Transcript of *Fed Listens:* Transitioning to the Post-pandemic Economy Part 1

CHAIR POWELL. Long time of virtual events. It's also, I'll point out, this is the first time we've had a full Board of Governors in nine years. So, to have the seven of us here, it's the first time we're done a meeting like this in seven years, so in nine years, so it's terrific.

So, this, these sessions started just a few years ago, in 2019, in what turned out to be a very different time. They were valuable then, and we continue to benefit from them as we've navigated the pandemic shutdown and the path to recovery. So, we started with listening sessions around the country that brought together people and organizations representing businesses, low- and moderate-income communities, workforce development enterprises, employee groups and unions, community colleges, retirees, and many others. We wanted to hear directly how our monetary policy decisions were affecting people's daily lives.

So, then the pandemic comes and upends everything, the way we work, live, learn and conduct business. And we kept these conversations around Fed Listens going. And we thought we gained valuable insight, which continues to help guide our policy decisions. And I also think we, you know, we delivered good transparency about how the Fed works to the American people through this process as well. So, these events have now become a permanent fixture of our broader outreach. And my colleagues and I remember, I'm sure we remember each one of these events that we've been part of. They're really, the real-life embodiment of our policies and the way they affect the people that we serve. And they do inform our thinking as policymakers. So, do we continue to deal with an exceptionally unusual economic set of disruptions.

As policymakers, we're committed to using our tools to help see the economy through what has been a uniquely challenging period. The insights you share in these events help us to hone in on the challenges and opportunities that are shaping what we might think of as the new normal of the American economy. And it will inform us in, as we try to get there. So, my colleagues and I are very happy to hear from our participants today, to host those of you who are tuning in to listen, and to do the work that we do on behalf of all Americans. Thank you. And with that, I will turn it over to Governor Bowman, please.

GOVERNOR BOWMAN. Thank you, Chair Powell. Good afternoon, everyone. And I'm so pleased to be here with you all today in person to moderate today's discussion. And I just want to express my thanks to all of you for your willingness to travel to Washington D.C. to be with us here today for this Fed Listens event. Over the past year, we've held a dozen Fed Listens events across the country hosted by our reserve banks. And we found these conversations to be a very valuable resource for us as policymakers. Hearing directly from people in different communities about how you are experiencing the economy helps provide important context for the economic data that we consider. These discussions help us develop a richer understanding of how economic conditions are impacting people in their businesses and everyday lives. And it helps us think about how we can best achieve stability and support for the economic well-being of all American families.

Today and in other Fed Listens events over the coming year, our intent is to shift the focus of discussion toward understanding how the pandemic experience has reshaped the economy and the workforce, and the challenges and opportunities that we will face during the transition to the post-pandemic economy. So, with that, let me turn to our first set of panelists who bring with them direct knowledge and experience of how the economic landscape is evolving for U.S. businesses. They represent organizations that includes small businesses, manufacturing, supply chain management, and the hospitality industry. I know that all of you have experienced firsthand the extreme economic and financial hardships brought on by the pandemic. And during the economic recovery that has followed, you've likely also seen rapid and substantial changes in supply and demand conditions in your industries and in the communities where you live and work. Given those lived experiences as business leaders, we are especially looking forward to hearing each of your perspectives. And as we hear from each of you, I'd like to invite my colleagues to follow up with any questions that they may have.

So, let's start with our first panelist. I'll introduce Tom Henning. Tom, thank you so much for being here with us today. Tom is the CEO of Cash-Wa Distributing, a wholesale distributor of food products for convenience stores and food service establishments in the Midwest and the Great Plains region. Cash-Wa began in 1934, delivering candy to local grocery stores in Kearney, Nebraska, and the company now manages an inventory of over 20,000 products. Cash-Wa has remained privately held by the Henning family, with the second and third generation family members involved in the business today. So, Tom for our first question, could you please describe how the pandemic changed the demand for transportation and warehouse services, and to what extent are shortages of material and labor still affecting your business and industry?

