

**Testimony of Robert Baugh
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Subcommittee On National Security and Foreign Affairs**

On

Made in the USA: Manufacturing Policy, the Defense Industrial Base, and U.S. National Security

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Thank you Chairman Tierney, Ranking Member Flake and Members of the Committee. I welcome the opportunity to be here today to testify on behalf of the AFL-CIO whose affiliate unions represent some 11.5 million workers across the United States. We believe that the decade long decline American manufacturing base is a crisis that has undermined our economic security and is a direct threat to our national security.

I want to commend Chairman Tierney for the focus of this committee hearing. Economic security and national security are two sides of the same coin. Manufacturing is the key to that security. Speaker Pelosi recognized this when is speaking about the Make it in America agenda that “America’s manufacturers have long stood at the center of our nation’s prosperity and national security.” The question before is what has happened to that prosperity and security and what must we do to strengthen the nation’s industrial base?

The American economy remains mired in a deep recession. Unemployment, underemployment, wage stagnation, foreclosures all paint a grim picture of an economy still struggling to recover.

The current recession is just one more big wave in a decade of economic tsunamis that have hit the workers and employers in American manufacturing. Over the last ten years, we lost approximately six million jobs, two million over the past two years, and saw 57,000 manufacturing facilities close. The loss of these skilled workers, engineers, designers, scientists and more has eroded the nation’s working middle class and dangerously undermined our

technical, industrial and innovative capacity. This nation will not be able to double net exports, reduce our trade deficits substantially nor meet our economic and security needs unless we produce more of what we consume.

This testimony will provide an overview of the impact of the manufacturing sectors decline on the defense industrial base, the reasons for that loss and the steps the nation must take to revitalize American manufacturing. Also included with the submission of this testimony is a recent Buy America article and a new report on the defense industrial base.

Manufacturing Insecurity

It is a myth to think that the manufacturing base and the defense industrial base are independent of one another. A National Research Council study has noted, the boundaries between the defense industrial base—the set of industrial and military facilities devoted to the production of defense-related products—and commercial industry have become blurred. Workers see this on a daily basis as they produce commercial goods and technology that are used or modified for defense purposes.

It is this understanding that led the IUC to commission a report by Dr. Joel Yudken, “Manufacturing Insecurity: America’s Manufacturing Crisis and the Erosion of the U.S. Defense Industrial Base.” The report documents the dangers the nation faces from this erosion. There has been a continuous weakening in 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. In addition there is the shocking growth in trade deficits and import penetration that have led to the loss of millions of U.S. jobs.

Losing Critical Industries

America's manufacturing sector continues to be the largest, most productive and technologically advanced in the world. But its lead in a number of industries vanished years ago, and many of its remaining areas of strength are facing powerful challenges. The Manufacturing Insecurity report shows how the economic indicators translate into eroding industrial sectors and the loss of critical industries.

The pattern of decline in key sectors is such as semiconductors, printed circuit boards, machine tools, advanced materials, and aerospace is apparent. It can also be seen in defense critical technologies where domestic sourcing is endangered including 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). And, it can be found in critical materials like rare earth metals and magnets where the Chinese purchased U.S. manufacturing facilities and closed them (Magnaquench 2004). China now holds a monopoly on the rare-earth minerals used in the manufacturing of the missile magnets. The only operating rare-earth mine is located in Batou, China.

Import Penetration

Another critical indicator of the erosion of U.S. manufacturing competitiveness is the Import Penetration Rate (IPR), the share of the U.S. market held by imports. According to the 2010 U.S. Business and Industry Council (USBIC) study of Import Penetration Rate (IPR)— in 2008, 69 of the 114 capital and technology intensive industries examined lost share of their home U.S. market to imports, and that their aggregate import penetration rate increased from 34.30 percent to 36.23 percent.

In 27 of the 114 sectors, imports controlled 50 percent or more of the U.S. market as of 2008. These import-dominated sectors include aircraft engines and engine parts, construction equipment, and turbines and turbine generator sets. In addition, 15 of the 114 industries studied lost 15 percent or more of their home U.S. market to imports from 2007-2008 alone, including

semiconductors, aircraft engines and engine parts, and plastics and resins.

