods in the U.S. would be under priced by that much. This is a critical factor in the huge U.S. trade deficit with China and in the relocation

of so many U.S. manufacturing enterprises, both large and small, to China, where those same companies can benefit from what is, in effect, a tremendous subsidy. When this subsidy is added to the very substantial differential in labor costs between our two nations, this subsidy makes Chinese products almost irresistible and makes investment in Chinese manufacturing extremely attractive.

It is indisputable that there is no free market for the yuan. Despite rapid economic growth, rapidly rising productivity, soaring exports, and huge foreign investment inflows – all factors that would normally cause a currency to appreciate – China has kept its currency pegged at approximately 8.25 yuan to the dollar since 1994. The Chinese central bank sets the exchange rate by requiring companies and individuals to turn over their foreign currency earnings at the rate set by the bank. As noted, the central bank, in turn, has made massive purchases of U.S. dollars, adding these to China's foreign currency reserve accounts. China's foreign currency reserves, almost entirely in dollars, now stand at more than \$500 billion. Those dollar holdings have tripled in five years, and the pace of accumulation has been increasing over the past year.

Let me repeat it again, the U.S. trade deficit with China was \$162 billion last year, the largest bilateral trade deficit in the world! And for those who will tell you that China trade is self-correcting, I would point out that United States imports from China have been growing at more than twice the rate of U.S. exports to China. Underlying all this is the currency imbalance. China's import tariffs currently average about 15 percent. If Preeg and his colleagues are correct and the currency is 40 percent undervalued, the effect of a free and open currency market would be more than twice as large as the effect of eliminating every tariff that China imposes on our goods.

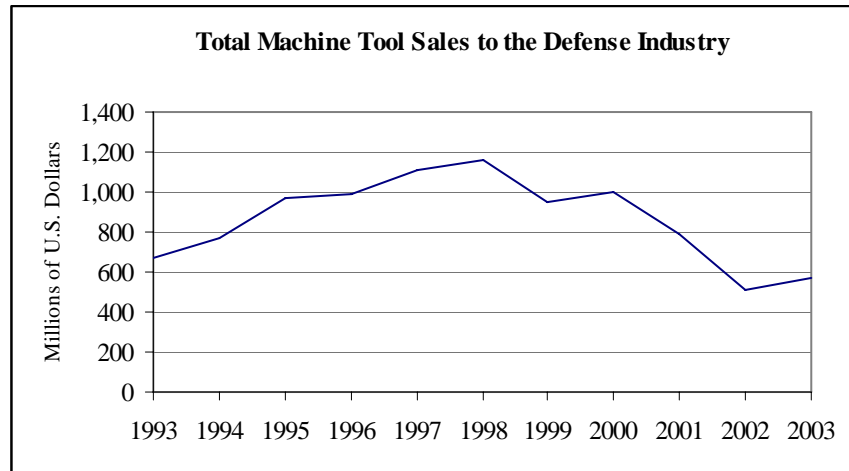
The global U.S. trade deficit last year was \$600 billion – up \$400 billion in the last five years and now nearly five percent of the United States' GDP. The major reason for the deficit during those five years is that the U.S. dollar has been significantly overvalued relative to foreign currencies. The dollar peaked in February 2002 at 30 percent above its normal level for the previous decade. Since then it has been returning to more normal levels against non-Asian currencies. Most of the adjustment has been against the euro. None could occur against the yuan, because it is pegged to the dollar at the artificial rate of 8.25 to one.

I began this testimony by answering the question of what is wrong with the U.S. machine tool industry with the reply that what is wrong is that many of their customers have closed shop, or moved to China. I think that I have given the major reasons why those events have taken place. But if one asks what can be done about that disturbing trend my answer would have to begin with the importance of dealing with the dollar-yuan valuation issue. Whether it is through Chinese central bank unilaterally re-pegging of the yuan, or through some form of a controlled float, the yuan must be revalued upwards. The Chinese Government legitimately worries that revaluation could very likely affect their banking system adversely. Nevertheless, postponing the inevitable appreciation of the yuan can only make Chinese banks even less stable when the event finally takes place, as it inevitably must. The current relationship of our two currencies is untenable, and the sooner steps are taken to rectify the situation, the better. The Chinese Government has acknowledged that there is a problem, but it is now asking for time to deal with the problem. We have been hearing this refrain for the past few years, and, as John Maynard Keynes observed, "In the long run, we shall all be dead." I fear that that is what is going to happen to many U.S. companies and the defense industrial base of which they are a part if we continue to delay and temporize on the currency issue.

