



POLICY HIGHLIGHTS AND SUMMARY
**Strengthening U.S. Manufacturing
Through Public Procurement Policies**
How Procurement Policies Can Promote Innovation and Good Jobs



Photo: Deanne Fitzmaurice

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POLICY HIGHLIGHTS

Strengthening U.S. Manufacturing Through Public Procurement Policies

This study advances a policy framework capable of supporting a major revival of the United States manufacturing sector. We are especially focused on the prospects for greatly expanding good job opportunities for U.S. workers that would result through the revival of the U.S. manufacturing sector. We focus, further, on using one set of policy tools—U.S. public sector purchases of manufactured goods, or procurement policies—to promote growth and expanding job opportunities within one manufacturing industry, i.e. the production of railcar transportation equipment. We show how some significant, though still straightforward, reforms of the official U.S. Department of Transportation (DOT) procurement program known as Buy America are capable of generating major benefits to domestic railcar manufacturers as well as to workers in this sector.

Of course, improving the DOT's Buy America program is only one of several policy initiatives that are needed to support a U.S. manufacturing revival, in the railcar industry and more generally. Other important measures that are needed in behalf of the U.S. manufacturing sector include 1) research and development support; 2) targeted credit policies; 3) better job training programs and job ladders within firms; and 4) more support for developing regional manufacturing eco-systems, which help form mutually supportive local supply chains.

Procurement policies can play a central role among these various initiatives. This is because they are the means through which the government can help establish more stable domestic markets for U.S. manufacturing firms. This, in turn, enables the firms to operate with longer

time horizons, which creates an environment supportive of innovation and building a skilled and stable workforce.

We reach the following main conclusions with respect to the Buy America procurement program as it operates presently throughout the U.S.:

- 1 Domestic content standards are too low.** The official domestic content requirements include 60 percent domestic production for components and 100 percent for final assembly in railcar manufacturing. But as we show, these standards amount to an overall requirement of only 40 percent domestic production. That is, up to 60 percent of production can be provided by imports.
- 2 Monitoring and enforcement standards are too weak.** The monitoring and enforcement levels for even these low domestic content requirements are weak. Moreover, few local transit agencies have adequate capacity to conduct audits in-house and public interest groups face major obstacles in obtaining relevant compliance information.
- 3 Too many waivers are granted.** The available evidence suggests that the Department of Transportation has been too willing to grant waivers to contractors bidding on transportation procurement projects covered under Buy America. The Department of Transportation needs to keep systematic records on waiver applications and decisions and to establish consistently high thresholds for granting waivers.

4 **Lowest-price standards are too narrow.** Procurement contracts under Buy America are predominantly awarded to firms offering the lowest-price bids. This pattern suggests that the broader benefits generated by domestically-based manufacturing projects are likely being undervalued. These are tangible benefits that accrue to U.S. taxpayers—in terms of strengthening innovative manufacturing firms in the U.S., as well as generating more jobs, better jobs, and better access to job opportunities, including for women, minorities and recent labor market entrants with lower formal credentials. The U.S. Employment Plan developed initially in 2010 by the Los Angeles County Metropolitan Authority demonstrates how these other important considerations can be readily incorporated into an employment-enhanced best-value evaluation system.

From a broader perspective, we conclude that strengthening the DOT's Buy America procurement policies, and combining these stronger policies with employment-enhanced best-value contract evaluation criteria, can make major contributions toward promoting a revival of the manufacturing sector in the United States and creating millions of good manufacturing jobs for U.S. workers.

SUMMARY

Strengthening U.S. Manufacturing Through Public Procurement Policies

The purpose of this study is to advance a policy framework capable of supporting a major revival of the United States manufacturing sector. We are especially focused on the prospects for greatly expanding good job opportunities for U.S. workers that would result through the revival of the U.S. manufacturing sector.

Even more specifically, this study focuses on using one set of policy tools—U.S. public sector purchases of manufactured goods, or *procurement policies*—to promote growth and expanding job opportunities within one manufacturing industry, i.e. the production of railcar transportation equipment. We show how some significant, though still straightforward, reforms of the official U.S. Department of Transportation procurement program known as Buy America are capable of generating major benefits to domestic railcar manufacturers as well as to workers in this sector.

