



EXECUTIVE SUMMARY

# MANUFACTURING INSECURITY

## AMERICA'S MANUFACTURING CRISIS AND THE EROSION OF THE U.S. DEFENSE INDUSTRIAL BASE

Report Prepared

for

**Industrial Union Council, AFL-CIO**

by

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## I. Introduction

Even as America's armed forces were fighting wars in Afghanistan and Iraq during the Bush Administration's first term, the Pentagon embraced policies to globalize the American defense industrial base. Rather than relying on traditional U.S. defense suppliers, it looked overseas for sources of products, components, and materials for all but the most defense-critical technologies, claiming that this would lead to faster innovation while cutting costs. Defense industry executives echoed this position, arguing that the Department of Defense (DOD)—and its prime contractors—should not be restricted to domestic suppliers for its products.

Ironically, the Pentagon and industry calls for greater reliance on foreign sourcing—often argued in efforts to weaken Buy America requirements in defense procurement—are a tacit recognition that the United States lacks the commercial manufacturing capacity to supply vital products needed by America's defense industrial base. The DOD has conceded that there are advanced technologies critical to military systems—armor plate steel, defense-specific integrated circuits, night vision goggles—for which domestic sources are inadequate.<sup>i</sup>

However, a much larger number of items once supplied by U.S. manufacturers are now obtained from foreign suppliers—flat panel displays, machine tools, advanced electronics and information technologies—because they are not readily available from U.S. producers. According to Col. Michael Cole, of the U.S. Joint Forces Command, the problem is not just a matter of a handful of highly specialized items designed to meet narrow defense requirements, but the “eradication of U.S. industry capability.” He also warns that current strategies to deal with an industrial base that increasingly is unable to supply the military with manufactured parts and electronic components are not working.<sup>ii</sup>

The purpose of the study presented in this report, is to examine the extent this capability has been eroded, and the corresponding weakening of America's defense industrial base in the coming decades. In contrast to other assessments of the military's reliance on foreign sources that only focus on a small number of critical technologies or industries, this study seeks to evaluate the health and competitiveness of the nation's overall *civilian industrial base* upon which a strong defense industrial base—including the ability to produce specialized defense-critical products—ultimately rests. Specifically, drawing upon a large body of evidence from government and industry, the professional literature and other sources, the study:

- Analyzes key domestic and international economic trends—which taken together show that the foundations of U.S. manufacturing have been deteriorating across the board, especially over the past decade.
- Describes the linkages between manufacturing and the defense industrial base, and how erosion in a wide range of American manufacturing industries is hurting the domestic capacity to supply critical products for national security, forcing the Pentagon to depend on less secure foreign sources.
- Explores how a diminishing domestic manufacturing base contributes to a decline in American technological leadership and innovation capacity, widely recognized to be vital for maintaining U.S. defense capabilities.

### ***b. Indicators of Global Competitiveness***

U.S. manufacturing competitiveness has been declining in global markets, as indicated by America's growing trade deficits in goods, including advanced technology products, and foreign import penetration into U.S. markets.

- *The annual U.S. trade deficit in goods has grown steadily since 1979, and at an especially rapid rate since 1998, rising to record levels of over \$800 billion each year between 2006-2008—it was \$816 billion in 2008, nearly 6 percent of U.S. GDP. The United States imported more goods than it exported at a rate of \$2.2 billion a day. In real terms, the deficit in goods in 2008 was 18 times larger than it was in 1980. This includes chronic goods trade deficits with every major trading country and region in the world.*
- *Import penetration rate (IPR)—the share of the U.S. market held by imports—has been increasing for most manufacturing products and sectors. There has been an across-the-board, aggregate increase in IPRs for 114 high-tech and capital-intensive sectors evaluate of 61 percent—from 21.4 percent of domestic consumption to 34.3 percent—between 1997 and 2007. That is, imports grew from one-fifth to over one-third of the value of this diverse group of items consumed domestically in one decade.*

### ***c. The Eroding Base***

The secular downward trends for almost all the indicators, especially when the linkages between them are considered, show that U.S. manufacturing has been losing capacity for well over a decade.

- The erosion is apparent in the concurrent trends of weakening manufacturing value-added output, acceleration in manufacturing's steady decline as a share of U.S. GDP, stagnant and even negative growth—the first time in seven decades—in industrial capacity, and the substantial drop in capacity utilization since 2000—not to mention the long-term average yearly decline in utilization.
- The peak levels in both manufacturing capacity utilization and manufacturing employment during business cycle expansions have been in secular decline from the 1970s on.
- As industrial capacity stagnated and fell, manufacturing employment and establishment numbers declined sharply from a little before 2000 to the present.

