Made in America 2030: A Smart Infrastructure and Industrial Strategy Can Make Post-COVID America Stronger

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Abstract
As we emerge from the current lockdown and economic freeze, the US economy will need a substantial boost. Congress should respond to this opportunity with a two-part economic rebuilding program we call Made in America 2030. This $5 trillion ten-year program would support the rebuilding of vital American infrastructure, backed up with new tougher Buy American rules, and an industrial strategy for reshoring and rebuilding four key US industries, medical supplies, pharmaceuticals, broadband infrastructure, and alternative energy. This comprehensive plan, crafted to attract bipartisan support, would strengthen our manufacturing base while also stimulating research and development in key industries of the future. It would create at least three million good-paying jobs, boost US GDP by at least 5 percent, and reinforce our national security. In recent years, our leadership has ebbed in many important industries. Under this plan, the US would by 2030 regain world leadership in targeted industries.

When the current set of lockdowns and quarantines comes to an end, hopefully sooner than later, the US economy will need an unprecedented boost to ensure that it does not linger in a COVID-induced depression. The $2 trillion CARES Act passed in March was a disaster relief package designed to help people and business get through the current isolation and economic freeze period.

When we reopen, many companies will have gone out of business, many people will have lost their jobs, and many will be burdened with debt to their landlords, their universities, or other creditors. The challenge then will be to re-start the US economy, and get it to bounce back as quickly as possible. The economy will be in need of a fresh stimulus package to restore growth, boost spending, and put people back to work.

Further, the COVID crisis revealed with brutal clarity that global supply chains cannot be relied upon in a crisis. The United States is the world’s largest economy with 150 million workers and huge productive potential, yet in the COVID pandemic of 2020 we discovered that the US was not positioned to manufacture or import much of the personal protective equipment (PPE) our health care professionals needed to serve stricken patients while keeping themselves safe. Hospitals in New York are making plans to share one ventilator between two patients, and meanwhile developing systems to decide whom to prioritize in the event that they lack enough equipment to keep all their patients alive. It is a sad sight in a nation that spends more than $3 trillion a year on health care. The US was caught more short than many other nations, because we offshored more production than others in the globalization fad that has reigned since the 1990s. That fad may be coming to an end now.

A Made in America 2030 program can boost the economy and address many of our long-term...
economic and national security weaknesses. Congress should consider a $5 trillion ten-year program, divided equally between rebuilding aging US infrastructure and an industrial strategy to rebuild vital American industrial capabilities. Unlike the CARES Act, which was focused on the pressing current need to keep businesses alive and help families pay their bills, a Made in America 2030 program would boost investment in the future of the US economy. It would address the woeful state of our roads, bridges, and other vital infrastructure. It would begin to correct our helplessness facing the COVID-19 pandemic. It would provide support for the manufacturing industries of the future, including medical supplies, pharmaceuticals, broadband Internet networks, and alternative energy. It would create more than three million jobs and boost GDP by some $500 billion a year in the early years, rising higher over time as the reshored industries ramp up production. By embracing objectives supported by the left, like nationwide broadband service to every household and alternative energy, while meeting the objectives of conservatives by acting entirely through the private sector and allowing the profit motive to govern the investment, Made in America 2030 would attract bipartisan support. Such support is essential to carry through a broad, ambitious decade-long program.

The plan is pro-manufacturing and pro-trade. The US would continue to trade and indeed would continue to be the world’s largest importer. Both the infrastructure and the industrial strategy components would boost our manufacturing sector, create more good-paying jobs, bring more investment to the US economy, and raise our GDP growth rate.

Such a program would also benefit US national security, making us more self-reliant in critical sectors than we are today. A nation that claims to the world’s number one military power cannot be dependent on foreign nations for vital medical supplies—it especially must not be dependent on its number one rival, the People’s Republic of China. Our loss of leadership in vital industries like broadband networks and solar energy is a sad omen for the future. If we lose our leadership in vital technology areas like microchips, our entire defense capability will suffer. On the eve of World War II, FDR proclaimed the US would be the “arsenal of democracy” for our ability to churn out more tanks, planes, ships, jeeps, guns, and bullets than anyone thought possible. Today, we are unable to produce enough simple face masks to keep our hospital workers safe. This situation must be fixed, and quickly.