**Testimony Of  
Dr. Paul Freedenberg  
Vice President – Government Relations  
On Behalf Of  
AMT – The Association For Manufacturing Technology  
Before The  
U.S. – China Economic and Security Review Commission  
June 23, 2005**

**Appendices: Items 1 through 7**

## Item 1: Machine Tool Sales to the Defense Industry



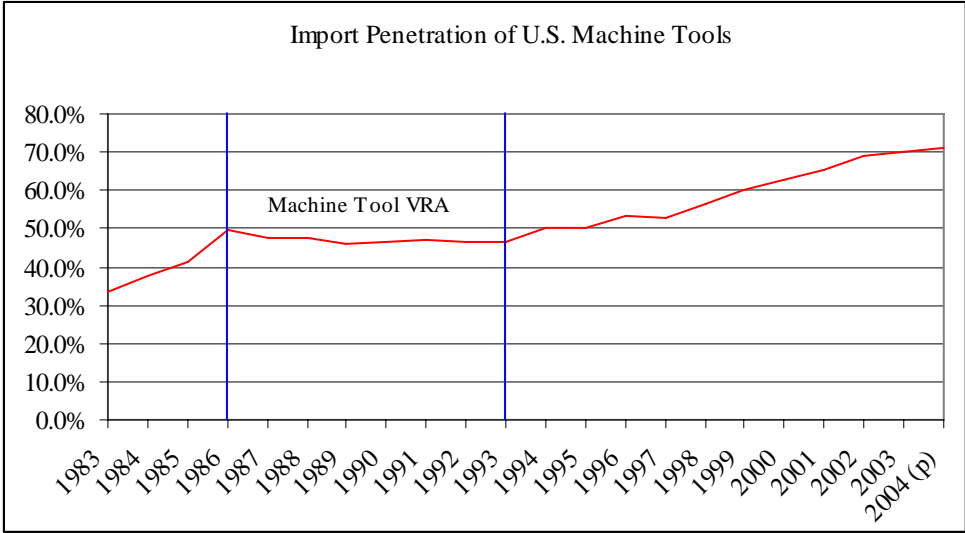
### Machine Tool Sales to the Defense Industry

In Millions of U.S. Dollars

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Direct Sales	\$60.4	\$36.5	\$29.9	\$21.1	\$38.1	\$37.6	\$35.8	\$49.0	\$54.5	\$44.8	\$66.9
Indirect Sales Estimate	609.2	732.3	940.4	969.4	1,074.9	1,119.3	913.3	948.6	732.3	469.7	499.0
Total Sales	669.6	768.8	970.3	990.5	1,113.0	1,156.9	949.1	997.6	786.8	514.5	565.9

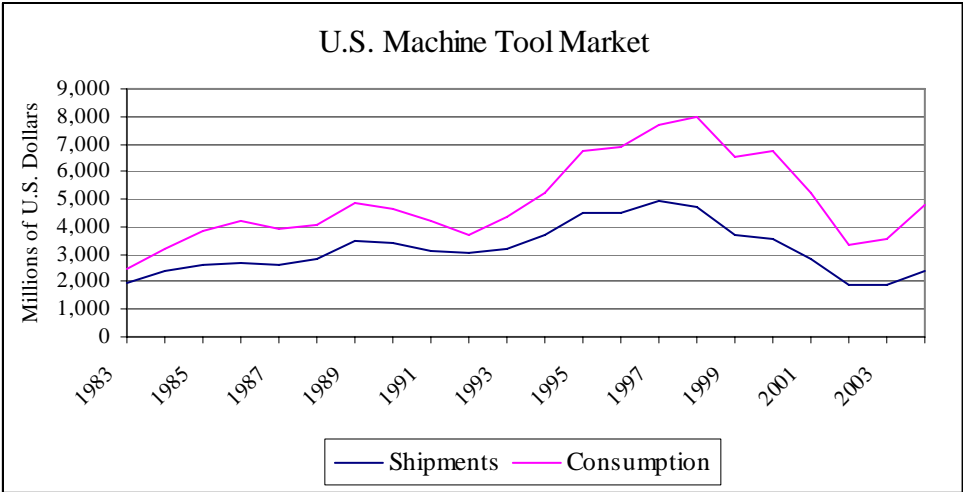
Source: Department of Defense, OASD, "Military Prime Contract Awards, by Service Category and Federal Supply Classification," and AMT.

