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WEBINAR

PRESERVING MANUFACTURING IN THE COVID-19 ECONOMY

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P R O C E E D I N G S

MR. WEST: Good morning, I'm Darrell West, vice president of Governance Studies at the Brookings Institution. I would like to welcome you to our ninth annual John Hazen White Manufacturing Forum. This forum is supported by John Hazen White who also is a Brookings trustee. John and his wife, Liz, and sons, John and Ben, have been longtime supporters. So, I want to thank them for the financial gifts that they have provided. That enables the independent work that our scholars do.

One of the big issues of the last few months is the COVID pandemic. It has ravaged people's health and created serious economic issues for the country, as well as the world. The manufacturing sector has been hit hard by questions in terms of consumer demand, supply chain issues and business practices. So, today we want to look at how these challenges have been handled and what is the future trajectory of the sector. To help us with these issues, we've put together a distinguished set of experts with considerable knowledge about manufacturing. John White is a senior vice president of OEM sales at Taco Comfort Solutions, and he focuses on sales and customer relations. Ben White is vice president of corporate development at Taco Comfort Solutions and he deals with issues related to company operations. David Cicilline is a Congressman from Rhode Island. He was elected in 2006 and has risen to a leadership position within the House of Representatives. He serves as chair of the Democratic Policy and Communications Committee and also chairs the House Anti-Trust Sub-Committee. He has been a leading advocate for the Make It In American agenda for strengthening U.S. manufacturing. Susan Helper is a Carlton professor of economics at Case Western University. She writes extensively about manufacturing and how it deals with various challenges.

For those of you who are watching, I would encourage you to submit questions. We will save a time in this forum to incorporate your questions into our discussion. You can do that via Twitter. We set up a hashtag called a USMFG. So, you can submit questions and I will get to as many of them as possible.

So, I want to start with John. COVID has had a dramatic impact on the economy and business operations. In the initial phase of the pandemic, how did your company respond? I know many of you work on the sales side. What problems or challenges did you encounter and how did you

overcome them?

MR. JOHN WHITE: Hi, Darrell. Good morning, everybody. So, actually, Darrell, for these couple of questions, I think my brother and I are going to tag team them because we both are in very different sides of the business and we both bring different perspectives. I think in true big brother fashion, I'm actually going to take this one to Ben first, so we can discuss the operational side of it. Then I can tie it in to how the sales aspect worked as well.

MR. WEST: Okay. That sounds good. So, Ben, why don't you jump in?

MR. BEN WHITE: Good morning, everybody. It's great to be here with you all and an honor to be on this panel. So, yeah, when COVID hit back in late February or early March, you started to see things. It definitely changed the way that we looked at our business overnight. We had a team of our executive leadership team, globally, that began meeting every morning at 7:30, kind of review what happened the day before, what are we going to be doing today, and moving forward. So, the way that we operate, we had to really shift quickly. That included everything from shifting to a work from home schedule for all of our office workers or anybody that could work from home. It changed the way that we laid out our factories. So, we really had to look at our operations and figure out ways that we could change our setup and allow for social distancing. We had a team that worked diligently to install plexiglass dividers in between our employees on the manufacturing floor. Really, at the core of all this was 2 main goals. One was the safety and health and well-being of our employees. The second really being making sure that we were maintaining a health level of business continuity. So, as we worked through this challenge, we wanted to make sure that when we come out on the other end of this, we have a thriving business that can continue to move forward. So, with that, we really worked to make sure that we were procuring the right personal protective equipment, masks and sanitizers for our employees. We had to look at all the aspects of our business, changing visitor policies, so making sure that it wasn't people coming in off the street for meetings and things like that. As I said, we worked from home, kind of started the end of March. That kind of shifted globally and I think one of the biggest things was the communications teams and making sure that we were all on the same page and how we addressed this. So, our teams in Italy, Switzerland, Czech Republic, Vietnam, we were all coordinated in how we

addressed and making sure coordinated in how we addressed this and making sure that our communications out to the employees was transparent and making sure that they had all their questions answered that they had and making sure that they felt safe. It has definitely changed the way that we operate on a daily basis. I think we will continue to be via limbs that we look through in terms of planning new products in the future and the layout of our floor and our offices and all those types of things. I think, as my brother John said, he can maybe touch on how it affected the kind of external side of the business and how he addressed things.

MR. WEST: Okay. John, do you want to jump in on the sales side and kind of the impact on customer relations?

MR. JOHN WHITE: Certainly. So, on the sales side, our immediate concern, once we realized that this was a real thing and it was potentially and almost certainly going to become a real problem and more and more of an issue. Our first priority was to make sure on the sales side, we had product in the pipeline to supply the market because very, very quickly when this issue came up, both Taco and also a lot of our customers, in the trade, as far as plumbers, contractors, things like that, it also OEM customers and other manufacturers in the heating and cooling industry were deemed essential manufacturers, which means that they were able to remain open. So, very quickly we realized we have to put this product out there in the pipeline to supply these people. They are essential. Without product, they can't do the job which is essential. So, within the first, I would say, week, our first priority was to contact all of our customers. I'll point that Taco has 1 kind of main methods of distributions, if you will. I guess you could say our primary one is through buy sell reps all over the country. These reps buy product from Taco. They stock it on the shelves so they can supply their local markets very quickly. We have response in every single state. The other method of distribution is through what we can to OEM customers. EM customers are other manufacturers in our industry that buy Actually too products and then incorporate them into their finish goods. So, for example, you might buy a boiler and that boiler will have a Taco pump on it. So, all these customers were deemed essential. So, we did pretty much a full audit of our warehouse, to look at all open orders, of our customers, and wee what we already had built at that time on the shelf ready to go. It didn't matter if it was supposed to ship in a week or a month. We did a full audit of what we had on the

shelf and it began, going through out customer list, one by one, contacting our customers and basically just saying, hey, look, you know what is going on here. There is a lot of uncertainty right now, regarding manufacturing, regarding the ability to ship product, things like that. So, here's what we have for you. Some of it's early. Will you take it? Would you like to have it, so you have it on your shelf so there's no risk to you? What I would say, especially on the OEM side, the response was overwhelmingly positive. Actually other manufacturers came to us and said, thank you very much for taking the initiative and for offering. That's a true sign of partnership. I think only in one or two cases, people said no, we're going to gamble and keep it there at Taco. So, probably within the first 3 weeks of the pandemic becoming full blow, we had probably shipped half a million dollars' worth of product on the OEM side early to make sure our customers had the things on their shelves they needed to continue supplying essential products.

So, that was our first primary concern, to keep products in the pipeline. I think the other concern was more of a longer term concern, but we began to think about it then, which now that we had begun to figure out ways to keep manufacturing in a safe and healthy way, to protect our employees, understand that it would be manufacturing in a reduced capacity, the other challenge was to begin to look at open orders going forward and figuring out prioritization. So, only manufacturing at, let's say 50 percent capacity, what do we make, what do we push out. So, that challenge just involved a lot of communication, daily or weekly phone calls with all of our major customers, especially, making sure that they knew what our capacities were and they could tell us what is priority and what is not. That was a challenge that became almost a full-time job, but I think we were able to handle it very, very well. I have to give a major shout out to our supply chain and to our operations folks, by our planners. Everybody worked together in a really, really wonderful way. I wouldn't call it seamless because there was a lot of challenges, but I think our customers appreciated how we handled it. I think it was done in the best way possible.