Ten-Year Infrastructure Plan
In the last 30 years, other advanced nations have spent an average of 2.6 percent of GDP on infrastructure. The US has spent just half that, 1.3 percent, which explains why our roads are crumbling, our airports are overcrowded, and our bridges are falling down. Past infrastructure plans have often squandered money on useless or politically expedient projects. To overcome those pitfalls, the Made in America 2030 infrastructure plan should be managed by an independent Infrastructure Commission made up of independent experts and answerable to Congress. The Commission would choose some 50-75 projects a year. Congress would approve the list, but neither the federal government nor state governments could tinker with the details. The projects would be prioritized on the basis of pressing need and the creation of good jobs. Execution would be left to the Commission and the administrators they appoint, who would be business people with a track record of delivering on results. With the cooperation of unions and contractors, and by paying union wages, this program will generate hundreds of thousands of jobs in construction, typically paying $80,000-$100,000 a year. It will offer opportunities to thousands of young people without college degrees.

The permitting process needs to be speeded up. Too many projects in the past have spent years
and years in the permitting process, often leading to abandonment of the project. Environmental standards must be met, but the urgency of the needs must also be respected. The assistance of the Army Corps of Engineers has more than 200 years’ experience building environmentally conscious flood control and other projects and can play a valuable role in an infrastructure plan.

The improvements to our ports, roads, bridges, airports, and hospitals will generate multifold benefits. In addition to jobs and a boost to the economy, benefits will include more efficient transportation of people and freight and better health care for the areas that need it most. In addition, a portion of the funds should be set aside for research and development into future technologies that can benefit infrastructure. As an illustrative example, France has experimented with solar panels placed under highways as an innovative source of electric power. The US should be looking into these technologies too. They may be unprofitable today but could be commonplace in a couple of decades.

Dan Slane was the architect of a federal infrastructure proposal for the Trump administration in 2017. He left the administration when the plan was shelved and today is CEO of Texas Back in Business, a federal program charged with dispensing grants and loans totaling $100 million to businesses harmed by Hurricane Harvey in 2017. Slane’s 2017 plan envisaged an independent body to administer infrastructure projects, which would have been entirely publicly funded and administered by veteran businesspeople like Slane himself. He believes such a program would deliver more than past infrastructure programs, which mostly failed to meet expectations. “Past infrastructure programs were not required to show results,” he says. “A good infrastructure plan will do the analytics to show the expected results and then report back each year on progress. It must be insulated from political pressure.”

Spending on US infrastructure should go towards US-produced goods wherever possible and resort to imports only when US production is not available. Tariffs or quotas must be implemented to prevent spending on imports in the infrastructure and reshoring programs. The US already has two major pieces of Buy American regulation, governing the sourcing policies of government-funded entities. However these laws have been largely ineffective, for a number of reasons. One necessary action is for the US to exit the World Trade Organization's Government Procurement Agreement. This binds us to treat more than 40 foreign nations as if they are “American” for government procurement purposes.

A $2.5 trillion investment in infrastructure over ten years will yield great improvements in our roads, bridges, public transit systems, airports, and utility systems like water and electricity supply. It will provide the opportunity to upgrade these systems with the latest technologies and materials. Backed up with a true Buy American policy, it will provide a boost to large supplier industries including steel, cement, and other basic materials. This plan would create thousands of jobs in construction, road-building and related fields, along with significant stimulus to basic materials industries.

Made in America Industrial Strategy
We identify four industrial sectors which are crucial for national security, health and safety, and economic security. These four sectors are not the only sectors where production must be reshored, but they are the best place to start. All four fall within the 16 critical sectors identified by the Department of Homeland Security, two in the Health care and Public Health Sector, one in the Communications Sector, and one in the Energy Sector. All of them have implications for another crucial sector, the Defense Industrial Base, because all four involve products and technologies our military relies on. Technological progress is an important characteristic of all four...
sectors so to maintain and expand our technological leadership we need to be involved in production as well as research and development. Finally, each of the four sectors would provide thousands of good-paying US jobs.