Manufacturing's erosion is even more evident when the domestic economic trends are viewed in light of growing trade deficits and import penetration. Demand factors and productivity alone cannot explain the large losses in manufacturing jobs and establishments, over the past decade in particular. Empirical studies show that millions of U.S. jobs have been displaced or job gains foregone as a result of international trade, including losses associated with specific trade agreements (e.g., the North American Free Trade Act). Some studies tie the growing U.S. trade deficit with China, to the hug loss of U.S. jobs. A large share of these losses, are linked to consolidations and plant closures arising from foreign competition for domestic and global markets, and the offshoring of operations by large OEMs and their suppliers in almost every major manufacturing sector.<sup>iii</sup>

## Critical Industries

Well-known examples of defense critical technologies where domestic sourcing is endangered include propellant chemicals, space qualified electronics, power sources for space and military applications (batteries and photovoltaics), specialty metals, hard disk drives, and flat panel displays (LCDs). University of Texas at Austin engineering professor Michael Webber evaluated the economic health of sixteen industrial sectors “within the manufacturing support base” of the U.S. defense industrial system, “that have a direct bearing on innovation and production of novel mechanical products and systems,” and whose output “is used directly in the design process of other industries.” Of the sixteen industries he examined, thirteen showed significant signs of erosion, especially since 2001.<sup>vi</sup>

The HRS study examined a broader cross-section of the defense industrial base, to illustrate the full scope of the impacts of declining manufacturing capacity on the defense industrial base. They include several of Webber’s industries (semiconductors, printed circuit boards, machine tools), and one not in his group, which nevertheless is important to the nation’s innovation system (advanced materials). In addition, the study profiled the aerospace industry, the largest downstream systems integrator industry comprised of the large system-integrator firms that oversee the design, construction and assembly of major systems and weapons platforms used for the nation’s defense. While some segments appear relatively healthy and globally competitive, the overall prognosis is one of a serious weakening of a wide-range of key domestic manufacturing industries, which could seriously undermine their ability to support critical defense requirements, resulting in an ever-growing dependency on foreign sources of vital defense products.

These industries supply critical materials, components and parts used in defense systems or they are enablers and enhancers of innovation within industries important to national security, including aerospace. The movement of these industries overseas, which increases the dependence of the defense industrial base on offshore or foreign-owned components and equipment (e.g., semiconductors, PCBs, machine tools), can adversely impact national security in several ways:

- Companies that serve U.S. military requirements need a direct connection to technology advancements in their industry. This linkage is weakened if not severed if production and R&D for critical technology products are moved offshore, hurting the ability of remaining companies to supply future military needs.<sup>vii</sup>
- The U.S. may lack the manufacturing capacity to build weapon systems if access to state-of-the-art products produced offshore are limited if not cut off in times of emergency (including natural disasters) or war, when quick response and surge capacity are needed.<sup>viii</sup> As, Dr. Paul Freedenberg, Vice President of the Association for Manufacturing Technology, observed, DOD’s warfighting 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.”<sup>ix</sup>
- Dependency on foreign sources of some products, such as microelectronics and PCBs, increases the possibility that “Trojan horses” and other unauthorized design inclusions, such as viruses and worms, or hard-to-defect defects placed by overseas companies seeking to sabotage U.S. defense systems.<sup>x</sup>

## Printed Circuit Boards

As the underpinning of nearly all electronics systems, printed circuit boards (PCBs) are critical technologies for numerous military applications. The PCB industry, including its two main divisions, *printed circuit assembly* (NAICS 334412) and *bare printed circuit board manufacturing* (NAICS 334418), have experienced significant losses in its domestic production capacity and position in global PCB markets over the last decade.