MR. WEST: Thank you. Great to have the on the street perspective in terms of what you actually dealt with and how you responded. I want to bring Congressman Cicilline into the conversation. I know you have had a longstanding interest in manufacturing and have introduced legislation to promote it. So, in terms of the COVID pandemic, what were your worries about manufacturing and what do you think the government should be doing to help out in this area?

MR. CICILLINE: Well, thank you again for having me on this panel. It's great to be with the next generation of manufacturers, Susan, Ben and John. I think it's a sign that manufacturing is alive and well in America.

I think one of the things that concerned me at the very outset of the outbreak of the pandemic was real concern about the supply chain and whether or not we would have access to the critical equipment, ventilators and PPE and testing materials. I think one of the things that was relayed during the early days of the pandemic was it was sort of a reminder to the American people why it matters that we have a strong manufacturing ecosystem, particularly in the midst of a global health pandemic. In particular, I was concerned that the president didn't invoke the Defense Production Act which was really a powerful tool to ensure that manufacturers were producing the things we needed to respond to this crisis in a very direct way. There was not federal coordination of the manufacturing of those materials and then the distribution. So, we basically had every governor, every mayor, kind of in a fight, competing for these critical lifesaving materials, driving up the cost and irrational distribution not based on where there was an outbreak or where there was need, but just based on who had the best contacts, who made the best phone call first. That, it seemed to me, revealed a total breakdown of what should have been an organized rational distribution of critical goods and being manufactured here in the United States. In response, I actually introduced a piece of legislation called the Global Pandemic Planning Act, that would require the President to report to Congress on the status of planning and logistics for the delivery of critical supplies during our global health pandemic and to describe whether he or she hasn't broken the Defense Production Act and how and why. So, I think that's an immediate tool that was really not properly used by the administration. But the impact on manufacturing has been, as John said, significant in large part because manufacturing very often is people working in close proximity to each other, touching lots of products. So, it has all of the conditions that would make the transmission of a highly contagious virus particularly dangerous and so, one of the things I think we have to do, and I've been advocating for, is to urge, and the next piece of legislation that we do, that we waive the cost share of the manufacturing is sending an extension partnership program which is a really effective program to support small and medium sized manufacturers and to also double the funding for that program. So, get of the

cost share. Double the funding so we can really supercharge American manufacturing.

Then the other thing I think we have to do and I'm pleased the vice president is announcing his manufacturing plan which includes something I've worked on a long time in Congress and that is to really modernize the Buy America provisions and close the loopholes so that we're using the purchasing power of the Federal government to actually support American manufacturers even in this pandemic. The stories I've heard from local manufacturers where we're buying supplies like masks and protective equipment overseas when manufacturers have had to stop manufacturing their own line of good and could be manufacturing and are manufacturing critical medical supplies and we're not buying it from them. It's just crazy. So, modernizing and updating the Buy American provisions to really support American manufacturing is the other thing we have to do.

MR. WEST: Okay. So, Susan, you're an economist at Western Reserve University, and you've written extensively on manufacturing issues. I know you pay a lot of attention to the supply side issues that the Congressman just mentioned. So, what do you see is the critical problems and how can we address them?

MS. HELPER: Well, it's a big question. This is really an exciting time for manufacturing. I think the contributions of people like Taco Comfort Solutions are now being recognized in a way that they weren't in America. We've kind of seen the dangers of having, for example, 80 percent of our pharmaceutical active ingredients made abroad, our masks and other forms of PPE made abroad. It's not to say that everything needs to be made in the U.S., but what I think has happened is we have gotten an imbalance that led to some of the problems that we've seen. So, I think we sort of need to think about building it back better, I guess is the new slogan. So, not just getting through this current program, but when we spend money to revive the economy, can we do it in a way that actually creates a new infrastructure and helps us deal with future pandemics. I think it's just a question of when, not if. I guess I've sort of seen kind of 3 things that we need to do.

We need to sort of rebuild supply. I think some of the stuff the Congressman mentioned and we'll talk about in the Biden plan, begin to do that, that there's a lot of market failures that mean that we don't have enough manufacturing supply capability in the U.S.

A second issue that has sometimes been overlooked is demand. You can build up. You can subsidize people to do things, but now you need to make sure that there's a stable demand for those products. Demand for masks is up tenfold. What happens when that demand falls? So, I think some of this Buy America stuff is actually quite interesting and important in making sure that companies that do build up capabilities actually have a long-term ability to make a return on that investment.

Then, third, is doing things that make sure that taxpayer money is used wisely. I think we've seen, to the Congressman's interest in antitrust, that some of the efforts -- actually there was an effort to have a cheap robust ventilator supply. A small company was interested in doing it, Newport Medical Systems. They then got bought by a large company that was not interested in having a competitor to their product. So, I think thinking about these kinds of things, demand, supply and some conditions on support to make sure it's used. That those would be at least the elements of a plan, and I think we're starting to see what that, the details get filled in.

MR. WEST: Terrific. So, Ben and John, I want to come back to you. So, going forward, what challenges do you see and how has the pandemic effected the manufacturing in terms of sales and operations? What are the changes you have seen so far that you think are temporary changes and which ones do you think are permanently going to alter the sector itself?

MR. BEN WHITE: Great question. I think, looking forward, and one of the things we did early on, we split our entire work force into two groups and basically worked on one week on and one week off so that we had the ability to minimize the exposure of employees to each other. That was really when things were picking up. That gave us the ability also too, as we reassessed our manufacturing layout, it gave us the ability to do things like put in the partitions and plexiglass, reevaluate our shop floor layout so that we could adhere to social distancing guidelines. I think moving forward, that will always be something that we think about when we're looking at a new product and what does that manufacturing cell look like. I think these types of measures will be something we need to look through going forward and it certainly drives towards our #1 goal, having a healthy and safe workforce. I think that will always be something that we now take into consideration and I think as we discussed a little bit earlier as well, the supply chain side of things. Really, kind of rethinking things like inventory levels, leveraging our

relationship with our suppliers and our backup suppliers, and leaning on things like our long lasting relationships with our core supply base, I think these are all things that up until this point were things that need to be worked on, but this really puts the magnifying glass on it and makes us evaluate it. I think it will change the way in which we approach situations like this moving forward and John can maybe touch a little more on the sales side of things now.

MR. JOHN WHITE: Yea, absolutely. I think as far as sales are concerned, there have been some major shifts in how we do business. I think it has made us think about how we will do business going forward. I think probably the largest one, coming from a sales perspective, is travel. The idea of travel and being present with a customer, if anybody has done sales in any capacity will tell you, the most important thing you can do is be in front of a customer to build that relationship, whether it is over a cup of coffee or over dinner or just to have a face to face relationship so that when or if something does go wrong, you have that rapport. It's not just I'm your supplier, you're my customer, boom, here you go.