Overall, state, municipal and the federal government in the United States constitute the largest single purchaser of goods and services in the world. In 2013, total government purchases amounted to \$1.1 trillion, equal to 6.5 percent of U.S. GDP. Manufacturing procurement contracts alone were at approximately \$400 billion, which was 2.4 percent of U.S. GDP and roughly equal to the entire GDP of Austria that year. Our aim is to show how the U.S. public sector can utilize this tremendous resource to promote the revival of U.S. manufacturing and expand good job opportunities. This includes a resurgence of manufacturing in regions of the U.S. that have been badly hurt by declines in their manufacturing sectors over the past generation.

We argue that initiatives to significantly improve the Buy America program should be seen as one critical component of a broader set of policies for reviving U.S. manufacturing. This broader policy framework for reviving manufacturing needs to include support for research and development in manufacturing innovation; financial policies capable of delivering affordable credit for manufacturing investors; effective job training and job ladder programs; increased manufacturing job opportunities for women, minorities, and new labor market entrants with lesser credentials; and the strengthening of regional manufacturing eco-systems, which help develop mutually supportive local supply chains.

But within this full set of manufacturing sector initiatives, we argue that procurement policies can make uniquely important contributions. This is because procurement policies can be undertaken rapidly and can therefore have a major positive impact within a 3- to 5-year period. As such, procurement policies can serve as a catalyst to promote a more comprehensive set of initiatives to revive manufacturing in the United States economy.

In addition to an introductory Section 1, this study is divided into four sections: The Challenges Confronting U.S. Manufacturing; The U.S. Railcar Industry and Buy America Program; Estimating Domestic Content and Employment Impacts; and Advancing Manufacturing through Procurement Policies. This summary gives a brief overview of the full study.

THE CHALLENGES CONFRONTING U.S. MANUFACTURING

The U.S. economy continues to face enormous questions and challenges in attempting to fully recover from the financial crisis and Great Recession of 2007-09. One fundamental question is: Can the U.S. economy establish a growth engine whose foundation is something other than financial bubbles—that is, the types of excessive financial speculation that drove growth in the late 1990s, before the 2001 recession; and most emphatically, from 2002-07, before the financial crash and Great Recession?

We need to focus on the U.S. manufacturing sector in addressing this question. Since the early 1980s, leading analysts from across the political spectrum have consistently expressed alarm over the decline of U.S. manufacturing. The main patterns identified by these authors include: 1) the sharp declines in former manufacturing strongholds, most dramatically the U.S. auto industry, but more broadly throughout both what is now termed the “rustbelt” Midwest and Northeast, as well as the South; 2) the losses of millions of manufacturing jobs, including 5 million jobs lost between 2000 and 2014; and 3) the persistent U.S. manufacturing trade deficit—i.e. the pattern of the U.S. economy importing far more manufactured products than it is selling as exports to other countries.

These analysts argue that a revival of the manufacturing sector is critical to establishing a healthy long-term U.S. growth trajectory. A revived manufacturing sector could generate millions of good jobs in all regions of the country and reduce the country’s trade deficit. A strong manufacturing sector is also necessary to advance technical innovation in the U.S. economy. This is because producing manufactured goods is the most important site in which technical innovations—the fruits of investment in research and development—are

tested, refined, commercialized and ultimately integrated into the overall stream of economic activity.

The rise of outsourcing and offshoring have been major factors behind the U.S. manufacturing decline. Outsourcing refers to U.S. companies choosing to subcontract out part of their operations, as opposed to undertaking that operation in-house. Offshoring refers to when U.S. firms conduct their outsourcing operations in other countries. The most careful empirical research on these patterns finds that offshoring led to a drop of 3.5 million full-time equivalent jobs between 1998 and 2006 as well as a substantial rise in overall income inequality.

At the same time, not all indicators on U.S. manufacturing are negative. For example, as of 2013, U.S. manufacturing production was at \$2.2 trillion, greater than all other countries other than China, and greater than the total GDP of all but five other countries. U.S. manufacturing exports alone were at \$1.6 trillion, a level that is itself greater than the total GDP of all but 11 countries. The range of U.S. manufacturing exports is also wide, including automobile vehicles, parts, and engines; civilian aircrafts; medical equipment; pharmaceutical products; industrial engines; plastic materials; and cell phones. This is despite the fact that U.S. manufacturing imports remain substantially greater than exports. In addition, major innovations have emerged out of the U.S. manufacturing sector in recent decades, especially in various high-tech fields, including information and communications, electronics, flexible manufacturing, aerospace, and medical diagnosis.