Our first two targeted sectors are medical supplies and the pharmaceutical industry. They reflect the urgent need to reshore these industries in the wake of the severe shortages the nation has suffered during the COVID crisis. Next is the broadband Internet communications industry, including 5G wireless networks. Finally, we should target reshoring alternative energy, including the solar energy supply chain and the wind energy supply chain. These industries include vital technologies for the future. In all these industries, the US has lost huge sections of its productive potential in the last thirty years as production was offshored, primarily to Asia. Boosting the growth of these industries will help the US economy in the short term and the long term.

It’s no accident that China is the largest player in most of the sectors we target in this plan. China’s policy of targeting and dominating key industrial sectors has been a huge driver of US deindustrialization. The situation in steel is perhaps the most vivid example, and a signpost of where other key industries are headed if the US does not take proactive policy measures. In 2008, China already dominated the world steel industry with 38 percent of global production (per data from World Steel in Figures 2019). Around that time China began to promise it would cut back on its steel production to help ease growing steel overcapacity. Instead, in the next ten years, China boosted its steel production by 81 percent, to give it a 51 percent share of the world steel market. With billions of dollars of government subsidy, China’s hugely loss-making state-owned steel companies export more steel than any other nation, depressing world prices and driving more non-Chinese steel companies out of business each year.

Mike Bowen is CEO of Prestige Ameritech, the largest US producer of medical masks. Bowen says that between 2004 and 2006, the US went from producing 90 percent of its own needs in masks to 10 percent of its needs, as US producers, led by 3M, outsourced manufacture of masks to China, Mexico, and elsewhere. He says the move to outsourcing was driven by the desire of hospitals, government agencies, and retailers to source masks at the cheapest possible prices. Today, a box of 50 masks from China costs about $1, compared with $3.50 from Mexico, and $5 from the US. Since China labor costs are today on a par with Mexico, labor costs do not explain the low China prices. As in other industries, Chinese government subsidies are the only explanation. Says Bowen: “China sells masks at below cost. The China price is like crack cocaine to hospitals and retailers. Walmart makes a killing, buying masks at $1 a box and selling them for $5 or $6. They could make a 50 percent gross margin, but they’re not happy with that, they want to make 80 percent.”

In 2006, Bowen and a partner bought an empty mask factory outside Fort Worth, Texas, to make masks for the US market. He also began warning about how the US would face a mask shortage in a pandemic or other emergency. President Bush made similar warnings around that time. In 2008, Bowen formed the Secure Mask Supply Association to raise awareness about the dangerous dependence on foreign supply. It did no good. Today, Bowen’s facility is producing triple its weekly output of a few months ago, and his best customers are his competitors, companies like 3M that quietly buy from him because they can’t get the masks out of China that governments and hospitals are pleading for. But Bowen expects that after the crisis, if there is no fundamental change, hospitals will once again revert to saving 8 cents a mask by buying from China. Aged 61, he is bitter:

“China is the greatest Trojan Horse the world has ever known. Today, it’s poised to control all our
drugs and all our masks. It makes everybody dependent on China. It destroys all the factories that let us win World War II. I have worked for 14 years to warn people and secure the US mask supply and the only thing I’ve accomplished in all that time is the right to say: I told you so.”

There is a clear national security need to rebuild US-based production in vital health care sectors to equip the nation to deal with the next pandemic or other national crisis. We cannot allow ourselves to be helplessly dependent on foreign suppliers again. The broadband and alternative energy sectors are also highly strategically significant, as we explain below. China has targeted both of those sectors with billions of dollars of Chinese government subsidy. Both offer military, intelligence, and geostrategic benefits to the nation that dominates those industries.