I think for us, what we found very quickly, in the very early stages of this, it was very aggressive with out travel policy, first of all, with international travel and then with air travel and then pretty much with all travel, which was absolutely the smart thing to do. The other piece of that is your travel policy can be whatever you want it to be. If nobody wants to see you, if nobody wants to have you in their facility, then it doesn't really matter. So, it thinks it has really changed the way on the sales side that we service our customers. I think we've made a really great use of Microsoft teams. Coming into this whole pandemic, we had begun to incorporate Microsoft teams for use at Taco, so this has kind of forced that on a fast track. I think it's going to change the way we think about travel and personal visitations going forward. I think and I hope, to be quite frank, that they don't go away entirely because there is not much value to being at a customer and to see their manufacturing process and understand what their needs are. The amount of interaction we can have over these video meetings has been really, really significant, and I think in some ways, we're actually in touch with our customers now more than we were before. Number one, we're in touch quite regularly just to see what their status of business I, how have things been affects, are you actually open, things like that, but also it's so easy just to hit the video call button

and take 10 minutes and have a face to face. I think maybe going forward, maybe a customer where we would typically go see them 4 or 5 times a year, maybe you would see them 2 times a year while you make more use of this technology. I think that's probably a change that has happened and will probably manifest itself permanently going forward to some degree. I think the other thing that we've seen from the very earliest stages here, was an increased focus on forecasting and understanding what customers need and what our capabilities are. When it is running 100 percent perfectly, it's no problem. You can adjust things very early, maybe slip another order in, no problem. When you all of a sudden have reduced manufacturing capacity or challenges, you have to be really selective and you have to really know what you need and what needs to be made. I think the sales team has been very, very aggressive about forecasting and working with their customers. I think, going back to what Ben said, rethinking and rethinking inventory levels, things like that. I think the importance of forecasting, increased communication with the customer regarding their needs is going to be very, very important. I think that will not change.

MR. WEST: So, Congressman, earlier you mentioned some of the things you would like to see the federal government undertake, but it also seems like the states are starting to get organized. We are starting to see regional partnerships. States are starting to coordinate various types of supply chain issues, procurement practices in and so on. Are there economies of scale among American states where you think cooperation and coordination where you think partnership and coordination where you need up helping everybody.

MR. BEN WHITE: Absolutely. I think that we know actually front of lot of good work that Brookings has done that our economies don't stop at the State lines, that they actually operate regionally. So, I think there are a number of programs, both manufacturing essentials and partnership, and manufacturing U.S.A., which are really effective and good programs, and we ought to be thinking about allowing those to be executed regionally. One of the things that I've done, is I've introduced a piece of legislation to create the southeastern New England regional commission, which will take in kind of the economies of southeastern Massachusetts, Rhode Island and a little bit of Connecticut where is a lot of common manufacturing opportunities and clusters and be able to do some planning and some strategic

investments of the federal government to support manufacturing in that region. That's a hard thing to do sometimes politically because we measure success in terms of jobs created, in terms of economic growth within state borders or city borders. We have to sort of think about this work regionally and I think these regional commissions is one way to do it. I think it's something that we really have to create a template for really smart investments in kind of a regional plan, but I think states are recognizing the commonality of their regional economies and you know, we benefit from the maritime industry in southeastern Massachusetts as they do from maritime industries in defense industries in Rhode Island. I think the federal government has to facilitate that kind of thinking and planning and investment in the way we fund investments and manufacturing as well.

MR. WEST: Thanks for the shout out of the Brookings work. I want to acknowledge the great work our metro colleagues have done at the state and local level in trying to promote manufacturing. So, Susan, you have mentioned a number of different ideas in your writing just in terms of the need to change purchasing policies, looking at local content requirements. You mentioned the possibility of the U.S. developing a national investment bank. Could you talk a little bit about these ideas and why you think they might be helpful?

MS. HELPER: We've developed just over the last 20 years a manufacturing system that was sort of developed, innovate here, produce there. I think one of the things we're seeing is a variety of reasons that doesn't work. You don't know longer get ideas that you need to innovate if you're not producing and you also lack access to materials in a pandemic, which we're seeing right now. So, you sort of ask, well, why, what kinds of things make it hard for small business to do things like adopt industry 4.0 which is a really cool way of bringing information to bear on manufacturing and automate and get real time information. A lot of it is we have a purchasing system that's set up to really minimize unit costs and not think about long term capability. I think this is an issue, both in government and long term in private business. I think some of these Buy America and domestic content rules will be important, but I also think really thinking through what value does a product add. Maybe the piece price, the unit cost, is a little bit higher, but maybe it comes with the excellent customer service that Taco provides and that can be documented and quantified. I think thinking about that kind of thing is really important and we've

mentioned the manufacturing ascension partnership and one of the things, I think, is very important about that program, tiny as it is, is that it helps companies put together the pieces of a new and more innovative manufacturing system. It's not just worker training. It's not just new equipment. It's those two things together, plus new ways of managing, including things like taking advantage of worker knowledge on the shop floor, to where do the sensors go. What can be automated? How do you automate? The MEP has done some of this work. I'd like to see them stood up to do a bit more of this work and to then coordinate nationally and regionally supply chains. So that's a little on the purchasing.

Then to think about the finance side, one of the things, I think, that we've struggled with, small business has struggled with, they don't necessarily want to invest because they have such fierce competition. They get one chance. You make a mistake. You guess on the wrong material. You guess on the wrong piece of new equipment. You're out of business. It's easier to just let your equipment depreciate, try to squeeze your workers a little harder. That's not a recipe for long term success. So, thinking about how do you get capital to these firms in a way that isn't so expensive, and how do you get new firms, new ideas. How do you help them get started? It may be that we actually need to think about some government provision, not just as of the money, but also the expertise and the criteria for lending. So there's some really some interesting ideas about a national investment bank that I think should be explored further.

MR. WEST: So, we are in the middle of a presidential campaign and actually, just today, candidate Joe Biden released his plan to promote manufacturing. So I'd like to throw out a question and get each of your thoughts on this.

So, first on the Biden side, his plan proposes to spend \$700 billion on American products and research. This would include 400 billion for a procurement initiative to encourage federal agencies to buy American products and then another \$300 billion to support research and development. Among the particular provisions would be money for clean energy, a supply chain review that would ask agencies to buy essential supplies from U.S. manufacturers and he also wants to close some of the loopholes from Buy American requirements. President Trump also has talked a lot about manufacturing during his term of office. He has issued executive orders, for example, requiring essential medical supplies to be

purchased from American manufacturers. He's cut taxes. He's pushed various types of deregulations. So, I'd like to get the thoughts of each of you just on those perspectives, what you would like to see happen, kind of what are the strengths and/or disadvantages in each of the approaches that we're seeing. Ben, we can start with unfortunately I thought I had a chance to telling you.

MR. BEN WHITE: Unfortunately, I have not had a chance. If we're going to be adjusting policies. Either sunny or cloudy view the plan that was just put out this morning, but I think all of these initiatives are important. I think as we look at clean energy supply chain reviews, kind of just listen on the Biden Merrick requirements, these things are all, I think, if done correctly, are things that can help American manufacturers globally be successful. We need to constantly be looking at these. I'm not an expert in any one of those areas but working with our teams trying to understand. How do these affect us? How can we work them to our advantage and work on them in relationships with our supply chain, teach with our suppliers, our customers and making sure that we have a sustainable business model that will help us carry this forward for another 100 years? So, I think in conjunction with each other, they can. How wrong were these to work on them with our advantage if utilized correctly, can be helpful to our business,

MR. WEST: Okay. John, your thoughts on these plans?