Finally, there is already evidence of a reversal of the longstanding offshoring trend, with early signs of a reverse *onshoring*, or *reshoring* pattern beginning to emerge. The main driver of this reshoring trend is that some major manufacturing firms, such as General Electric, are finding that, increasingly, they can produce at competitive cost levels through U.S.-based operations.

This is especially significant since the main factor behind the offshoring trend was that firms such as General Electric were convinced that they could significantly lower their overall costs by producing in other countries, including especially China and other low-wage countries.

We examine a range of evidence on these issues. For example, we consider the sharply varying perspectives over whether the reshoring pattern is likely to become significant on its own, without the support of major policy interventions. Our conclusion is that the reshoring pattern remains modest, and is not likely to gain significant momentum on its own. We therefore conclude that active and effective public policies are needed to deliver a true U.S. manufacturing revival.

What are the key policy areas that need to be strengthened? The German economy has been highly successful over the past two decades in advancing production and exports for its manufacturing sector, even while average manufacturing labor costs are 30 percent higher than those in the U.S. Several researchers, including Susan Helper, the current Chief Economist at the U.S. Commerce Department, have identified four main elements behind the successful German model: These include: 1) the federal government has provided strong support for research and development; 2) German workers and employers benefit from a system of continuous vocational training; 3) German manufacturing firms enjoy stable access to finance; and 4) steady worker protections ensure German employers and unions work together to adopt high-road solutions that strengthen competitiveness in the long term.

Building in part from the German experience, the MIT political scientist Suzanne Berger, advances policy ideas focused on the issue of promoting manufacturing innovation at all levels of the U.S. economy—among both high-tech as well as Main Street firms. Across all types of firms, Berger describes the need for policies that engage a wide range of actors in the economy, not just govern-

ment initiatives. The types of public and private sector measures that she emphasizes include “incentivizing efforts to bring together existing but isolated actors; connecting schools that are educating future workers with the employers who hire them; pooling and reducing the risks associated with developing new technologies; getting the benefits of economies of scale by sharing facilities too expensive for any but the largest firm to have in-house; and creating and diffusing technology before there’s a clear path to commercializing it or a firm willing to commit to developing it.” Berger herself does not explore the role of procurement policies as one government policy tool that can serve to “convene, coordinate, and reduce risk by pooling risk.” But producing a well-structured, stable market with long-term horizons and that is consistently supportive of U.S. manufacturing development can play a central role in “reducing risk by pooling risk.”

This becomes clear through the research of the economist Vernon Ruttan, who explicitly examines the role of procurement policies in advancing manufacturing innovation as one central factor in promoting the U.S. economy’s long-term development. Ruttan’s particular focus is how, *operating in combination*, R&D and procurement policies worked effectively within the U.S. military to produce major breakthroughs—indeed spectacular innovations—in the technological development and commercialization of manufactured products. Over the past century, these military-based innovations included nuclear energy and electric power; jet aviation; the computer industry; the space industries; and the internet. Ruttan also makes clear that the history of manufacturing innovation that he describes emerging out of U.S. military-based industrial policies also has broader applicability in other manufacturing sectors, such as agriculture and biotech.

The policy challenge now is to utilize procurement policies in the most effective way to strengthen the broader effort in support of a U.S. manufacturing revival.

THE U.S. RAILCAR INDUSTRY AND BUY AMERICA PROGRAM

In this section, we focus on the role of procurement policies as they operate within the U.S. railcar manufacturing sector. We address broad considerations on both the long-term and more recent trajectories of the U.S. railcar manufacturing sector as well as detailed issues around Buy America procurement policies as they apply to railcar manufacturing.

During the early 20th Century, the United States was a global leader in the intercity passenger rail industry. Innovations of the U.S. passenger rail industry in the first part of the 20th Century were strongly supported by federal funding, in particular, funds from the New Deal Public Works Administration. But beginning in the mid-1950s, the federal government shifted its infrastructure spending priorities away from intercity passenger travel, focusing instead on the development of highways and airports. Passenger rail equipment manufacturers started sourcing parts globally, hollowing out their domestic supply chain. As a consequence, the U.S. industry was unable to keep pace with rail manufacturing innovations in other countries. In addition, smaller U.S. manufacturers of components, such as castings, parts, and wirings, shifted their focus away from rail manufacturing in favor of the auto and aerospace industries.