**Item 2: Import Penetration of the U.S. Market**



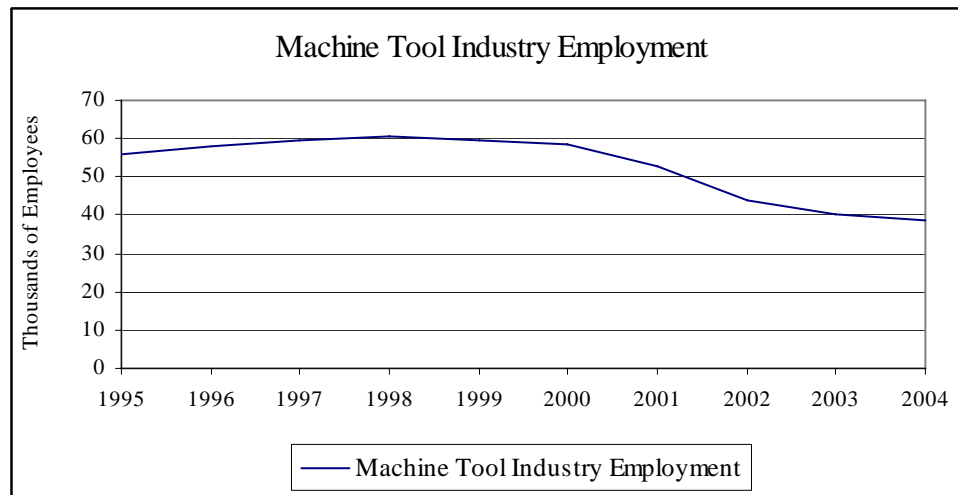
Source: U.S. Department of Commerce

**Item 3: The U.S. Machine Tool Market**



Source: U.S. Department Of Commerce

## Item 4: The U.S. Machine Tool Employment



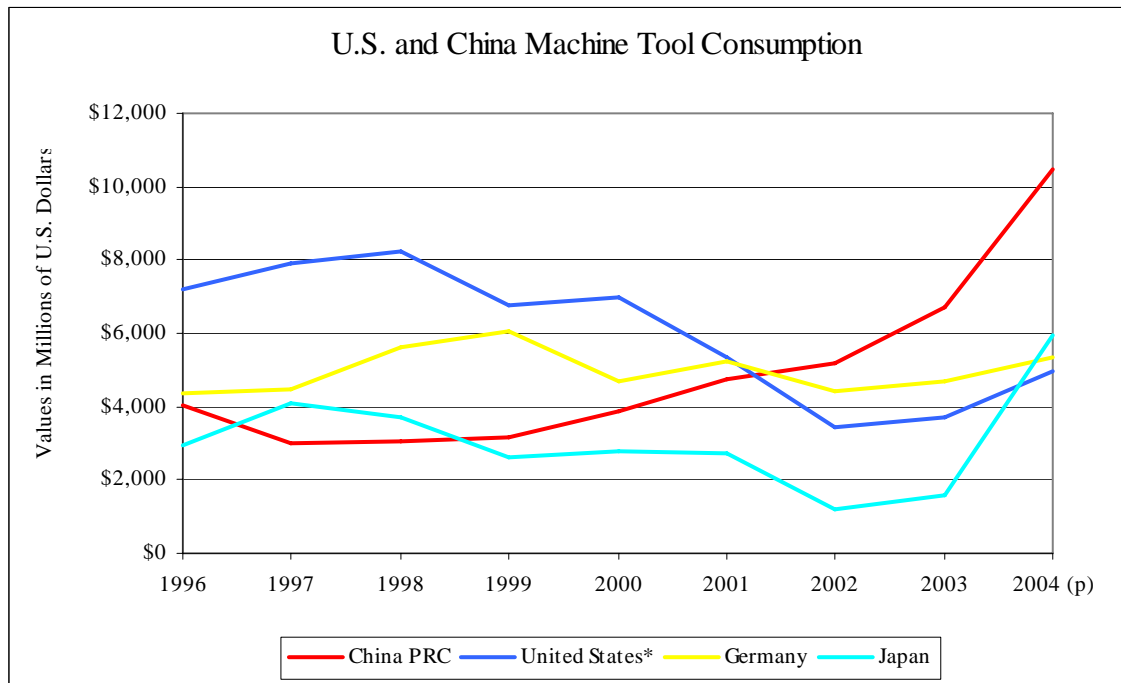
U.S. Machine Tool Employment Statistics

In Thousands of Employees

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Machine Tool Industry Employment	56.1	58.2	59.4	60.6	59.8	58.3	52.9	43.7	40.4	38.9

Source: Bureau of Labor Statistics

## Item 5: World Machine Tool Market Consumers



Source: U.S. Department of Commerce, AMT, *Metalworking Insiders' Report* and other international machine tool associations

In Millions of U.S. Dollars

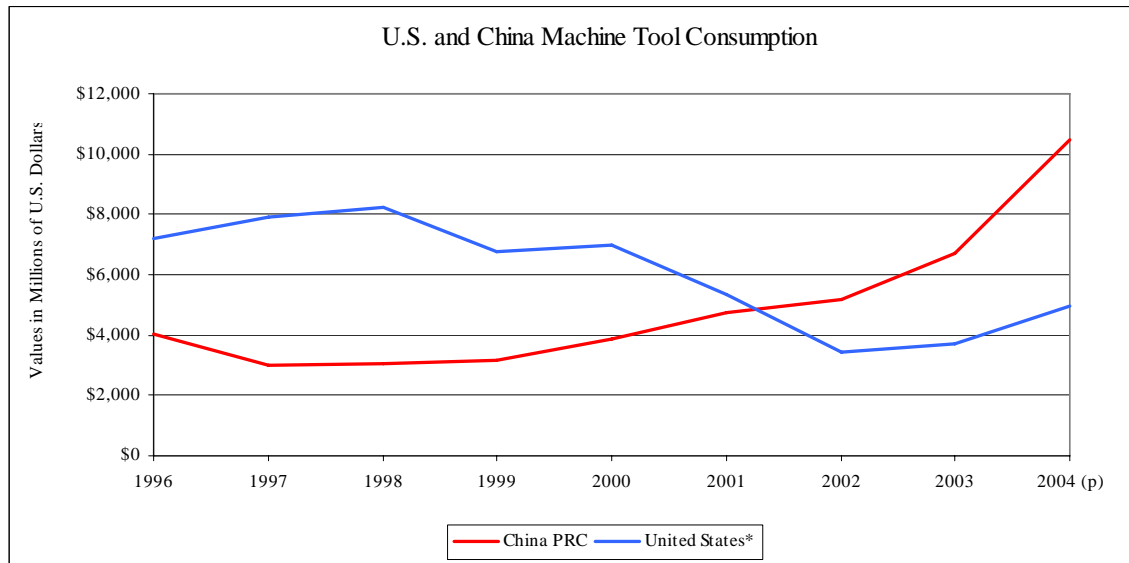
	1996	1997	1998	1999	2000	2001	2002	2003	2004 (p)
China PRC	\$4,010.4	\$3,003.1	\$3,048.7	\$3,144.1	\$3,850.3	\$4,738.9	\$5,187.0	\$6,731.8	\$10,475.6
United States*	7,187.1	7,916.5	8,209.5	6,743.1	6,971.0	5,347.9	3,463.2	3,684.6	4,965.2
Germany	4,351.7	4,482.4	5,602.4	6,054.4	4,665.5	5,237.4	4,438.5	4,671.6	5,353.4
Japan	2,963.7	4,067.3	3,695.6	2,637.9	2,794.3	2,729.8	1,214.6	1,600.5	5,923.8

Source: U.S. Department of Commerce, AMT, *Metalworking Insiders' Report* and other international machine tool associations

Notes: (p) – Preliminary

Laser data, from GTIS and other sources were added to US machine tool data (1996-2003) to create consumption figures that are comparable to other countries, which include lasers in their machine tool data.