- The U.S. PCB industry has shrunk an estimated 74 percent since 2000.<sup>xviii</sup> The number of U.S. PCB manufacturers fell from 400 in 2004, only 20 of which made military boards, to 300 by 2009. The industry's revenues fell dramatically, from \$11 billion to \$4 billion between 2000-2008.<sup>xix</sup>
- The U.S. PCB industry once dominated global PCB production, with 42 percent of global revenues in 1984, falling to 30 percent in 1998 and to less than 8 percent in 2008.
- By 2005, between forty and fifty percent of North America's PCB orders had migrated offshore.<sup>xx</sup> Between 1997- 2007, the PCB industry's import penetration rate increased from 24 percent to 35 percent, and the PCB assembly import rate rose from 37 percent to 47 percent.<sup>xxi</sup>
- Parts and materials suppliers to the PCB industry—including suppliers of laminates, drill bits, imaging materials, specialty chemicals, film and capital equipment—have also largely disappeared from the United States.<sup>xxii</sup>

While the U.S. PCB industry eroded, the PCB industries in America's major trade competitors grew, with China the chief beneficiary. By 2003, while Japan's top ten PCB producers dominated with 29 percent of the global market share, the United States had fallen behind China. By 2007, China/Hong Kong had moved to the top position, accounting for 28 percent of worldwide PCB production.

Today, high-volume, low-cost, commercial PCB suppliers of components used in commercial durable goods (automobiles, appliances, heavy equipment) can provide few defense-specific components that meet sophisticated DOD requirements.<sup>xxiii</sup> Analysts in the defense electronics community are even skeptical that the DOD's "trusted" approach to preserve U.S. PCB supplies will be sufficient. They view it as a stop-gap—like "putting a Band-Aid on a bullet hole."<sup>xxiv</sup>

## Machine Tools

Machine tools are the principal devices used to cut and form metal, employed in nearly all manufacturing involving metals, from autos to airplanes to ball bearings. They are among the most critical industries in the defense industrial support base, because of their importance in producing weapons systems and other products the military relies on. By most measures, the U.S. machine tool industry—including its two main divisions, metal-cutting machine tool (NAICS 333512) and metal-forming machine tools (333514) manufacturing—has been in a steep decline for over a decade.

- Between 2001-2008, the metal cutting machine tool industry shed 16 percent of its establishments and 22.4 percent of its workforce (over 8 thousand jobs), and the metal forming machine tool industry lost 17 percent of its establishments and 14 percent of its workforce (2,200 jobs); another 5,000 jobs, and 2,700 jobs, respectively, were lost in the first 6 months of 2009 alone.<sup>xxv</sup>

Products (ATP) trade data, as foreign competitors make inroads into U.S. markets. The NRC found that:

- *Domestic materials production is disappearing and moving offshore.* Materials subsectors have consolidated significantly since 2000, driven by financial difficulties and foreign competition. Plant capacity and employment both have declined, and production of critical materials, such as specialty steels, advanced ceramics, and magnesium, has been moving offshore.
- *Materials R&D and innovation is following production offshore.* The migration of materials producers and users has harmed domestic advanced materials R&D by inducing many U.S. companies to shift materials R&D overseas. The offshore movement of manufacturing is weakening U.S. R&D capabilities in several materials technologies vital to national security, including night vision systems, lanthanides (rare earth elements), and specialty metals.
- *The margin of U.S. leadership in advanced materials R&D is eroding and increasingly challenged by other nations.* The largest U.S. advanced materials trade deficit is with Japan, whose imports into the United States grew steadily over the decade, more than doubling between 2002-2008 (\$417 million to \$948 million). Until 2008, China's exports outpaced imports, reflecting its increasing appetite for advanced materials products that it currently lacks sufficient internal capacity to meet. However, China is aggressively seeking to develop its own technological and production capabilities in this area.<sup>xxxv</sup>

## Aerospace

Aerospace (NAICS 33641) is a core industrial sector fundamental to America's economic and national security. It is a major source of high-skilled, high-wage jobs in the U.S. economy, employing around 500,000 workers, or about 4 percent of the manufacturing workforce. Its primary divisions include aircraft, engines and parts, guided missiles, and space vehicles. The largest segment, the aircraft, engines and parts industries (NAICS 336411-13), depends on both commercial sales (commercial jets, regional jets, general aviation), largely tied to the health of the airline industry and the demand for air travel, and sales (military aircraft) to U.S. and foreign governments.

The end of the Cold War led to a massive downsizing, consolidation, and restructuring of the aerospace and defense industries. The number of primary aerospace firms fell from 75 over twenty years ago to only a handful of remaining prime contractors, today—Lockheed Martin, Boeing, Raytheon, Northrop Grumman, and General Dynamics—serving the federal national security and space agencies. These are major multinational corporations with interests transcending the domestic industrial base, and increasingly reliant on foreign sales. Their drive to lower costs in the face of increasingly fierce foreign competition, including offsets and other foreign trade practices, has led them to offshore large portions of their own production operations, and to rely on an increasingly global supplier base.