In a companion study the USBIC looked at the Chinese penetration of U.S. advanced manufacturing. In 1997, Chinese imports accounted for 20 percent or more of total U.S. imports in only two of the 114 industries. By 2008, Chinese imports represented a fifth or more of total U.S. imports in 31 of these industries. These sectors include computers, broadcast and wireless communications equipment; industrial valves, environmental controls, industrial gases, miscellaneous industrial machinery, pumps and pumping equipment, motor vehicle brakes, and printed circuit boards and assemblies.

The broad domestic and global economic trends and import penetration rates reflect a sustained and dangerous erosion across nearly all manufacturing industries, including many that supply products, components, and technologies that the Pentagon considers important to defense. The capacities required for national security needs rest upon a defense industrial base embedded in, the nation's overall domestic manufacturing base.

Offshoring Innovation

The impacts of an eroding domestic manufacturing base on national security stem not only from transnational firms moving research and development, engineering and design offshore, but also from the military's growing reliance on commercial cutting-edge technology. Defense procurement policy emphasis on "dual-use" technology products is that drawing on the an innovative civilian sector would yield not only more up-to-date products, but big cost savings. Those cost saving can come at the expense of our ability to meet the needs of our national defense.

There are other ways technology and capacity leave our shores. The extensive use of offsets in the sales of defense technology creates technical capacity in other nations at the expense of our own is one example. The potential closure of the Northrop Grumman shipbuilding facilities such as Avondale in New Orleans and Ingalls in Pascagoula Mississippi is another that will constrain

the ability of this nation to build naval vessels. Decisions by the Navy to lease ships from foreign manufacturers and the Coast Guard to purchase of major ship sections from Korea that we only assemble here diminishes our technical capacity to have a robust shipbuilding industry.

As the commercial industrial base globalizes, the loss of domestic production facilities can lead to the loss of innovation capabilities. Specifically, the migration of manufacturing offshore is associated with the following trends:

- Weakening innovation capabilities of domestic industrial sectors;
- The transfer—deliberate and unwitting—of cutting-edge technologies and know-how to economic rivals and potential military adversaries; and
- Foreign countries establishing industrial and technology policies aimed at enhancing their technological capabilities relative to America's.

Losing Our Lead

United States has long been—and remains—the world leader in most materials-related technologies, but during the first half of the 2000s decade, the National Research Council warned that this leadership was eroding. This is reflected in the doubling of the U.S. advanced materials industry's global trade deficits between 2002-2006, according to the U.S. Census Bureau's Advanced Technology 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.

Disappearing Advanced Materials

A 2005 National Research Council (NRC) study identified a range of materials science and engineering subfields as the most important to advanced production, and for which there are important and often critical national security applications and products. These include biomaterials; ceramics; composites; magnetic materials; metals; electronic and optical-photonics materials; superconducting materials; polymers; catalysts; and nanomaterials.

The NRC study concludes that, as U.S. materials manufacturing disappears and moves offshore, domestic materials R&D capacity has diminished. U.S. companies, attracted to the growing availability of often lower cost foreign intellectual resources, are shifting their materials science and engineering R&D activities to follow their manufacturing operations overseas. The net result is the erosion of U.S. leadership in advanced materials R&D. The following illustrations from the NRC reports for the National Academy of Science highlight this trend:

- *Metals.* Research into the production, processing, and development of metallic materials in the United States has been declining since 1998.
- *Superalloys.* Superalloy R&D has declined significantly over the past decade. Attracted by lower costs, superalloy manufacturers increasingly are locating their production offshore.
- *Composites.* Composites are a critical technology used in major defense systems. Once unchallenged, other countries in several areas have supplanted U.S. leadership in composites. U.S. defense and commercial programs—the Joint Strike Fighter and Boeing’s 787 Dreamliner—are outsourcing production and supporting R&D in composites overseas.
- *Electronic and Opto-Photonic Materials.* These are critical technologies for maintaining leadership in semiconductors. This industry and its material supply chain are moving toward a global processing and manufacturing infrastructure that is taking some of its R&D capacity with it.