MR. JOHN WHITE: That is a big question, Darrell. I think, unfortunately I had a chance to review in depth because unfortunately I have not had a chance to review it. What I would say and what I would like to see, in general, if we're going to put the money into American (inaudible) if we're going to put in the lot of good in that. If we are going to be adjusting policies, either domestically or how we do other countries as well, to protect and grow American manufacturing, I think it's a good thing and it is obviously manufacturing this panel, and to our family especially, as it is very, very near and dear to our hearts. I think the one thing I'd like to see, no matter which direction we go, and no matter what happens in November, going forward, I just would hope that the people who are putting these policies into place and the people that are ultimately going to control where this money goes and where resources go, have the ability and have the willingness to work with American manufacturers and so if policies are going to be created or if we are going to be allocating resources, let's do that with the input of American

manufacturers to make sure it's going to the right places, to make sure it's going where it's really, really needed. That would be my sort of high-level answer. I think wherever we end up going, I'd just like to go there with a lot of input from manufacturers who need the help and who also can give you the best direction, and have the best experience to pull back to a very, very low level of Taco. We've always found when we're going to be changing manufacturing process, changing a policy, changing how we do things, the first people we go to, particularly in the factory, are the people on the line, who do the job every single day, who build that part, because they know more about that than we will ever. They'll forget more about it than we'll ever know. So, I just hope that they bring in our experiences and our direct needs. I hope that was okay.

MR. WEST: Thanks for that answer. Congressman Cicilline, your thoughts on the Biden plan and either comparisons and/or contrasts with the Trump approach.

MR. CICILLINE: I think the Trump administration, has like so many areas, talks a good game, but the conduct of the administration has actually significantly undermined American manufacturing. So, it began with the president's tariff war with the Chinese, which seemed very sort of not strategic. I know I heard from lots of manufacturers in Rhode Island who were significantly impacted by the imposition of tariffs, which China seemed to have been in a better position to weather them. I think having good trade policy that actually promoted American manufacturers and American business and American workers is key. I think the other thing is the president supported and the Republicans passed a tax bump the beginning of last year that incentivized offshoring of manufacturing jobs. It provided benefits and lower tax rates to corporate activity outside of the United States. So, I think a serious revision of our tax code, so we're actually incentivizing jobs being created in American, which is a bill that I've introduced in the House and Senate. The White House has introduced into the Senate just the opposite of what the tax bill does. Instead of giving a tax incentive, it ought to be to create jobs in America, not to create them outside of the United States. I think that the investment in the area, the clusters that Vice President Biden has named in his plans, are important in emerging important sectors of our economy. Finally, I think this notion of something I've worked on with Senator Ruffy for the past couple of years is really modernizing our Buy American provisions. So, it's the case that every agency in the federal government has got to

have a way to work around these provisions for some exemption and so, they're using taxpayer money to buy goods and services, manufactured outside of the United States. That's lunacy. We ought to be using taxpayer money to support American jobs, American businesses, and American manufacturers. So, those are 4 areas that I know Vice President Biden is likely to do. I think President Trump's policy in terms of supporting American manufacturing has been a disaster.

MR. WEST: Susan, your thoughts on the Biden plan and the things Trump has proposed?

MS. HELPER: I guess, just to pick up on the tariffs, unless probably most economics, I'm not always opposed to tariffs, but I think the way they were implanted was sudden, haphazard and didn't really take into account how modern supply chains are organized, where a lot of American manufacturers really depend on inputs from China. There are some issues on that going forward, long term, and a lot of the reasons these prices are cheap is that China is subsidizing things. They're splitting their workers. They are exploiting the environment, but you don't change that overnight by just tripling the price. So, one of the things I think is interesting about the Biden plan, is that an effort to kind of coordinate and complement when you are trying to redo a whole system, you need to think about these different sides, the supply side, the demand side. So, I think, at least the broad outlines of the plan, you know, there's a demand side piece from this government procurement, and then there's the supply side piece. Let's build innovation. This is the long-term place where the U.S. needs to compete, is innovation, not just in products, but also in process. So, I think there's a promise there that of a kind of coordinated, sought of policy that we haven't seen from the Trump administration.

MR. WEST: We're starting to get questions from the audience. I'd like to get your thoughts on some of those items. So, we have a question from a law professor who lives in Egypt, El Cid Abdul Acod (phonetic). He wants to know what can manufacturers do to protect worker health at a time of COVID? Ben, do you want to start?

MR. BEN WHITE: Absolutely. It's a great question. I think at the forefront of that is something that we've tried to be very intentional about to this whole experience, which is communication and being transparent. I think making sure that all of our employees are aware of what's going on daily,

making sure they're getting regular updates and we are up front and clear with everybody about the measures that we're taking, the changes that we're making, whether it be from a policy standpoint internally, or like we were talking about earlier, the shop floor layout. I think making sure that our employees in any business are communicated to on a regular basis, that they understand what's going on, that they have the ability to ask questions and express their concerns because a lot of times we've found as we went through this, it may lead to things that we have not thought of where we can make improvements and like I said at the very beginning of this, I think the #1 goal, and many employers would probably say this, is to have employees who feel safe, who are healthy, and who come to work every day in a place where the employer can support that type of environment. So, as we've gone through all of this, again I think just the #1 thing is clear communication. I think sometimes when we first started addressing some of the things that were coming with COVID, we jumped on things in ways that maybe some people would say were being overreacting, but as we moved through and John mentioned earlier some of the travel restrictions that we put in place, things like that. I'd rather overreact now and protect our employees and see what happens when we go forward than have to deal with something further down the line because we didn't take something seriously. So, I think really being aware of what's going on globally and how we can implement these measures internally, but that line of communication is really and transparency is really crucial.

MR. WEST: John, your thoughts on how to protect the workers and I might also note you have factories both in Italy and Vietnam. I would also be interested in that international angle.

MR. JOHN WHITE: I think, as far as how to protect the health of workers and moving forward, I think most companies from the last several months have put into place several policies and several adjustments to how they do things in order to, at the very least, protect their employees, up to that point, whether that's doing A and B groups, whether that's putting up plexiglass shields between manufacturing stations, rotating people in and out of the office, things like that. I think what we can do to protect employee health, going forward, first of all, would be to remain tenacious and how we pursue these policies and keep them in place. I think this kind of a tendency at this point, everybody is getting, it's almost been five or six months since it all began. It's been a very stressful time. All day on the news,

it's COVID, COVID, COVID. Then you see a weekend last weekend where you see pictures of the 4th of July in different places around the country where people are packed together like sardines, not wearing masks. People are sort of -- I don't want to say over it. That's the wrong word, but there is a tendency to say okay, it's been going on this long. What can you do? I think the most important thing is to remain tenacious in these policies, be that, restrict travel, maintain social distancing within the manufacturing environment, if possible. So, I would say ultimately stick with it would be the biggest thing. Don't let yourself get sloppy and slip because people are tired of wearing masks or tired of having to put on gloves, things like that. Stick with it, would be my primary advice from now on.

MR. WEST: Congressman, your views on how to protect worker health in the manufacturing area?