TOM HENNING. Thank you. The pandemic changed demand for transportation and logistics services in some manners that were expected, and some that were unexpected. After the pandemic, we expected a fair amount of pent-up demand that would be released. And it was. In fact, probably the demand that existed out there was greater than what it was pre-pandemic. But what wasn't expected next, before the pandemic hit, was the number, the demand for workers would exceed the supply by a larger margin than what existed pre-pandemic. The size of the workforce became much smaller than it was pre-pandemic. We also believe that many left the workforce and, for a variety of reasons, and we were wrong on that too. We really thought the workforce would grow. There was a shortage of truck drivers and warehouse workers prior to the pandemic, which the pandemic further exacerbated. The shortage of truck drivers before the pandemic was estimated at 61,000 drivers. Today the estimated shortage is in excess of 80,000 drivers. The shortage of drivers was an issue then, and it will be a much bigger issue now. And the prediction is it will be an issue in the future. We've seen some estimates that the shortage will double by the year 2020. And to give you an idea of the size of the driving force that is out there the universal truck drivers today is 1.53 million drivers. So, you take, you know, a 5 percent shortage, a 6, 7 percent shortage, I mean, it's going to be significant out there. As a real result, the cost of labor has increased significantly for everyone in the supply chain. With the supply of labor down, the competition for drivers heated up immensely. There was an extreme amount of pressure on the transportation and logistics side, and still is, and probably will continue to be for the foreseeable future. In order to attract and retain drivers, our company raised our wage rate three times in 2022 so far. In 2019, we gave all our employees free health care. And then we gave all our drivers and warehouse workers retention bonuses. If they stayed with us to the end of the year, they would get a bonus paid out on the 30th of January. And that did much to solidify the workforce. Then there were the supply chain issues. And the shortages of products we sell every day from our supply chain vendors was significant, and still exist at a high degree today.

Prior to the pandemic, and we measure our inbound fill rates from our vendors every week. We have a number of metrics that we utilize every week. Our inbound fill rate from our vendors was 99.2 percent. So, for every 100 items that we would get in or we would order, we'd get 99.2 in. Our inbound fill rates, right after the pandemic started, dropped down to about 55, 60 percent. By December of 2020, it was up to 90 percent. And in 2021, we had a pretty good start. And then it dropped to 78 to 80 percent. And this year, it was probably in the 80 percent range, 82 percent range. And for the last ten weeks, it has been running 90 percent, which is good news. We changed our inventory philosophies because we had many customers out there that depended on us for products. So, we started loading up our inventories. We used the popular inventory philosophy of JIT, just in time, then we changed it to JIC, which is just in case. And so, we're over inventory. But those people need products. A restaurant who has got an event planned for a Friday night and you make a delivery Thursday, and the product isn't there, he's in trouble. And it's all, our business is all about customer service. As a rule, today, most of the time we don't know what we're going to receive from the vendor. And which is kind of unusual. There are many challenges for the vendor community out there. A lot of it has to do with raw materials, they have labor problems also, they've got priorities on certain lines that they're producing. And so anyway, most of the time we don't know what we're not going to get until the truck unloads, or we might have a call from that vendor, which is a switch from the norm. And the timing of deliveries is probably not as great as it was pre-pandemic. Since the pandemic began, our vendors have eliminated over 900 items that we no longer have. And especially in the convenience line that's where we were really notice it. You know, between wages, worker shortages, the price of fuel, and the supply chain challenges, our costs have really, really skyrocketed. We believe and have gone through our numbers and look at the inflation numbers, we've looked at, we look at our inbound freight rates, understanding that we get probably our products from growers, from shippers, from manufacturers. So, they have freight into their establishments, and their freight costs have increased. We have got freight from their establishments to our warehouse. And then we've got charges, freight charges basically, that are built into our pricing to our customers. I, and we've been trying to calculate what percentage of the food inflation is relative to transportation and logistics. And we've got kind of a consensus

between all of us, that probably 38 to 45 percent of the food inflation that we're feeling right now is become, because of logistics and transportation. It could be greater than that.

We do a cost index report on our total product mix. And we do that every week. We started doing that about 25 years ago. And because obviously you've got to have, you've got to have growth. And you've got to have organic growth. And the difference between the growth you're realizing every week and inflation is basically organic growth. So, our Cost Index Report, and I've gotten numbers from, I think since '19, since 2020, indicate where we've been, the path we've been on. This last week, our inflation rate was probably the lowest it's been in, I'm going to guess, probably four or five months. It was down to 10.3 percent. But yet, compare that to what the inflation rate was the same week a year prior, our total inflation from 2021 is probably 22, 23 percent, in that range. So, we're seeing some drop there along the line. We're also seeing some softness in the marketplace. Which, you know, probably is indicative of why the inflation rate is lower.