Building Other Nations R&D

The flip side of the migration of U.S. innovation capabilities offshore is the buildup of other countries’ R&D capacity. The strengthening of foreign technology capability does not always result from market forces and commerce-facilitating progress in communications and transportation. Instead, this development often results from multinational companies taking one of three tacks:

- Actively exploiting the business environments created by U.S. trade policy – for which they have lobbied hard – that encourage them to supply the U.S. market even for highly sophisticated manufactures from low-cost foreign facilities;
- Responding to foreign government carrots and sticks; or
- Formulating various investment strategies synthesizing these two approaches.

The carrot-and-stick approach by foreign governments is a direct reflection of a broader strategic and tactical approach to capture markets and technological dominance in specific sectors. The recent announcements by Intel, Applied Materials and other advance technology firms of multibillion dollar investments in research and production facilities in China show how aggressive and successful the Chinese government has become at this game.

Trading Away Jobs and Innovation

Our trade deficits are symptomatic of the rot eating away at our industrial base. In 2008 the U.S. goods trade deficit grew to a staggering \$821 billion, or \$2.2 billion a day. Through the decade our manufactured goods trade deficits with China soared. It has almost tripled in since WTO accession -- from \$84 billion in 2001 to \$266 billion in 2008 and \$227 billion in 2009, some \$2.4 trillion across the decade. In all manufacturing, China's share of the U.S. trade deficit rose continually from 28.5 percent in 2002 to 75.2 percent in 2009. In 2009, we ran a trade deficit with China in advanced technology products of \$73 billion while with the rest of the world, we ran a surplus in ATP of \$17 billion in 2009.

U.S. foreign direct investment (FDI) in China has jumped, especially in manufacturing. FDI in China is all about new production and job creation unlike the United States where it is overwhelmingly about change of ownership not new production. The Economic Policy Institute has estimated that the growth in the U.S. trade deficit with China between 2001-2008 has displaced about 2.4 million American jobs.

Perhaps even more disturbing than the aggregate growth in the U.S. trade imbalance with China is the composition of our imports and exports. Our top fifteen exports to China (by 4-digit HTS code) include five categories of waste products (ferrous scrap, paper scrap, copper scrap, aluminum scrap, and offal); two categories of raw materials (soy and polymers), and at least three categories of parts. In contrast, all of China's top fifteen exports to the United States are manufactured products or parts.

This is clearly not the trade profile that the U.S. government predicted as the likely outcome of China's WTO accession. But it is the result of concerted strategic interventions, starting with currency intervention, by the Chinese government over many years – and inaction by our own. 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 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.

Subsidizing Exports and Investment

Through systematic and one-sided intervention in currency markets, the Chinese government has kept the renminbi approximately 40 percent undervalued with respect to the U.S. dollar for many years in support of its export strategy.

Undervaluation serves their strategy of building powerful export markets rather than their own domestic consumer markets. It takes market share and jobs from the United States by penalizing our exports. It subsidizes imports into this country while subsidizing investments into their economy. The Chinese government's practices amount to as much as a 40 percent subsidy for the products they send here and a tax on products we try to send there while siphoning investment dollars vital to keeping the U.S. at the forefront of research and development.

This is not free trade nor is it the way the major economies of the world have agreed to behave. And the Chinese government's actions influence the monetary policies of other countries compounding our trade problems. The U.S. Treasury bi-annual currency reports acknowledge the fact that other nations (South Korea, Indonesia, India, etc..) mirror the Chinese government's behavior.

In real terms currency manipulation has cost American workers and communities good jobs while undermining this nation's technical and industrial capacity to make the things we consume and export. It uses our dollars to stimulate another nation's economy while racking up unsustainable trade deficits at home. It subsidizes foreign direct investment and the migration of research and development to the Chinese economy.

Ending Currency Manipulation Generates Jobs

The drag on GDP growth that comes from the bilateral trade deficit has significantly broader economic implications. Preliminary estimates from the Economic Policy Institute point to as much as a \$500 billion reduction in our nation's federal budget deficit over the next six years from ending China's currency manipulation.

While addressing China's currency manipulation is one of the highest priorities for workers and employers in the manufacturing sector, it is time to recognize the broader impact of China's practices. Lost manufacturing jobs lead to lost tax revenue and higher budget deficits that limit our ability to invest in our future. This puts substantial pressure on federal, state and local budgets resulting in layoffs of teachers, police and other emergency responders. And it has undermined our future by undercutting the array of career choices and educational opportunities especially in science, engineering and the technical occupations needed for a vibrant innovative manufacturing economy.