The Importance of Supply Chains
The COVID-19 pandemic has illustrated the importance of the supply chain in most modern industries. The desperate shortage of ventilators for those seriously ill with lung problems from COVID-19 vividly illustrates how this country has foolishly sacrificed health and safety in the name of short-term corporate profit. The US has a number of large-scale suppliers of the vital machines. They assemble the finished products here in the US. Yet their ability to ramp up production in a timely manner was held back by a shortage of vital components including some from China, according to media reports. Ironically, China recently admitted its own ventilator production has been held back by the difficulty in obtaining vital components from Switzerland. The lesson is that in an international crisis each nation’s government and industrial base focuses first on serving the needs of its domestic market. Too much international interdependence is counterproductive.

A related lesson is that the US has become too dependent on Chinese manufacturing. And not just the US, but other economies too. In the words of Harvard Business School Professor Willy Shih: “Nobody could have foreseen what would happen when the world’s second-largest economy went offline and completely shut down external logistics connections.” Shih recommends that companies embrace “regionalization,” use more suppliers in the same region as their final manufacture, and seek second sources and safety stocks for products and components. “Supplier concentration has been the result of companies focusing narrowly on price at the expense of supplier diversity,” he wrote in March.

The importance of the supply chain is not limited to periods of international crisis. Every manufacturing executive knows that a manufacturing system is only as strong as its weakest link. That’s why when Henry Ford led the creation of the world’s first mass production assembly line, he strove to localize as much production as close to Michigan as possible. In World War II, the US government invested millions in perfecting cheap synthetic rubber production because Japan controlled most of the world’s natural rubber supplies. By 1944, the US was producing double the world’s output of natural rubber, and putting millions of military trucks and jeeps on the roads.

Control of key “choke points” in a supply chain enable a nation, over time, to control an entire supply chain and industry. For example the Trump administration’s tariffs on imported solar modules have stimulated an increase in the manufacture of solar panels in the US, both in volume and in the number of companies engaged in the industry. However, China responded with tariffs of its own on US polysilicon, the raw material from which solar cells are made, leading to a decline in US production of polysilicon. That threatens our future ability to ramp up production of solar panels.
In this respect, China is uniquely untrustworthy in using its supply chain as an economic weapon. In 2010, China used its control of the mining of rare earth minerals to punish Japan by banning the export of rare earths out of China. Other nations can be trusted suppliers and trade can play a positive role in the US economy. There are many product areas where individual nations have genuine comparative advantages. For example, the US chipmaking industry relies on German and Dutch chipmaking equipment to manufacture microchips. The relationship is mutually beneficial.

China’s determination to rip up the centuries-old playbook of international trade and try to seek not just self-sufficiency but global domination in many industries is the major threat to modern international trade. The current so-called rules-based global system suffers from a huge hole in that it does not provide a mechanism for surplus countries to be compelled to reduce their surpluses. This has allowed China and others to exploit the system while claiming to follow its rules. The US needs to eliminate its large, persistent trade deficit by increasing domestic production. Once that is accomplished, it will be able to enjoy mutually beneficial trading relationships with partners.

The Made in America 2030 industrial strategy must target complete supply chains, with reasonable judgments about what parts of the supply chain need to be produced in the US and what parts can be left to trusted partners. In the long run, such a policy will lead to better international relations and enable us to decouple from China.

Medical Supplies and Pharmaceuticals
We must prioritize restoring production of medical supplies and pharmaceuticals to the US, before the bitter lessons of the COVID pandemic can be forgotten. The first task is information gathering, requiring companies to report to the authorities the level of US vs. overseas production in final production and in upstream components in the supply chain. For example, ventilators are reported to have up to 700 components in their manufacture. Some of these are widely available while others are highly specialized and only available from a limited number of sources. The latter components are the ones that need to be targeted in a reshoring program. The program should set targets for Buy American totals and require the large companies to meet them. To be equipped for the next pandemic, the US should be able to manufacture 75 percent of vital medical supplies at home, with a plan to have the capability to triple those production levels in the event of crisis. A Strategic National Stockpile can play a role but in the event of a pandemic, production increases are usually needed because stockpiles will be insufficient.