MR. CICILLINE: Well, I think first and foremost is to follow the guidance of public health experts. I think we have agencies charged with that responsibility, particularly CDC. I think this is the moment to reinforce that we need to follow the science and follow the medical experts on what are the appropriate distances and what are the appropriate protections. We included in the Heroes' Act a provision that would require that businesses develop a plan specific to their business to keep their employees safe, applying the public health standards. I think just require businesses to think intentionally about the application of these safety standards. Taco is a great example. They did that, of course, on their own, but there were businesses that were not doing that. I think just following science, public health directives, and being sure. I think the government has to play a role in helping businesses and schools and other critical places do the things that are necessary to make their facilities safe. This is not cheap. When you have the cut down the class size to 25 percent of the students in the class so they can be safe and distant, and make sure everyone has a mask or if you have to install plexiglass and all kinds of things at a business, those cost money. So, making sure that we have resources available, either grants or loans at zero interest or direct assistance to public institutions, to help them do what we know is necessary to keep their employees safe is critical, because my experiences that most businesses want to do the right thing, they care about their employees, but the economics of it, particularly in that severe economic downturn are challenging. I think the federal government has to be prepared to play a role to

provide those resources.

MR. WEST: Susan, your thoughts on what we need to do to protect worker health?

MS. HELPER: Yeah, one thing I might add, an idea, is to require companies, at least above a certain size, to at least think about having worker health and safety committees. If this is a way of getting organized ways of worker voice about ideas of things you haven't thought of, unsafe conditions or sometimes there are conflicting incentives where the owners of the business want safe practices, but they haven't realized they've created some production pressure and in a quarter of the plant and people are being required to work too closely, but no individual really feels like they can speak up. I think this is sort of an organized body and you could make it a condition or say, in a few months, in order to get the money the Congressman is talking about, that you have to have some of these things. Maybe in a small company it doesn't make sense, but I think in a bigger company, it could really provide some real avenue for worker voice. It is good for both the companies and also for the workers.

MR. WEST: We have another question from Eleanor Wolf of the Hewlett Heritage Society. She wants to know how will the pandemic affect the move to a green economy in the manufacturing area.

MS. HELPER: I can jump in on that one a little bit.

MR. WEST: Okay, Susan. Go ahead.

MS. HELPER: I think this is another example of a place where we have a chance to build things back better in a couple of ways. There is a lot of chance to plan. While people are at home, we can sort of think about what could we do differently. There is a direct correlation between air quality and the severity of the COVID experience for people. So, I think it gives us short term reasons why we want to clean up the air. I think as we think about a stimulus, how are we going to return and get people back to work? We have 11 percent unemployment now, generally, a 9 percent in manufacturing. I think there is an appetite to spend government money. If we can spend it in a way that is also an investment in a green future, I think that would be a really great way of spending that money.

MR. CICILLINE: I agree and that's reflected in the infrastructure bill which we just considered in the House, which has a major investment in renewable energies and resiliency and it's

reflected in Vice President Biden's manufacturing plan. So, this is an opportunity to create good paying jobs in the green economy, at the same time responding to a very serious national security threats of climate change, the very serious public health threats of climate change. If there is one silver lining of COVID, I hope that it's now that people have renewed our belief in science and the danger of not responding to real threats, whether they be a COVID health pandemic or a climate. I think there is growing awareness in this country that this is both a responsibility and an extraordinary opportunity to really build an economic recovery around a green economy and a resilient and sustainable infrastructure and reducing carbon emissions and preserving our climate.

MR. WEST: Lydia O'Neal who is a reporter for Bloomberg Tax wants to know what are the biggest tax priorities in order to help manufacturing? Any of you who want to, jump in.

MR. CICILLINE: You should probably ask the manufacturers. I have my own view of what I think would be useful from a legislative perspective, but Ben or John may have a better idea of what would be helpful to their own business.

MR. BEN WHITE: I would say if you're going to start and lay out what your thoughts are, I'll hop in on the other side.

MR. CICILLINE: I think the investment tax credit is one that is always raised by manufacturers, but I think in terms of -- I mentioned it earlier in the panel. I think we have to totally reverse the existing tax structure. Manufacturers are like other businesses. They are designed to make a profit and to maximize profits. So, to the extent that we have a tax code that incentivizes them to offshore their economic activity and enjoy a lower tax rate, we have a tax code that's creating an incentive for creating good manufacturing jobs outside of the United States. So, to me, the most important thing we can do is reverse that immediately and create the same kind of incentive in our tax code to create good manufacturing jobs within the territorial waters of the United States. I hear from manufacturers a lot about the necessity of training a skilled work force, that they have jobs that are available, but they have difficulty filling those jobs because folks don't have the skills. Manufacturing is changing quickly and people are willing to improve their skills but they need resources to do it. I think continuing to invest in really good job training and skill development, so that folks can change their skill set as things change in manufacturing. I

think those are important priorities.

MR. WEST: Susan, do you want to jump in?

MS. HELPER: Yeah. I definitely think we should reverse the incentives for offshoring that are built into the tax code, but as far as other kinds of new tax breaks, I would rather take that dollar and use it to build government capability because I think what we need is this coordinated change. The Congressman mentioned the need for training. So, sometimes people say, there should be a tax break for having apprentices. I don't think that's well designed for the way costs really get incurred. When you set up an apprenticeship program, the costs are all up front. You have to get things certified. You have to design a program. A per employee tax break that continues year after year, when you're not incurring many people, it doesn't incur very many costs. It's just not well designed. I think it would be better to take that money and use it to really provide companies' assistance in those up-front costs. So, let's have a government, either state or federal, office that really helps figure out what are these apprenticeship-like occupations. Where are the courses? So, in thinking about government services, rather than more tax breaks is a good direction to go.

MR. CICILLINE: Can I just add one thing to that because I think she is — there has been a bill introduced for a number of years by my wonderful colleague Tim Ryan to that. It calls for a national instruction strategy. I'm proud to be a co-sponsor of that. I think that is something that Susan's comments would really benefit from. Rather than just reacting to an industry or an incident, actually develop a thoughtful, comprehensive national manufacturing strategy that says if we're serious about growing American Manufacturing, here are the ways we need to do it, both with our tax code with the budget about how we think about work force training and fully integrate a plan and I hope when we have a Democratic majority in the House and the Senate and a Democratic president, that will become law and then we can really have someone leading on behalf of our country, but actually a plan where there is real consensus that has been developed across the sectors, but this is how we grow American manufacturing.

MR. WEST: So, John, your thoughts on tax policy and priorities?

MR. JOHN WHITE: I would say, I would trickle back to the Congressman's first point actually. I think one priority, what would absolutely certainly be some sort of investment tax credit,

because reinvesting into a business, particularly a manufacturing business is incredibly important. We go up against competitors that are much, much larger than us. So, we are constantly trying to figure out ways to optimize the manufacturing process, to protect potential upgrade of our technology and keep ourselves very, very competitive. So, any other piece of that actually ties back into what Congressman Cicilline was saying regarding investing in our work force because as we invest in machinery and processes, things like that, you need people to run those machines and know how to do these things. My dad has sat on this panel a hundred times. The best thing, the best asset, the best thing we have is our people. So, to invest in those people, to invest in training classes for them, if they're there and they want to know how to run a steam machine or if they want to 5un anything from a business degree to English as a second language, to anything. To invest in our work force and to keep them happy and knowledgeable and at the top of their game essentially is the most important thing we can do. So, if there is some way to sort of incentives investment back into the company and to incentivize ownership particularly, to take profits and things like that, as opposed to just pocketing them, but put them into the company to help grow it and protect it, I think that's paramount.