Since the early 1990s restructuring, aerospace sales to both commercial and military customers fluctuated widely, sometimes counter-cyclically, which has kept the industry relatively strong. After another dip in the early 2000s, due partly to both the 9-11 attack and the recession, the industry saw a market upturn in the latter half of the decade; though its sales—\$204.2 billion in 2008—as a share of GDP were down from 2000 and the 1990s. Aerospace has also been one of

## IV. Eroding Technology Leadership

A concern of industry leaders and policymakers is how the erosion and migration of domestic manufacturing is weakening the America's R&D and innovation capacity and undermining its global technological leadership. The design, development and production of both commercial and defense-specific technologies and products are tightly linked. As Michael Webber warned, if the U.S. manufacturing base "that props up the entire national innovation system continues to deteriorate in the United States, but grows and thrives overseas, then large numbers of America's most innovative companies might be inclined to move overseas to be closer to production and the necessary support base. . . . Significant deterioration of companies that design and make discrete components is triggering a fundamental hollowing out of the national innovation system."<sup>xxxix</sup>

### a. Offshoring innovation

Defense procurement policy promotes civilian-military integration and the purchase of commercial-off-the-shelf (COTS) products, to cut costs and increase access to the most advanced commercial technologies. This also has made it easier for defense contractors to go overseas to purchase needed items. However, a firm's ability to design, innovate and improve on critical technologies produced for defense markets depends on its ability to draw upon the technology edge obtained in its commercial business. But, as the commercial supplier base that the Pentagon relies on for these products globalizes, this technology transfer from commercial to defense-critical products, has become more difficult to achieve. Hence, the HRS study found the following trends associated with erosion of domestic manufacturing capacity across the range of industries it reviewed:

- Weakening innovation capabilities of domestic industrial suppliers.
- The transfer of cutting-edge technologies and know-how to economic rivals and potential military adversaries.
- A decline in America's technological leadership in the world, especially in areas critical to national security.

***Laboratories of production.*** The close link between manufacturing and innovation is apparent in each of the profiled industries. As Dr. Jack W. Schilling, Chairman of the Specialty Steel Industry of North America testified, "[o]ur plants in the specialty metal industry are our laboratories."<sup>xl</sup> Experts note that because of the link between manufacturing and technology development, manufacturing's migration contributes to the erosion of U.S. innovation and R&D capacity itself. For example, a Defense Advisory Group on Electronic Devices (AGED) report warned about the impact of the "off-shore movement of intellectual capital and industrial capability, particularly in microelectronics" on "the ability of the U.S. to research and produce the best the technologies and products for the nation and the warfighter."<sup>xli</sup>

***Semiconductor R&D.*** As semiconductor production has moved offshore to places such as Taiwan and China, research activities have followed in many instances. The DOD's Defense Science Board (DSB) has noted that maintaining U.S. leadership in semiconductors requires preserving the "close coupling of manufacturing with the development of advanced technology and the design of leading-edge integrated circuits," which is best achieved "if development and

Korea to build up their own aerospace manufacturing and R&D capacity.

- NRC's study of materials R&D globalization identified several subfields—including composites, ceramics, electronics and opto-photonics materials, catalysis, and magnetic materials—where U.S. firms are moving R&D and customer support functions overseas close to the new manufacturing bases they have created.<sup>xlviii</sup>

While Taiwan is a principal location for contract design outfits, China and India are leading sites for foreign direct investment (FDI) by multinational corporations (MNCs) for establishing R&D centers. A Cambridge University study shows that emerging economies like India and China are favored destinations for global R&D with top MNCs, such as GM, IBM, Cisco, Motorola and GE.<sup>xlix</sup> The numbers and quality of U.S. investments in R&D centers in these countries have accelerated over the past decade. A major attraction is their abundant pool of highly-educated engineers and high-tech workers capable of increasingly sophisticated high-tech work, while working for wages far below U.S. or European levels

China, in particular, has benefited from foreign corporate investment in R&D and technology transfer. The USCC's 2010 report noted that FDI in China had grown from a mere trickle of a few billion dollars in the 1980s to more than \$80 billion annually by 2008; it bypassed the United States as the destination for the largest amount of FDI in the world in 2003.<sup>1</sup> Through the different arrangements China has forged with foreign corporations, from offsets to joint ventures and R&D centers, its ultimate goal is to greatly enhance its own internal capacity for producing globally competitive, world-class technologies and products. Thus, the migration of U.S. R&D capacity is boosting the technological capabilities critical to improving the military industrial prowess of a nation that the Pentagon worries could become a formidable military opponent.<sup>li</sup>