On the other side of the coin, we still have increases coming through. We're still struggling with product shortages and labor. Product shortages are occurring for a variety of reasons. One of the big factors is going to have an impact on inflation, probably yet this year, and probably next year, is the drought we've been experiencing. I can tell you right now, and we hear this from the potato growers, we've seen the price on, what we call Baker's potatoes, double in the last couple of weeks. And this last year the potato growers in the Idaho area where, which is really the prime country for growing the kind of potatoes of food service establishment likes to have. They knew they weren't going to get water. So instead of planting potatoes, they planted wheat. And so now there's going to be plenty of wheat that comes out of there, but the potatoes are going to be thin. There's an extreme drought that's hit in California. And California is a big producer food that we consume. One of the products we're not going to have this year is going to be pears. I remember in 2012, when the drought hit, and we sell to a large number of school districts, we imported fruit, fruit mix. We imported peaches from Israel. And Israel has, and that was probably the only place, you know, some of those products were available. So, we may be in that same boat here down the road. Tomatoes are a little bit on short supply. The other thing that's happening, we're in the Corn Belt of the country, along with Iowa and Illinois, and we've had a lot of drought there. We're finally starting to get some rain. One of the things that happened last year, and you've read about this, and you heard about it, the price of, because of the war in Ukraine, the price of fertilizer, nitrogen, foundation phosphorus just went off the charts. Nitrogen went from like $200 a ton up to $930. I know for a fact there were many farmers out there that were doing a balancing act. How much less of this can we use and still grow a crop? And what does that add to my costs? So, my guess is going to be that we might find our production of maybe corn and soybeans maybe down a little bit this year. And depending on what happens next year, and the experience factors they've got there may, you know, have an impact on whatever some of the commodity prices are. A beautiful part in our area of the country is the cattle market is good. And we're starting to get a little bit of rain now. But if you look around the world, you go into South America, you go into China, you go into Europe, and it seems like every continent is having their share of a drought. And so, this might be a factor all in the future for food production, and especially the near future. That's just a personal opinion. Labor is still an issue. The driver pool is still far from being adequate. We have a driving force of 250 individuals, and we have positions we work to fill every week. There was a time during the pandemic we were short, times we were short 20 and 30 drivers. We have one supervisor for every ten drivers. And they drove all year. They drove vacation routes, time off for other drivers and the like. Sorry about that. I forgot to turn that off. Now if I can find it. We've all been there. Sorry about that. Interesting ringtone.

GOVERNOR BOWMAN. Maybe to our second question, which is about what your business outlook for next year.

TOM HENNING. I was just going to get into that.

GOVERNOR BOWMAN. OK, great, and other challenging issues you might be facing and expecting to face.

TOM HENNING. You know, our business outlook for next year is good, I wouldn't say it's great. First off, we're, we sell commodities. Our company was founded in 1934. And that was during tough times. Yes. It was founded 1934. And the products we sell are really in a sense, recession proof. They're, people have got to eat. So, we're looking for probably a fairly decent year. On the other side of the coin, there's going to be casualties in the marketplace. And we could have some short-term challenges out there. And the way we're dealing with that is interesting. We're working with, we're working programs right now to keep our customers profitable. And we're reaching out there because I mean they're the lifeblood of the organization. And I think during the recession in the '80s there were a lot of folks that didn't have a lifeline. Communication wasn't great. So, we're reaching out to those folks now. We need to see them through this thing. And it's not a matter of extending them more credit, it's not a matter of making, giving them some type of stimulus along the way, it's helping them better manage their business and make it more profitable. So that's going to be one of the challenging issues we have.

The other challenging issue we really have, and this is critical. If there's a, I think there's rough, I can't tell you exactly, there's over two billion trucks in this country. We have not been able to upgrade our rolling stock or rolling stock for probably two years. We have 250 tractors.

We have 400 trailers that we need to make the deliveries. We haven't been able to acquire a new tractor since November of 2018. We typically replaced 10 percent of our fleet every year. The last tractors that we purchased in November of 2019 cost $106,000. And it's pretty much a standard product that we buy. Got five coming next week that are $165,000 a tractor, 40 percent increase. Plus, we've got to pick slots now. We'll have, we're guaranteed kind of halfway of having probably 20 tractors, we really need 50, we're guaranteed to having 20 tractors in 2023. So, we're going to spend probably five, six, seven years getting things caught up in our fleet. The cost of putting trucks on the road today is very significant. It's gone up right around $80,000. So that's going to have an impact on transportation total. And when you look at the number of trucks in the country, and the options aren't great. We had a number of trucks sit this last year for seven, eight days, because we didn't have microchips. They were 2017 -18 models. The parts availability, tires is one big thing. On trailers. insulation, we had trailers we ordered two years ago that we finally got in the first part of this year. Those went up 40 percent. So, 40 percent sounds like probably an average cost increase that we're going to see with rolling stock for, you know, any operation out there. So, I think I'm getting down to the end.