MR. WEST: We have a question from Buckley Brinkman. He wants to know what will be the biggest permanent changes to U.S. manufacturing resulting from COVID-19. Ben, do you want to jump in?

MR. BEN WHITE: Yeah, I'll jump in a little bit. It's interesting, I think. One of the things we've been talking about a lot, this experience, going through this for the last 4, 5, or 6 months has caused us to really take a look in the mirror at some of the business practices that we have. So, one of the things, for example, that we switched to almost overnight, like I mentioned earlier, was work from home for those who could. That was a change for us because one of the biggest, I would say, benefits to take -- one of the best things about it is our culture. It's something that I think makes people want to stay for a long time. It's got a great supportive environment. Switching overnight to really a big portion of business working from home has changed the way -- I think that has changed the way we look at all of a sudden, not having to have employees, if we're hiring somebody for a certain position, if they specialize in that and they don't live in Rhode Island. They don't live in Massachusetts or Connecticut, kind of

broadening the thought process of if they live in Wisconsin, that's not a problem. We have the capability, the technology, and being able to think about that. I think kind of the way we have looked at that side of it, we will definitely change on that moving forward. John, I don't know if you want to touch on that, as well.

MR. JOHN WHITE: Your answer was awesome, but I have to admit that my audio cut out for a second halfway through the question. I'm not sure exactly what the question was. I apologize.

MR. WEST: John, the question was, what is the biggest permanent change to U.S. manufacturing resulting from COVID-19. So, we've talked about kind of operational changes, business practices and so on. What do you think will be the biggest permanent changes?

MR. JOHN WHITE: As far as permanent changes, I would say there are probably a couple. I think the biggest one that I don't see going away any time soon would be the work from home that Ben just described. We've found that people can do their job just as well, sometimes if not better, from home. So, I don't know if we'll ever go to 100 percent work from home, but I think, going forward, that practice will probably be much more acceptable in companies. Companies will be more open to it, in situations where before they may not have been. So, I think that's probably one of the largest changes. I think it's also changed, and this is coming from a Taco perspective, but I think it would apply to other manufacturers, would change the way we view trade shows and things like that, because up until January, we had our largest trade show of the year annually in Orlando, and you have some 50,000 people crammed into one building, and it's a big event. I just don't know, going forward, if we're going to look at those events the same. People will have to re-evaluate the importance of trade shows or how they approach them. That might sound like a small thing, but in our industry especially, it's a major, major issue. I think the last thing would be it's probably going to change the way we approach training. For Taco especially, training is probably an important thing. We have a staff of 4 or 5 fulltime trainers, living all over the country, who do train on-site for wholesalers and customers and things like that, and they do virtual training as well. We have had to switch to virtual training for the last 6 months. In 6 months, we have between our Taco Tuesdays, which happen on Tuesdays, Taco after dark training, which are on Wednesday evenings, and then your different trainings for different customers. We have reached out and

touched over 14,000 customers, which for a 6-month period unheard of. So, I think it's going to change the way we do training and perhaps shift from a focus on in-person trainings to a much more broad electronic medium. Once again, that's Taco specific, but I think in the industry, at least, that would translate fairly across the board.

MR. WEST: Susan, what do you think will be the largest permanent changes resulting from COVID for manufacturing?

MS. HELPER: First of all, send out to Buckley, who runs a really involved in the MEP in Wisconsin, does really great work there. I think he's going to have his hands full because I think one of the big changes, I hope, is a renewed appreciation for U.S. manufacturing. I think this renewed appreciation of the importance of risk and hidden costs of the supply chain system that we've developed will lead to that. I think then also maybe a desire to have more robustness, not just in supply chains, but even in the domestic operations. So, I was actually thinking, when John was talking about training, they give out training in work force, that people are now doing jobs that they didn't do before. Actually in Ohio, there is a company that wants to kind of start off making masks and then intentionally invest in equipment that they can make auto parts, and then shift over if there is a need for masks. So, I think that kind of robustness and what we need is financial models that help people understand how much is that real option valued. An idea I've had, I guess, is to help with that, I think we have these manufacturing USA institutes that are organized around technology. We have added a manufacturing one. We have a low power and electronics one. What about one for kind of modern management practice, so we could think about how do you take into account risk in your business? How do you involve your workers and seek input from workers? What kinds of changes in reporting relationships do you need when you put in industry 4.0, so that rather as a complement to these technically focused manufacturing USA institutes, have a management focused one that I think could really help make some of these lessons long lived.

MR. WEST: So, Congressman, we have a question which I think is appropriate for you from Jankoff (phonetic). He wants to know kind of, COVID obviously revealed a lot of problems, a lot of holes in U.S. manufacturing supply chains. He wants to know how can we make our supply chains more resilient in the future.

MR. CICILLINE: Great question. I think actually that's one of the things that I hope is a permanent change. There is kind of an intentional effort and a kind of deeper understanding of the critical nature of the supply chain, particularly for essential medical supplies in a health pandemic and obviously in a lot of other areas. We actually addressed this issue very specifically in the Heroes Act, in which we included very specific actions to try and protect the supply chain associated with COVID and the pandemic broadly. It provided that the Food and Drug Administration have enforcement authority if a drug maker doesn't provide required notifications on supply chain interruptions or doesn't develop required management plans. It permits the FDA to destroy imported counterfeit devices. It authorizes a hundred million dollars to designating national centers of excellence in continuous pharmaceutical manufacturing. It directs the biomedical development and research authority to award contracts to enhance the manufacturing capacity of a COVID-19 vaccine and to require the president to appoint a medical supplies response coordinator. So, I think the Heroes Act has very specific actions that can be taken to help protect the supply chain, but all the things we've discussed on this panel today about making sure we are protecting manufacturers, make sure we are creating opportunities, if there is a critical product that is not currently available in the United States, what do we need to do to help a manufacturing's start that line of manufacturing. Free agents for testing, as an example, where most of that comes up from outside the United States. So, figuring out what is missing. In terms of American manufacturing, what will we probably not make? What are the impediments to that? How do we help facilitate a robust competitive manufacturing sector item as well? I think those steps that we included in the Heroes Act; I think there are some important first steps to try to really focus attention on the supply chain? But all the things we've spoken about to encourage and grow American manufacturing obviously are going to relate to the supply chain.

MR. WEST: Okay. Great. Thank you. Ben, your thoughts on how to make the supply chain more resilient, and I don't know, you've already made changes in your business practices in that regard.

MR. BEN WHITE: I think John touched on it earlier today. As it pertains to our business, I think one of the crucial things, in looking at our supply chain, is the forecasting side of things, and really

being able to look at a lot of the components that we procure from all over the world, have very long lead times. So, looking at this and being able to look at dual sourcing and looking at that geographically all over the world. I think being able to learn how to build inflexibility because as things like this situation occur, it's not just thinking about the orders that we will place in the future, it's how in tactful we are looking at current day and how does that effect our pipeline. I think looking at our global supply base and we have a phenomenal team globally working on this side of things and really rethinking that flexibility side of things, diversifying and dual sourcing and the importance of the relationship with the supplier. So, in times like these you are able to work through situations together is going to be, I think, really crucial.