*New world leaders?* Although the offshore migration of American R&D resources may provide short-run competitive advantages to U.S. companies, America's overall technological leadership in the world has weakened, which translates into an erosion of U.S. leadership in technology areas critical to national security. Several studies indicate that although the United States remains a world leader, if not always *the* world leader, in technology competitiveness and innovation, its leadership has slipped over the past decade, not only relative to its traditional trading partners—Europe, Japan—but to major emerging economies, most notably China and India, but also other Asian nations, such as Korea, Singapore, Taiwan, and Malaysia.

The U.S. ability to assert or maintain leadership in emerging technologies also is jeopardized, such as in advanced materials R&D and semiconductors. For example, Intel's "teraflop research chip" and 45-nanometer technology was developed in Intel-funded labs in India, indicating a transfer of advanced microprocessor design capacity. Nanotechnology is another emerging technology area where the United States has been losing ground.

## **b. Offshoring Critical Skills and Know-How**

As the United States loses its technological edge through movements of R&D offshore, underinvestment in R&D by U.S. industry and lack of attention by the U.S. government—with the shedding of millions of skilled workers as a result—the know-how needed for maintaining and advancing U.S. technology leadership vital for national security embodied in those displaced workers, is being lost as well. The dramatic loss of manufacturing jobs since 1998 afflicting



- i "Assessment Of Industrial Base Assessments: There Is Little To Worry About, Or Is There?" *Manufacturing & Technology News (M&TN)*, Vol. 12, No. 6 (March 22, 2005), 3-4. See also Department of Defense (DOD), *Annual Industrial Capabilities Report to Congress*, (Washington, DC: February 2005); —, *Foreign Sources of Supply: Assessment of the United States Defense Industrial Base* (Washington, DC, November 2004). These and other defense industrial base capabilities studies are available on the Internet, <http://www.acq.osd.mil/ip>.
- ii "U.S. Military Warned Again About Loss of U.S. Industry," *Manufacturing & Technology News*, Vol. 17, No. 2 (January 26, 2010), 1,6
- iii Robert E. Scott, "Costly Trade With China: Millions of U.S. jobs displaced with net job loss in every state," *EPI Briefing Paper #188* (Washington, DC: Economic Policy Institute, May 1, 2007), online: [http://www.epi.org/authors/bio/scott\\_robert\\_e/](http://www.epi.org/authors/bio/scott_robert_e/).
- iv *The Defense Production Act of 1950, As Amended* (50 U.S.C. App. § 2061 *et seq.*) Current through P.L. 107-47, enacted October 5, 2001 (Washington, D.C., April 2002).
- v Committee on Defense Manufacturing in 2010 and Beyond, Board on Manufacturing and Engineering Design, Commission on Engineering and Technical Systems, National Research Council (NRC), *Defense Manufacturing in 2010 and Beyond, Meeting the Changing Needs of National Defense*, (Washington, DC: National Academy Press, 1999), 11.
- vi Michael Webber, "Erosion of the Defense Industrial Support Base." In Richard McCormack (ed.) (Washington, DC: The Alliance for American Manufacturing, 2009), 245-280. Webber employed three indicators to evaluate whether an industry appeared to be eroding between 1998-2008: employment, economic activity (contributions to GDP by shipments) and the number of establishments.
- vii NRC, *Linkages*; "Printed Circuit Boards to Become Part of DOD's Trusted Production Program," *Manufacturing & Technology News*, Vol. 15, No. 5 (March 14, 2008).
- viii *Ibid.*, 9-10.
- ix Paul Freedenberg, "Testimony of Dr. Freedenberg, Vice President-Government Relations On Behalf of the AMT-The Association for Manufacturing Technology, before the U.S. China Economic and Security Review Commission," Washington, DC, June 23, 2005.
- x "Defense Department Hires Science Academy To Assess Vulnerability of U.S. Circuit Board Industry," *Manufacturing & Technology News*, vol. 12, No. 3 (February 9, 2005), 1ff.
- xi Aerospace Industries Association (AIA), "AIA White Paper on the Industrial Base Provisions (Title VIII, Subtitle B) in the House of Representatives version of the FY 2004 National Defense Authorization Act H.R. 1588," (Washington, D.C., July 7, 2003).
- xii U.S.-China Economic and Security Review Commission (USCC), *2005 Annual Report to Congress*, (Washington, DC, November 2005), 97.
- xiii Including the National Security Agency, the Pentagon's Advisory Group on Electron Devices (AGED), the Semiconductor Industry Association, National Academies of Science's National Research Council, the U.S.-China Economic and Security Commission, and U.S. Senator Joseph I. Lieberman (I-CT).
- xiv Webber, "Erosion," 269. He reports that employment in this industry dropped more than one-third, from 310,000 in 2001 to 200,000 in August 2008, which is below the levels at the end of the 1991 recession. GDP dropped from approximately \$76 billion in 2000 to \$49 billion in 2001 and then rose up to \$60 billion in 2005. The number of establishments (all sizes) fell from 1,640 in 2001 to 1546 in 2004, rose to 1,683 in 2006, before falling back to 1,564 in 2008. Establishment numbers are from *Bureau of Labor Statistics, Quarterly Census of Employment and Wages* (QCEW).
- xv See Alan Tonelson and Sarah Linden, "Import Growth Depressing U.S. Industrial Output, Advanced U.S. Manufactures Keep Losing Ground in Home Market," *USBIC Import Penetration Survey 2010*, (Washington, DC: U.S. Business and Industry Council, 2010); Alan Tonelson and Peter Kim, "Imports Seizing U.S. Market Share Throughout Manufacturing Sector; "High-tech" sectors just as vulnerable as "low-tech." USBIC Research Alert (Washington, DC: U.S. Business Industry Council, December 4, 2006).
- xvi William J. Spencer, "New Challenges for U.S. Semiconductor Industry," *Issues in Science and Technology* (Winter 2004), 79-86:84.
- xvii "CHINA NEEDS TO BOOST SEMICONDUCTOR PROD'N TO MEET DEMAND: IXIS." *AsiaPulse News*. 2006. *HighBeam Research*. (July 2, 2010). <http://www.highbeam.com/doc/1G1-152596852.html>
- xviii "A conversation with ... Michele Nash-Hoff: author, can American manufacturing be saved: why we should and how we can." *Products Finishing*. 2010. *HighBeam Research*. (July 3, 2010). <http://www.highbeam.com/doc/1G1-218592026.html>
- xix "America's Oldest Printed Circuit Board Company Closes Its Doors," *Manufacturing & Technology News*, Vol. 16, No. 13 (July 28, 2009).
- xx Roy Sakelson, "America's dynamic duo: two American printed circuit makers—Electropac and Hallmark—are on opposite