At present, none of the world's largest rail equipment manufacturers are U.S.-based companies. In the U.S., the lack of public sector support for the industry contributed to the decline in the quality of equipment and the service provided. In response to this decline, the U.S. Department of Transportation (DOT) introduced Buy America as a provision of the 1982 Surface Transportation Act, later codified in Title 49 of the United States Code. The Buy America standards apply to a wide range

of activities within the DOT's administrative domain. We focus here on the operations of Buy America, as it operates specifically under the Federal Transit Administration's (FTA) provisions. These are the measures that apply to the production of buses and rolling stock for U.S. public procurement projects.

The two basic features of the FTA Buy America program are that 1) At least 60 percent of all railcar components must be produced in the United States; and 2) 100 percent of all final assembly of railcars be performed in the United States. In principle, these procurement requirements should provide significant benefits to U.S. railcar manufacturers. However, in practice, the Buy America program is weaker than these basic outline features suggest.

First of all, as we show, the actual level of domestic content required for overall railcar manufacturing procurement projects is only 40 percent. This is, first, because of the specifics through which subcomponents are determined as being either domestically produced or imported; and, second, because design and administration activities are exempt from Buy America requirements. In addition, monitoring and enforcement activities are inadequate, in part because the regional agencies charged with enforcement do not have sufficient staffing and expertise to perform this work adequately. Manufacturers have also been able to regularly obtain waivers from the Buy America requirements.

Another significant problem with procurement policies beyond the Buy America program itself results through government agencies adopting a "lowest price, technically acceptable" evaluation procedure for awarding procurement contracts. Under this framework, the firm offering the proposal with the lowest bottom line wins the contract, as long as it also meets the minimal technical requirements as a manufacturer. The

goal with this approach is to minimize the direct costs to government agencies, and thereby ultimately to taxpayers, of a procurement project. But this approach is likely to overlook other important considerations. These other considerations may include the past performance record of the contractor offering the lowest bid. They could also include broader social and economic factors, such as the job opportunities, opportunities for small and minority-owned businesses, and positive community spillover impacts of various proposals from any given procurement contract.

An alternative evaluation procedure is the “best-value” approach. Under the best-value approach, additional criteria—such as the past performance of firms and employment impacts—can be formally integrated into the evaluation process. Interest in the use of best-value procurement has been rising in recent years. Nevertheless, in actual practice over recent years, most railcar manufacturing contracts in the U.S. have continued to be awarded to the lowest price bidder.

There have also been recent important developments in integrating employment criteria into best-value evaluations. The Los Angeles County Metropolitan Transit Authority, in particular, has been an innovator in expanding the best value standards to include employment impacts of procurement projects. In 2010, LA MTA created what they termed a “U.S. Employment Program” that required all firms bidding on public procurement contracts to estimate how many jobs they would create for U.S. workers and to explain how they would open job opportunities as widely as possible. Similar employment criteria have also been recently incorporated into proposal evaluations by Amtrak, the Chicago Transit Authority and the Maryland Transportation Authority.

ESTIMATING DOMESTIC CONTENT AND EMPLOYMENT IMPACTS

In this section, we first review a range of evidence on the actual level of domestic content in public procurement contracts for railroad rolling stock. We then estimate the job impacts of public investments in this sector of the economy.

For estimating domestic content levels, we consider evidence both from the U.S. Department of Commerce statistical tables as well as from audits submitted by firms competing for procurement contracts that fall under the Buy America requirements. We find from this review that, on average, overall domestic content level for U.S railcar manufacturing under public procurement is about 60 percent—that is, about 20 percentage points higher than the 40 percent minimum required under Buy America. We work with this result both in terms of estimating employment impacts of domestic content requirements as well as addressing broader policy issues around strengthening Buy America.