It doesn't have to be this way.

Taking action to end currency manipulation will generate jobs and investments in the U.S. economy. Nobel laureate, Paul Krugman, estimates an end to the manipulation would produce a net export gain to the United States, Europe and Japan amounting to about 1.5 percent of GDP, increasing the U.S. economy by about \$220 billion. The Peterson Institute and the Economic Policy Institute agree that a 25 percent to 40 percent revaluation in the renminbi would reduce

the U.S. trade deficit between \$100 billion and \$150 billion per year, adding between 750,000 and 1 million jobs to American payrolls.

It is time for Congress and the Administration to act decisively to end currency manipulation and other illegal trade practices.

Taking Action: A Strategy for the Future

The AFL-CIO recognizes that this Congress has taken important steps to stabilize the economy by helping ensure the survival of a domestic auto industry, investing in needed infrastructure and a diverse efficient clean energy economy along that included Buy America requirements, and putting critical financial reforms in place. More recently the House passed a series of manufacturing bills that included a National Manufacturing Strategy and Trade Deficit Commission. The Administration has also proposed needed new investments in small business, research and development and infrastructure and they are now reviewing the 301 trade case filed by the United Steelworkers against the Chinese government for illegal trade practices designed to capture clean energy market.

This is start but much more needs to be done at scale. The policies, investments and incentives we enact must be strategic and employment linked. Essential to a comprehensive program to restore domestic manufacturing are the following elements:

- **Bringing fairness and equity to the global economy:** While many steps need to be taken, including the expansion and strengthening of Buy America laws and a more vigorous enforcement of unfair trade laws, addressing the manipulation of currency by China and other countries is key. Congress must act now by passing HR 2378 the Currency Exchange Rate Oversight Reform Act of 2010.
- **Investment in infrastructure:** America's infrastructure needs—energy, roads, transit, bridges, rail, water, etc.—are huge. We have a \$2.2 trillion unfunded

infrastructure deficit, according to the American Society of Civil Engineers. Not only will spending here employ people right away, it will lay the foundation for economic growth in the future. Congress should pass an enhanced Surface Transportation Act now to rebuild our roads and bridges and expand mass transportation. FAA Reauthorization, Clean Water, and more are infrastructure investments

- **Tax policy:** Eliminate tax incentives and loopholes that encourage financial speculation rather than investment, outsourcing and off shoring production, and enact tax incentives for companies that produce domestically. The use of tax deferrals encourages offshoring.
- **Energy:** America must not cede leadership of clean energy technology including renewable, nuclear and advanced coal and production equipment for these industries to other nations. We must invest in these 21st century energy infrastructure technologies on a similar scale to our investment in replacing the failing infrastructure of the last century. Enact measures that will expand funding for 48(c), section 136 (the Advanced Technology Vehicles Manufacturing Incentive Program), tax credit programs for clean energy production and higher loan authority. These investments must be coupled with expanded utilization of domestic supply chains.
- **Innovation:** There is a direct correlation between R&D and production and we must protect our nation's innovative leadership. Doing so requires that we maintain strong intellectual property protections to ensure that companies have the incentive to make investments in plant and equipment here at home. We must also increase efforts to fight the intellectual property right violations of competitors that seek to profit from the creativity of our people. Increased support for research and development in the United States, coupled with support for testing and deployment of those new technologies in our factories, will ensure that our manufacturing capabilities expand.
- **Workforce development policies:** Revitalizing our manufacturing sector requires that we make investments in our people to ensure they are equipped to meet the needs

of industry. We cannot afford to have a skills deficit, which would only fuel a trade deficit. Congress must increase access to training funds for people who are out of work as well as those seeking to enhance their skills. Employers must also be encouraged to make corresponding investments in the skills of their workforce.

While the economic crisis that began in 2007 has done massive damage to our country, the truth is our problems run far deeper and none is more fundamental than catastrophic decline of U.S. manufacturing. The health of the economy and our national security are inextricably tied to a vibrant and innovative manufacturing sector. We must revive U.S. manufacturing as a clear centerpiece of our nation's economic and security strategy.