



July 07, 2014, 06:30 am

Government R&D and manufacturing competitiveness

By Robert Atkinson, contributor

US Manufacturers Expanded In June But More Slowly

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Both U.S. manufacturing jobs and output fell at an unprecedented rate in the last decade, contributing to both the financial crisis and the slow recovery we are facing today. But many assert that losing manufacturing is actually a good thing — evidence of a shift to advanced services. In fact, it is not. America needs manufacturing because manufactured goods are the largest part of our traded sector economy — that is, our industries that trade in global markets and that allow us to pay for the imported goods and services Americans rely on. A weak traded sector means a weak economy. Moreover, losing manufacturing is not inevitable, as other nations like Germany run manufacturing trade surpluses even as they face manufacturing labor costs more than 40 percent higher than the United States.

America's deindustrialization has many causes, including the **high effective corporate tax rate** on manufacturers, but one reason of particular significance is government inaction. Other nations have made major investments in commercially relevant, industrially related research and development (R&D) funding while the United States has done little. In fact, the federal government invests comparatively little in R&D for "industrial production and technology," a category that includes research into improving industrial efficiency and new production techniques, as well as specific manufacturing technologies like materials science and nanotechnology.

Indeed, the German and South Korean governments invest nearly nine times more than the United States in R&D for industrial production and technology, while Japan spends four times more. Not surprisingly, all three nations have run large manufacturing trade surpluses in the past decade. Even France and the United Kingdom, which both invest less overall than the United States on industrially relevant R&D, invested more as a percentage of GDP. Furthermore, these nations are all looking to expand this investment and the competitive advantage that goes with it in the future. For example, in 2013, British Prime Minister David Cameron announced the creation of the **Catapult** program, which is designed to dramatically expand funding for industrially relevant R&D in areas such as aeronautics and advanced composite materials.

Why are other countries investing in commercially oriented industrial R&D fields while the United States does not? There are two key reasons. First, they are not constrained by America's intellectual straitjacket that believes the only legitimate role for public R&D is either pure knowledge creation through basic science at universities or mission-driven research at national laboratories. Second, unlike the United States, they see themselves in intense competition for global market share in advanced industries, and they want to win. And investing public R&D in these industrially relevant fields is a way to win. To be clear, virtually every nation making these big investments is not "picking winners" or engaging in heavy-handed industrial policy. Rather, they are supporting pre-competitive knowledge creation related to the needs of the key traded industries in their economies.

The United States is beginning to awaken to the importance of these kinds of investments, albeit slowly. A case in point is the bipartisan Revitalize American Manufacturing Innovation (RAMI) bill currently in Congress, which would allocate funding for manufacturing innovation institutes across the country. These institutes, privately supported after an initial government investment, would focus specifically on developing different manufacturing technologies, facilitating commercialization and providing important workforce skills. Similarly, the America INNOVATES act would reform policies governing the National Laboratory system to make it easier for the labs to collaborate with industry and increase technology transfer and commercialization of next generation technologies.

For the United States to regain its lost manufacturing prowess, it must build on policies such as these to regain technological advantage over our global competitors. The private sector cannot do this alone, as businesses have been shown to underinvest in new technologies both in theory and in practice. Government investment in commercial manufacturing technologies — through programs like those proposed in the RAMI bill — can pay significant dividends and is essential if the United States hopes to compete. Other nations are

already making these investments. Unless we do the same, we will be left behind, and pay the price in jobs and national income stagnation.

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TAGS: Manufacturing, Research and development, R&D, Deindustrialization, Revitalize American Manufacturing Innovation, RAMI, America INNOVATES

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