## Item 6: Machine Tool Consumption in China and the United States



Source: U.S. Department of Commerce, AMT, Chinese Machine Tool Builders Association

### Machine Tool Consumption in the United States and China

	1996	1997	1998	1999	2000	2001	2002	2003	2004 (p)
China PRC	\$4,010.4	\$3,003.1	\$3,048.7	\$3,144.1	\$3,850.3	\$4,738.9	\$5,187.0	\$6,731.8	\$10,475.6
United States*	7,187.1	7,916.5	8,209.5	6,743.1	6,971.0	5,347.9	3,463.2	3,684.6	4,965.2

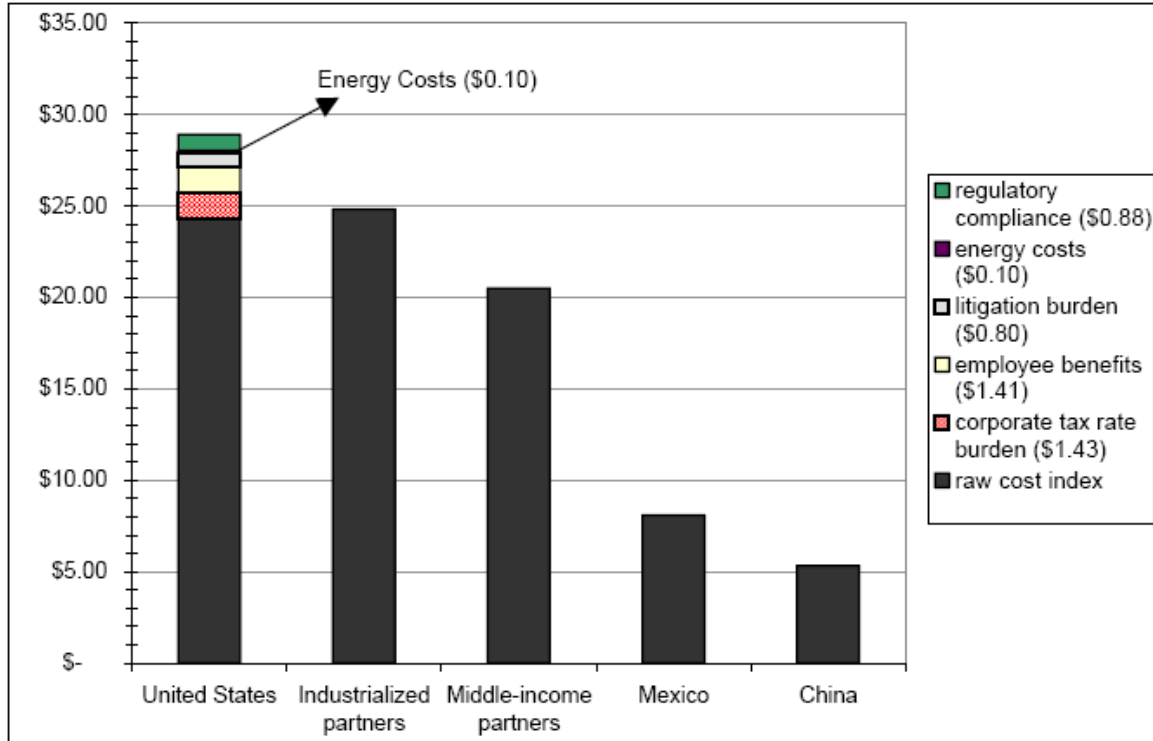
Source: U.S. Department of Commerce, AMT, Chinese Machine Tool Builders Association

Notes: (p) – Preliminary

Laser data, from GTIS and other sources were added to US machine tool data (1996-2003) to create consumption figures that are comparable to other countries, which include lasers in their machine tool data.

**Item 7: Excess Burden of “Overhead Costs” on U.S. Manufacturers Relative to Major Trade Partners, 2002**

In U.S. Dollars Per Hour Worked



Source: “How Structural Costs Imposed on U.S. Manufacturers Harm Workers and Threaten Competitiveness,” National Association of Manufacturers and Manufacturers Alliance (MAPI).

Source: U.S. Department of Commerce