Among other considerations, we show that, even if the average level of domestic content is around 60 percent for Buy America procurement contracts, it is still possible for this percentage to fall well below this average figure. We review one important case in point. This was a large contract to build railcars for a major urban metropolitan transit authority. For various reasons, the names of the specific transit agency involved as well as the firms that bid on the contract need to remain anonymous. In fact, such details are unimportant for the purposes of our research, while the bidding patterns and outcome of the process are quite significant. As we show, it is clear in this case that the domestic content level for the company that received the contract was almost certainly substantially below that of one of its major competitors.

The importance for overall community welfare of higher domestic content levels becomes clear in evaluating job creation levels under varying domestic content levels. We show that raising domestic content levels for railcar manufacturing projects from 40 to 60 percent will increase U.S. job creation by nearly 30 percent. If we were to strengthen Buy America by increasing the domestic content level to 90 percent in railcar manufacturing, the impact would be to raise job creation by 71 percent relative to a 40 percent domestic content standard and by 33 percent relative to a 60 percent standard.

We also examine the quality of jobs generated by railcar manufacturing investments. We find that, on average, manufacturing jobs are higher quality than the average job within the U.S. labor market. Average wages, first, are 13 percent higher. In addition, between 12 and 15 percent more workers hold full-time jobs, receive health insurance and retirement benefits from their jobs. Jobs generated through railcar manufacturing investments also offer greater opportunities than average for raises and advancement among workers having low formal educational credentials.

However, we also found that jobs generated by railcar manufacturing investments offer fewer opportunities for non-white and/or Latino workers and for women than average. Especially because these jobs do have a history of providing better wages and benefits than average, it is important that procurement policies include provisions that promote equal access for groups that have been underrepresented in these sectors.

ADVANCING MANUFACTURING THROUGH PROCUREMENT POLICIES

The various perspectives that we review in the previous sections of this study lead us to some clear overarching conclusions. First, Buy America standards need to be raised above the current effective threshold of 40 percent. It is beyond the scope of this study to recommend what the appropriate threshold should be, but it is a question that could be effectively answered through further research. In addition, Buy America needs to operate with higher monitoring and enforcement standards, and with more stringent requirements for granting waiver requests.

The fact that, as a national average, actual current domestic content levels for transportation procurement are above 40 percent—and are probably closer to about 60 percent—does not mean that the Buy America standards are adequate. The 60 percent domestic content average still means that many projects will be below this average figure, as is almost certainly the case with the major project that we discuss above and review in some detail later in the study.

In addition, even if the current average level of domestic content is within the range of 60 percent, we do not have in place a sufficiently supportive policy environment to maintain that average current domestic content level moving forward, much less prevent the domestic content share from falling to lower levels. U.S. manufacturing today is hovering between two distinct future trajectories. The U.S. has lost approximately 5 million manufacturing jobs since 2000, and the primary cause of these job losses has been offshoring. There is also a modest reshoring pattern emerging among U.S. manufacturers, as the overall cost gap between production overseas versus production in the U.S.

may be diminishing in some situations. But it is not clear which tendency—further offshoring and job losses or reshoring and job gains—will become stronger over time.

This is precisely where effective policy interventions on behalf of U.S. manufacturing in general, and railcar and rolling stock manufacturing in particular, remain critical. The establishment of a higher Buy America threshold should be supported by complementary policies that can help increase the number of domestic firms that are able to compete effectively for manufacturing procurement projects. As mentioned above, these policies should include 1) research and development support; 2) targeted credit policies; 3) better job training programs and job ladders within firms; and 4) more support for developing regional manufacturing eco-systems, which help form mutually supportive local supply chains.

Procurement policies play a central role among these other initiatives, because procurement policies are the means through which the

government can help establish more stable domestic markets for U.S. manufacturing firms. This, in turn, enables the firms to operate with longer time horizons, which creates an environment supportive of innovation and building a skilled and stable workforce. It is equally critical that the benefits of a U.S. manufacturing revival be shared as widely as possible. This is why procurement policies need to work within a best-value evaluation system as opposed to a lowest-cost system. In addition, a U.S. Employment Plan, as pioneered by the LA Metropolitan Transit Authority and, to date, adopted as well in Chicago, Maryland and with AMTRAK, strengthens the best-value framework.

Considered overall, the project of strengthening the Department of Transportation's Buy America procurement policies, and combining these stronger policies with employment enhanced best-value contract evaluation criteria, can make major contributions toward promoting a revival of the manufacturing sector in the United States and creating millions of good manufacturing jobs for U.S. workers.