MR. WEST: Susan, I know you've written a lot about supply chain issues. How do you think we can make them more resilient?

MS. HELPER: These are a lot of great ideas. I think maybe one overarching thing and one tiny thing. I think overarching is to think about more supply chain collaboration. A real example of this is, in the 90's, Toyota had a sole source for a small brake part, and this company had a fire. You think disaster. Well, what happened? Their suppliers from all over the world and all over Japan, even suppliers who made things that were totally different, pitched in to help get Toyota back on its feet. So, Toyota lost like a day of production due to this massive fire. I think that kind of loyalty collaboration communication, and also flexible equipment is really important. I think that comes back. It's really different than what is taught in purchasing classes. I used to teach purchasing, actually, early in my career, and I still teach in a school of management. So, I think that one of the things that we need to do as management professors, because I think this is not necessarily something that is a role of just for government. You actually are for better shareholder value if your supply chain is more resilient. So, I think my big message is collaboration and figuring out how to value collaboration, because it's costly. So, that's the big thing. Then the smaller thing is I think there are some ways that U.S. government practice really does encourage offshoring and just a micro example of this is FDA inspections are much more onerous for U.S. facilities than they are for foreign facility. For foreign facilities, they are announced in advance, and way less detail than frequent. That policy obviously needs to change.

MR. WEST: John has a question about the work force needs. It's kind of in the context of

reshoring jobs, you know, bringing manufacturing jobs back to the United States. He wants to know, basically, if we actually do bring jobs back, are we going to have the work first, in particular the high school work force necessary to actually do the work.

MR. BEN WHITE: Can I just pop in that in kind of a high level if you don't mind, and just say this? I think we will. We will have the work force and the people out there that want to fill those jobs and want to come work in manufacturing don't have those skills immediately, train them. That is the only answer. If people want to come and fill those jobs and they are serious about wanting to work in manufacturing, that's the way we look at it here at Taco. If you want to come here and work with us, and there's a skill that you need to do that job well, and you're serious about it and you don't have that skill, we'll do everything we can to train you and give you the tools you need to work for us, to work with us, and to succeed. Maybe that's not the answer he was looking for, but I think if people want to come and do the jobs and take it seriously and don't have the skills, train them.

MR. WEST: Congressman, your thoughts on that? I know you've worked hard on work force training issues.

MR. CICILLINE: Yeah, I think this remains an important shoutout I think we have made significant progress and I'm particularly proud of the work that's been done in Rhode Island where our governor really engaged the business community in developing work force training in what used to be basically work force training programs kind of designed what they imagined what people needed and then they trained people and they would go look for jobs. What Governor Raimondo has done, which I think is really a national model, is she has brought the employers done and said, what do you actually need in order to hire folks and then she's trained these people with basically a commitment that once they get that training, they'll have a job. It's called Real Jobs Rhode Island. It's been a fantastic success. So, I think what we've learned is when good work force training programs are designed by paying careful attention to what employers need today and what they'll need tomorrow and in the future and training is designed to develop those skills, it's critical and I continue and I visit manufacturers. I continue to hear we have vacancies; I just can't find people with these skills, so the ability to hire someone who is willing to learn those skills is critical. I think this will continue to be an area that the federal government has to play a role

in terms of providing resources for good, high quality job training programs.

MR. WEST: Ben, did you have thoughts on the work force training issue?

MR. BEN WHITE: I was going to say something very similar to what John said and also kind of jump in on what Congressman Cicilline said. I think the other important part of that as well is the training is such a big piece of that. Also, it's important to train people who are looking for new jobs, and also the continued career path of people internally who are already working within our manufacturing and our company. Being able to train them for maybe those positions that they don't have the skills yet, that will create jobs as well, because as people move up, there will be vacancies that will need to be filled. That environment of training and making sure that it's training that will help perpetuate a career path and growth for employees is going to be extremely important, and anything we can do, as we talked about earlier, with some of the investment tax structures and things like that, being able to support those training programs, as at Taco we have always been extremely passionate, by starting at my grandfather's, starting with my dad building on it tremendously. Training is so important. So, whatever we can do to continue to train our workforce, the more the better.

MR. WEST: Susan, your thoughts on how we can improve work force training?

MS. HELPER: It's really great to hear Taco's attitude toward training, and I think, alas, it's rare. I think it's a potential really great area for a business government collaboration. One area that I think is sometimes missing from these discussions of skill shortage is wages. You really want somebody who is going to show up on time and want to embrace learning new things. Well, they need to have money to afford adequate transportation to feel like their kids are well taken care of, et cetera, and you are also in competition. So, I think the idea that you could get a worker with all these skills, and I think Taco is very different, but I've talked to many manufacturers that are kind of mystified about why their workers are being paid \$10 an hour and don't have these skills they're looking for, the soft skills, they say. I think it's sort of like expecting n to find a Cadillac or a Lexus for \$10,000. You have a worker shortage or a payment shortage, in that stage. So, I think the training, upgrading and then the wage upgrading also has to happen in turn.

MR. WEST: So, Emily has a question. She wants to know how can we make it easier for

firms to adapt to rapid industry changes. We know that there is a lot of transformation taking place based on COVID and the need to protect workers and need to train them better, but then we also at the same time having changes in business models. There are technological changes that are taking place. We're kind of moving to high tech and advanced manufacturing. So, how can we make it easier for firms to adapt to a world that's changing very rapidly right now.

MR. CICILLINE: I would say that sort of existing competitive model is creating incredible incentive for businesses to figure out how to respond to changes in technology and innovative new materials. I think the Biden plan provides for significant investment in research that I think the government can play an important role in facilitating the development of new technologies and new materials and we're doing that in our infrastructure with kind of new and innovative materials. I think we can do that, but prior to this is also the way our free enterprise system works, is that there is an economic incentive for people to figure out to stay competitive and be a successful business. Probably Ben and John have specific ideas on that.

MR. BEN WHITE: Interesting. That's a great point, Congressman. I think, to build on that a little bit, thinking about how we adapt, I think in certain situations, I don't mean to go over this as an example again, but looking at the work from home structure. That was not something we ever really implemented before this at an extensive level. I think kind of, as my dad says sometimes, unlearning things, right? We are wired a certain way that this is how we do things and this is how we are going to move forward. I think allowing ourselves the ability to unlearn things because we're wired a certain way or that's how it has always been. Looking at ourselves in the mirror a little bit and understanding, and this example, having to do it overnight essentially, allowed us to learn that we were able to do it successfully and also learn what parts of it did work and what parts of it didn't work. I think part of that structural work across the board in terms of looking at it from everything from work from home to technology on the floor. There are just certain areas where as we adapt, it's going to take not only the people who are experts in those areas but also, and John mentioned this earlier, working with folks who are going to be doing those jobs on the floor and finding what ways work best for, because it's not going to be cookie cutter business to business. It really will be important to learn how different technologies and different business practices

work well and efficiently within individual businesses and their different practices.