Imports of pharmaceuticals are just under half of the retail value of Americans’ annual expenditure on pharmaceuticals. But, the need for critical pharmaceutical production to be localized back to the US is specific to individual drugs. Independent pharmaceutical experts like Rosemary Gibson have pointed out that often the least expensive, least glamorous drugs are critical to treat certain illnesses and those are the ones where production has not just been offshored, but offshored to China, and then concentrated in a single facility.

Made in America 2030 should set up a multidisciplinary panel including physicians, independent experts, and pharmaceutical industry executives to identify a list of drugs and upstream active pharmaceutical ingredients (APIs) where production needs to be both diversified and reshored back to the United States. Made in America 2030 should then make available to the pharmaceutical companies low-cost loans to rebuild production in the US. The panel should set targets for the US share of production for each sensitive drug. The targets might be on the order of 50 percent, again with
plans to ensure production can be boosted in the event of need.

There are good proposals for a “privatized” strategic national stockpile, in which private companies are paid to store supplies for the strategic national stockpile, and constantly refresh the stocks with the latest products, so they are always up to date. These proposals would overcome the widespread problem where strategic stockpiles are found to be full of obsolete product when crisis strikes. Such a plan likely to be less costly than a centralized government-run stockpile.

For full transparency, the US share of production in each sensitive drug should be published annually. Such a plan will equip the US to meet domestic needs and boost production in the event of emergency. It will also deliver a substantial boost to the manufacturing sector and manufacturing workers. As we explained in a previous study, the US pharmaceutical industry pays workers 47 percent more than the average American worker. Boosting the manufacturing sector in these targeted industries is not only a way of stimulating the long-term growth of the economy, it also improves the distribution of income. The targeted industries in general pay better than the average American industry and by boosting their presence in the US in manufacturing and throughout the supply chain, we boost the number of high-paying jobs in the economy.

By boosting US domestic production, we will also boost our standing in the international community. Globalists have suggested that by boosting US production of medical supplies we are ignoring the international community or might somehow damage our international standing. In fact, the reverse is true. In recent weeks, Italy, the worst-affected nation in the current crisis, has publicly thanked China, Norway, and Qatar for delivering emergency medical supplies. The United States has been unable to help, because our own resources are so sadly depleted by offshoring. By rebuilding our own capabilities, we will be able to resume our role as benefactor to friendly nations in need. Generosity, like international political power, comes from productive capacity.

**Broadband Infrastructure**

The US is losing the race in 5G wireless networks to China. But with a smart investment strategy the US can regain the lead. The 5G race is actually two parallel races: one to deploy the networks across the US and the other to develop the world’s best 5G products and lead the world in marketing US-built 5G network systems to the world’s telecom providers. Today, China leads in network technology, due to Huawei, and it also leads in 5G deployment as China’s three wireless telecom companies are spending billions deploying 5G systems across China.

The federal government has considered ways to incentivize America’s major mobile telecom companies to invest more in deploying 5G networks and foreign governments to insist that their telecom companies avoid deploying Chinese network systems or if they already have them, rip them out and replace them with non-Chinese systems. The core problem with the Trump administration’s approach is that 5G network systems are too new, too expensive, and there are not enough non-Chinese network providers to give comfort to the telecom companies that the market will remain strongly competitive if they reject the Chinese competition. Thus, the overwhelming majority of foreign governments have declined to take the administration’s advice and they continue to deploy networks from Chinese vendors.

US wireless companies spend about $30 billion a year in capital expenditure. Today, less than a quarter of the total goes on 5G networks, because the technology is new, expensive, and there are virtually no uses for it that bring with them additional revenue. The federal
government could alter that equation by offering the industry support for 5G deployment on the order of $10 billion a year, conditioned to meeting Buy American targets. The support should be available for ten years, which will give the mobile companies confidence to buy today’s first-generation systems, knowing they can replace them in a couple of years with second-generation systems which will be cheaper and better. A graduated Made in America program can provide targets of rising US content in R&D and manufacturing over time, to provide time for makers of network system to rebuild their US R&D capability and reestablish their US manufacturing capability.