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- <sup>xlvii</sup> Committee on Prospering in the Global Economy of the 21st Century: An Agenda for American Science and Technology, National Academy of Sciences (NAS), National Academy of Engineering, Institute of Medicine, *Rising Above the Gathering Storm* (National Academies Press, Washington, DC: October 2005); 2. Cited in USCC, *2005 Annual Report*, 94.
- <sup>xlviii</sup> NRC, *Globalization of Materials R&D*.
- <sup>xlix</sup> “India, China top destinations for MNCs R&D: Cambridge Research.” *PTI - The Press Trust of India Ltd* (March 12, 2009). *HighBeam Research*. (July 3, 2010). <http://www.highbeam.com/doc/1G1-195470724.html>
- <sup>1</sup> U.S.-China Economic and Security Review Commission (USCC), *2009 Report to Congress* (Washington, DC: USCC, November 2009), 58. Over the first half of 2009, largely because of the worldwide recession, China FDI fell by nearly one-fifth, though it retained its lead among the main destinations of FDI.
- <sup>ii</sup> U.S. Department of Commerce, Bureau of Industry and Security (BIS), “US Technology Transfers to the People’s Republic of China” (1999), 51-52.  
[www.bis.doc.gov/defenseindustrialbaseprograms/osies/DefMarketResearchRpts/ChinaGuides/China1.pdf](http://www.bis.doc.gov/defenseindustrialbaseprograms/osies/DefMarketResearchRpts/ChinaGuides/China1.pdf).