MS. HELPER: I would jump in and say I think what we need is kind of a mix of competition and collaboration and that free enterprise works well, but if you compare sort of what a small business like Taco does and has to do in the U.S. with a maybe similar business in Germany. MIT Professor Susan Berger talks about American firms are kind of home alone, whereas in contrast, Germany which is a very wage, higher wage country than the U.S., yet has almost double the percentage of their GDP for manufacturing, how do they do it? It's because they have the government's support for applied R&D in the Fraunhofer Institutes that the Manufacturing USA is modeled after. So, there's a support for applied R&D. There is support for long term finance from kind of government, public, private partnerships. There is also work force training that is provided in collaboration with employers' associations, unions and government. There is co-determination for at least the bigger firms to kind of make sure that the business is operated for a variety of stakeholders, not just shareholders. I think these things together really help German small firms, the backbone of the German economy. They make them very competitive internationally. So, thinking about how some of those lessons apply to the U.S. economy, I think that really this pandemic has spurred and we see it in the plans the Congressman has mentioned and the plans that Biden is proposing.

MR. WEST: Nicolette Womack (phonetic), who works for an organization called Future In Design wants to know about the cost differentials between moving jobs overseas versus keeping them in the United States, and in particular, wants to know the impact of COVID on that cost differential. Is COVID and other changes that are taking place now going to increase or decrease those cost differentials and how are you thinking about that, in terms of future activities in this area?

MS. HELPER: I can jump in on that because I think that's a case where I think companies have actually made some mistakes. Prices in China looked so attractive. Those prices have come up. They also were accompanied by some hidden costs that company accounting systems are not well equipped to calculate. So, how much does it cost miscommunication that leads to the wrong product or the supplier substitutes a cheaper material and you weren't there on site to catch it. How do you value all of those hidden costs? There was some work by Harry Moser, the Reshoring Institute that has some

calculators that did get some of that. I think the cost differentials are far smaller than there often seem to be. Then I think what does COVID do? I think there are 2 possibilities. One is it makes everybody aware of the risk so that when you factor in the risk that you won't get any supply at all, then a local supply looks more attractive. I think on the other hand because China has done a better job. They had their pandemic early. They've done a better job of curtailing it then we have, there are manufacturers who are up and running, they're are not incurring some of the slowdown and reduced capacity that responsible manufacturers like Taco who we're seeing who are keeping their workers safe. I think that it's actually a time that policy is super important to take advantage of his resolution safe. You had better be perfect in our realization of risk and make it last long-term.

MR. WEST: And, Congressman, I know you have already talked a little bit about tax incentives that basically encourage companies to offshore. So, I'm just wondering how do you see the impact of COVID on these cost differentials between having jobs aboard versus having them at home and what can we do to reduce those cost differentials?

MR. CICILLINE: I think a couple of things. One is there is actually a more fundamental question about whether or not you can move certainly workers from the United States to places around the world. There are existing travel restrictions right now. So, there is actually a kind of logistical question as to whether or not you can actually move an operation that includes moving personnel, which is a whole separate challenge, but I think in that, we have to be concerned about is companies that are going to want to insure that they are keeping their workers safe and that there are countries – this seems kind of odd coming from the United States, because we have failed in very significant ways to follow the science. So, it seems a little presumptuous to be saying this, but we certainly want, as a matter of policy, to be sure that we're not allowing American businesses to benefit by sending an operation to a country that maybe doesn't have in place sufficient worker protections, and therefore, the cost to that company is less. So, we have an additional kind of thing that we have to be sensitive in the global health pandemic, but I think, again, to resort to the earlier comment that the principal way we have to effect the economics of moving jobs outside of the United States, is through our tax code. We ought to intentionally another job overseas. Then we ought to be willing to use the tax code to recreate or use those incentives. So, at the

very list, to remove the opposite incentives, but encourage them to bring out shops overseas, because that's a part of the calculation, is what's the implication for my tax liability as a business, but I think COVID is laying out another challenge that we just have to be very sensitive to, that there isn't some country that maybe has less thoughtful restrictions on their safety. And it becomes cheaper to operate there in the middle of the global pandemic.

MR. WEST: Ben or John, any of your thoughts on jobs in the United States versus jobs abroad? Many of your jobs are located here. You do have a couple of factories abroad as well.

MR. JOHN WHITE: I would say that we do have manufacturing facilities, several in Europe, also a stainless-steel factory in Vietnam. They are facilities that we are very, very proud of, and they are both parts of our supply chain, but as far as taking jobs that are currently in the United States, and moving them out of the states, offshore somewhere, particularly right now with what's going on, I just don't see that as being a liable. I'm speaking primarily from a Taco perspective, but I just wouldn't see that as being a viable option for several reasons. #1, just the very logistics of being able to find another location, travel to and from, the logistics of that piece of it, finding workers to do the job, with travel restrictions and what's going on right now, I just don't see that as being a particular easy task. I could be incorrect, but once again, that's just my kind of take. I think once again, from a Taco perspective, at the very least, we're very, very proud our primary product lines are made in America, have always been made in America. That's part of our brand. It's part of what makes Taco, Taco. It's part of what I think creates a lot of trade loyalty, you know, with the heating and cooling contract in trade, with our OEM customers as well. We are very, very proud to make our product in America and support 500 families here in this country. I just don't think any time would be a good time to do that, but especially now, when people more than ever here in American are hurting and need these jobs. My thought would be absolutely not.

MR. WEST: We just have a few minutes left. So, I'll ask one final question, which comes from Carol Thomas of NIST, which is the National Institute of Standards and Technology. This person basically notes that we regularly recognize the power grid, the electrical grid, as a vital and critical infrastructure in the United States and we devote a lot of efforts to protecting that. Carol notes that we don't bring that same mentality to the manufacturing grid and basically wants to know if we should start to

think about the manufacturing grid in a similar way to what we think about the power grid as a vital and critical infrastructure.

MR. CICILLINE: Absolutely. I think we have known for a long time. Maybe people haven't articulated it often enough that having a manufacturing base is essential to our national security, to our ability to protect public health, and we ought to be thinking about the necessity of protecting, promoting and strengthening our manufacturing ecosystem because it is essential for the survival of our country and our democracy. Having the privilege of representing the state that was the birthplace of the American industrial revolution, I think we can speak with some authority on this, but yes, absolutely. We ought to treat it that way. That's why we ought to have a national manufacturing strategy and why we ought to have policies in place that actually intentionally calibrate where the gaps are and identify the gaps in our manufacturing economy and supply chains that are essential for the defense of our country and the protection of public health and well being and make sure we are intentionally investing in filling those gaps. I think that's a great way to end this panel and an important point.

MR. WEST: Susan, your thoughts on manufacturing as critical infrastructure?

MS. HELPER: I would agree. I think it's a great analogy. I guess I think it's important to think about building our critical infrastructure in the U.S., and also sort of what is it we want to still want to be buying from abroad that we're not going to be 100 percent U.S. focused, but I think this metaphor of the grid and the interdependence and the need to invest up front to prevent calamity later. It's a very helpful reminder. So, thank you.

MR. WEST: Okay. On that note, we are out of time, but I want to thank Ben, John, Susan and Congressman Cicilline. I really appreciate you sharing your thoughts. COVID certainly has been a big challenge for the manufacturing sector as well as the country and the world in general. It will be interesting to see which of the changes, which of the innovations that we've seen so far will turn out to be permanent features of the sector going forward. So, to our audience, thank you for turning in. We appreciate your interest. Thank you very much.

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