The loss of high-tech production in the US was a huge loss for the US economy and US technological leadership, and a loss for the tech companies themselves. The federal government should set Made in America targets for the four key parts of the technology food chain: chip design, chip manufacture, network design, and network manufacture. These targets should be realistic. They would start low today but rise over time, to reach 50 percent of the market by Year Five, a reasonable target threshold. Existing network vendors like Nokia and Ericsson would build on their existing US R&D capabilities, while also restoring tech manufacturing to the US.

Equally important, Made in America for broadband should devote a smaller sum of money, on the order of $1 billion a year, to fund R&D by new emerging US-based 5G network vendors. There are already a small number of startups developing 5G systems, and some of them are developing new technology that will leapfrog the capabilities of the most advanced Chinese systems. As they mature into major alternatives to the existing network vendors, they will broaden the choice for foreign telecom companies, leading more of them to reject the Chinese vendors. Providing more choice to foreign telecom providers, especially new US-based alternatives, is the key to pushing the Chinese vendors out of these markets.

**Alternative Energy**

The US developed most of the technologies behind solar energy production and wind energy production. Yet around 15 years ago, China targeted these industries for global domination and as a direct result, the US has lost share and fallen behind. Our productive capacity and our technological leadership have suffered. A Made in America program backed by tariffs and quotas can turn the US into the world leader it once was and, as in broadband technology, we will find international markets for our products because our original technological advancement will put us ahead of the Chinese competition, which is still more about copying than true innovation.

Alternative energy will be huge billion-dollar markets in the years and decades to come. Fossil fuels will also continue to be large industries, and the US is already a world leader there. The various sources of energy are not mutually exclusive. But alternative energy is on a more rapid declining cost curve than fossil fuels. As in broadband and pharma, China’s domination of key parts of the supply chain leaves us no choice but to focus on rebuilding US productive capacity throughout the supply chain.

US solar deployment by households and public utilities already benefits from a federal investment tax credit (ITC) worth 26 percent of the value of the investment. In 2018, the Trump administration gave the US industry protection from cheap Chinese solar panels with a 30 percent tariff. Largely as a result of those two government programs, today about a dozen US-based solar panel manufacturers account for about 5 gigawatts of production for a US market that installed 13.3 gigawatts last year. That’s about 38 percent domestic market share, a huge improvement from the situation five years ago.
when it looked as if US production might not survive at all.

However, dig deeper and the industry is not as healthy as it should be. Solar cells are made from solar wafers, which are in turn made from polysilicon. Both of those upstream sectors are the victim of Chinese domination powered by Chinese government subsidies and tariffs against US producers. Today, China accounts for 75 percent of global solar cell manufacture but 99 percent of the production of solar ingots, from which the cells are made. China appears to be pursuing the same strategy in solar power that it pursued in steel 20 years ago, namely market domination via overproduction. Industry reports say that China is planning to add solar capacity worth an astonishing 500 gigawatts. That’s four times total world solar production in 2019 of 129 GW and could create overcapacity for years to come.

Made in America funding could be supplied directly through low-cost loans to US-based producers. Alternatively, a larger ITC tax credit could be created. The rate of tax credit would vary depending on the proportion of US-manufactured value in the end-product. In that way, government support would extend throughout the supply chain. Any government support would need to be backed up with tariffs and/or quotas given the scale of Chinese capacity expansion plans.

Funding
A $5 trillion ten-year investment program in infrastructure and industrial strategy can be funded by federal debt. The cost of the funding is as low as it has ever been, with the US Treasury able to raise money at unprecedentedly low rates of around 1.35% for 30 year Treasury debt. The investment in infrastructure is overdue and will pay for itself in improvements to travel and efficiency in moving goods around the US. The investment in US manufacturing will pay for itself by boosting industrial output, GDP, and jobs. Both parts of the program will contribute to our national security by making the nation more self-reliant and strengthening many basic industries, which will be upstream suppliers to both infrastructure projects and the new factories and installations of the reshored industries.

Future generations would thank us for far-seeing measures to strengthen the US economy and our place in the world.