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## **Economic Reality and Alarmist Rhetoric: Getting Real About Buy America**

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In the midst of the greatest financial crisis since the Great Depression, the U.S. Congress passed the \$787 billion *American Recovery and Reinvestment Act (ARRA)*, and President Barack Obama signed it into law. The Buy America provisions contained within the *ARRA* drew an immediate response from Canada, the European Union, China, and other countries that condemned the provisions as “protectionist,” claiming they would “lead to retaliatory measures” and even “trade wars.” These alarmist reactions need to be seen for what they really are – warning signs about everything that has gone wrong with trade and economic policy. It is time to step back and use this response as a learning moment – to come to grips with the manufacturing crisis, a dangerously unbalanced trading system that is out of step with economic and political reality, and the potential conflict over climate change.

### **The *Recovery Act* and Buy America**

As both the U.S. and the international economy imploded in 2008, the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) and the Canadian Labour Congress joined unions across the world to urge their governments to move aggressively on economic stimulus measures designed to generate employment stability. In the United States the AFL-CIO worked with Congress and the Bush and Obama administrations to support the largest stimulus investment in our history. The *ARRA* investments are designed to be the leading edge of a new environmental economic development policy designed to reduce carbon emissions and create good jobs. To ensure, as U.S. taxpayers have every right to expect, that public dollars are recycled to maximum effect in the U.S. economy, Congress included Buy America language in the Act.

services, Canada also excluded dredging and all construction service contracts tendered on behalf of the Department of Transport.<sup>1</sup>

So, what is all the fuss about? The Buy America and the EU and Canadian provisions are all legal and covered under the GPA. In fact, the Buy America policy rewards other nations with reciprocal government procurement agreements by exempting them from certain restrictions. Ironically, Canada did not have a reciprocal relationship with the United States because it had failed to bind its provincial procurement under the GPA. When the crisis hit, it was obliged to enter into negotiations to find a solution.

What is more telling is the reaction that the U.S. provision elicited from our trading partners. Why does an economically and politically sensible action generate such heat, and, if it is legal under the precepts of a negotiated trading system, why is it branded “protectionist”?

### **Protectionism as a Pejorative**

The charge of “protectionist / protectionism” has become a pejorative label applied by free-market / free-trade advocates against any contradictory view. It is used to cut off debate by defining an opponent’s point of view in a negative light. U.S. and Canadian trade unionists, businesses, and economists know well what it feels to be stigmatized in this way. It doesn’t matter that we believe in fair, balanced, and smart trade. Every time an objection or a question is raised about trade policies or agreements pursued by government, multinational corporations, and financial interests which undermine labor, economic, environmental, and other standards, the labeling begins. At times it borders on the absurd. The barrage of protectionist accusations in response to a decision in a trade case filed by the United Steelworkers Union is a good example.

In this case, a Chinese government representative charged at an international meeting held by the Carnegie Institute in Washington, D.C., that the decision imposing tariffs on its tires was protectionist. A number of diplomats present made similar comments. A U.S. union representative responded by pointing out that the decision was based on the illegal actions of the Chinese government – as determined by the independent U.S. International Trade Commission. He explained that the Chinese government’s own testimony revealed how it required a new Cooper tire plant in China to export all its first five years’ production, with the U.S. market as its primary target. The diplomats at the meeting then agreed that the Chinese actions violated WTO rules, though many of them still insisted that the United States was somehow being protectionist.

the free-market fundamentalists who said, “Let them fail.” Today General Motors is a public corporation owned by the U.S. Treasury (60.8%), the employees’ agent (17.5%), the Canadian government (11.7%), and the old GM’s bondholders (10%). The restructured Chrysler (not a public company) has four owners: the U.S. Treasury (9.9%), the employees’ agent (67.7%), Fiat (20%), and the Canadian government (2.5%).<sup>6</sup>

Other countries around the world also made similar “protectionist” choices, but they have been making comparable strategic policy choices in support of a manufacturing strategy for decades. While the auto sector serves as a specific example of our cross-border integration and crisis-driven industrial policy decision-making, it is just the tip of the iceberg.

The United States and Canada are both nations without clear industrial development policies or manufacturing strategies in a world where all our other competitors have one. The consequences have been wage stagnation, spiraling trade deficits, and job loss. Canada is not immune from the contagion. The economic crisis has created a situation that finds both countries stumbling toward an industrial policy. The dire situation in American manufacturing is bad news for both countries.

### **The Crisis in American Manufacturing**

American manufacturing jobs and capacity are being lost at an alarming rate. Between 1998 and 2009, more than 57,000 manufacturing establishments closed.<sup>7</sup> Since 1998, the United States has lost one-third of its manufacturing jobs – more than 6 million in all. Two million of those jobs were lost in the current recession that began in December 2007. At the end of 2009, U.S. manufacturing employment hit 11.63 million, the lowest figure since 1941.<sup>8</sup> Two-thirds of those who lost their jobs were skilled production workers, and a significant portion of the rest were engineers, scientists, designers, managers, software specialists, and industrial machine installation/repair workers – all in occupations critical not only to the operation of production systems but to product and production innovation.

Manufacturing has declined in real terms. Between 2000 and 2009, manufacturing’s share of GDP fell from 14.5 percent to 11.5 percent. Machine tools, the heart of a vibrant industrial base, has seen U.S. consumption decline by 30 percent since 1998.<sup>9</sup> The greatest economic downturn since the 1930s accelerated a decade-long freefall in manufacturing.

According to the Economic Policy Institute, the growth of trade with China since it entered the WTO in 2001 has had a devastating effect on U.S. workers and the domestic economy.<sup>13</sup> Between 2001 and 2007, 2.3 million jobs were lost or displaced, including 366,000 in 2007 alone.<sup>14</sup> Research shows that, even when re-employed in non-traded industries, these workers lost an average \$8,146 per worker per year.<sup>15</sup> In 2007 these losses totaled \$19.4 billion.

Canada and Mexico are not immune from the China factor. In 2007 Mexico reported a \$34 billion trade deficit and the closure of thousands of manufacturing facilities. Parts once made in Mexico are now produced in China, then imported for assembly and export. Canada reported a \$32.6 billion deficit with China in 2008, based on a trade profile of raw materials exports and finished goods imports.<sup>16</sup>

With an explicit export strategy targeting key industries, sectors, and technologies, China has captured a growing share of U.S. and world markets. It has used a wide array of unfair trade practices, including currency manipulation, export subsidies, widespread suppression of worker rights and wages, and tariff and non-tariff barriers to exports, to support this strategy. The Chinese government has purchased massive volumes of foreign exchange in order to suppress the value of its currency. The unsustainable trade imbalances with the United States and other nations allowed the Chinese government to increase its total foreign exchange reserves by \$453 billion last year, to a total of \$2.4 trillion. The financial crisis has proved to be another opportunity for China to take advantage of the rest of the world by increasing its share of U.S. and other markets for manufactured products.

The United States cannot continue to run trade deficits with the rest of the world and, in the process, destroy its own manufacturing base. There must be a rebalancing, and that requires a vibrant American manufacturing sector producing goods for a domestic and world market. The Buy America provision is a small tactical step in that direction, though it foreshadows much larger concerns.

### **Common Problems, Common Sense**

The economic and environmental challenges the world faces are compounded by trade distortions and market failure. The 2006 *Economics of Climate Change* report by the British government's Stern Commission stated that "Climate Change presents a unique challenge for economics: it is the greatest and widest-ranging market failure ever seen." The 2008 worldwide

concerns will drive additional trillions of public and private investment into energy efficiency, carbon reduction, and new energy technologies. Buy America provisions will be part of a fundamental strategic discussion about how we invest in America and the public policies needed to rebalance trade, revitalize manufacturing, develop new industry and technology, and create good jobs. Unions in the United States and Canada know that all these issues are critical.

Ken Neumann, the national director for Canada of the United Steelworkers Union, made this point in an opinion piece published in the *Toronto Star*. He wrote: "Instead of lecturing Americans about the merits of unregulated global trade, Canada should have its own 'Buy Canadian' policy and recognize that, due to the integrated nature of the Canadian and U.S. economies, this current debate in the U.S. is really an opportunity for Canada ... We believe the current challenge for Canada is to develop meaningful policies to support Canadian manufacturing while continuing to be part of an integrated and co-operative North American market. This is an approach that will work for both Canadian and U.S. workers and their economies."<sup>17</sup>

The obsession with American protectionism serves as nothing more than a diversion from the real questions that need to be answered. Our workers and communities deserve less rhetoric, more respect, and real answers.

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**Buy America Provision from the *American Recovery and Reinvestment Act***

**SEC. 1605. USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS**

(a) None of the funds appropriated or otherwise made available by this Act may be used for a project for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States.

(b) Subsection (a) shall not apply in any case or category of cases in "which the head of the Federal department or agency involved finds that -

(1) applying subsection (a) would be inconsistent with the public interest;