GOVERNOR BOWMAN. How does that inflation and cost for these necessary replacement items, how does that impact your outlook for going forward or changes to how you prioritize expenses in other areas?

TOM HENNING. One thing about it, you got to have the cash flow to do it. And you've got to have, so that will be the challenge in, you know, development of planning a business plan, which we will do. I think, and our company is sound and solid. I don't see a problem there. But I do look at other companies in the industry and I think they will have some challenges there along that line. And there's some options out there that they can certainly use. But it's going to be a challenge. We spend more money today on just maintenance. You know, a vehicle gets so old, and you have a problem. The other thing we need to do that's going to be important is we need to get the manufacturing of a lot of those component parts back here in this country. And I can give you a list of things that we have to source outside of our country that put us really in somewhat of a predicament when it comes to keeping your trucks on the road.

GOVERNOR BOWMAN. Thank you. We'll probably follow up with you to learn a little bit more about that. But I'd like to ask my colleagues if they have a question.

CHAIR POWELL. Yeah, just a couple, one narrow, one broad. The first question is, are you able to pass these costs along? You obviously have been hit by, you know, costs right across the board. And the second thing is really do you feel like we're getting through this process? That there was enormous disruption to your business and many others, and all these costs increases, and shortages and everything. Do you feel like, I guess there's not that much progress with the drivers, but do you feel like we're getting back to a better place with the suppliers and the customers yet? Or is there a sense of progress?

TOM HENNING. I think there is a sense of progress, we're making the move. And I think moves you make are extremely important. And I think that'll get us in the right direction and applaud you for it. I do think that we're moving maybe a little faster than what I thought in terms of the economy and everything. And so no, I'm confident we're going to get there. We might be, the only thing I'm not confident in, I remember when the pandemic hit us, they said, oh in 30-, 45- or 60-days things will be back to normal. I think what we're encountering right now is going to take a period of normalcy. It's going to be probably two, three years off, four years off maybe. We've got to get caught up. It's not going to happen overnight.

CHAIR POWELL. And on costs, you've been able to pass those right along?

TOM HENNING. Yeah, yeah, we have. And the dollars we work with are enough and the customers really don't have a choice. They don't have a choice. We can't lock in old pricing, unless they've got contracts somewhere out there. We can't lock that in. And so, they end up having to pay it. They're so voluminous right now that part of the problem is, you don't know what the cost is. You asked me what the cost to eggs were, I could tell you probably in a few minutes, because someone just told me what they were paying here a little bit ago. But you know, I mean it's fast and furious.

GOVERNOR WALLER. So, despite higher prices, demand is still there?

TOM HENNING. Demand is still, Demand is still there. And I suppose that's a question of the amount of money that is still flowing out there, you know, in the economy. The bad thing is, it's going to be the lower income people that really take a beating and we've, you know, anyone that's in production, if they're in sales, if they're in manufacturing, whatever the case is, their salaries have kept up, drivers and everything. But we've got a layer of people out there that haven't had a lot of opportunities for increases. In fact, right now one of the things we are doing is taking everyone that hasn't had an increase and figuring out how we can give them one, and how we can give them one that's substantial enough. And so that's going to be a challenge probably for everyone down the road.

GOVERNOR BOWMAN. Thank you very much, Tom. We appreciate your perspective. And we'll move on then to our second panelist.

TOM HENNING. Thank you. Panelist

GOVERNOR BOWMAN. Cheetie Kumar. Cheetie is the chef and owner of Garland, a restaurant and performing arts base in Raleigh, North Carolina. Cheetie's a self-taught cook who studied recipes while pursuing a career as a guitarist in several rock bands. She was a semifinalist for the James Beard Award's Best Chef in the Southeast from 2017 to 2019 and was a finalist for the award in each of the past two years. Cheetie participated in our Board Fed Listens event last year, and where she shared compelling stories about the challenges that she faced running a restaurant business during the pandemic and in the early recovery period. Cheetie, thanks so much for being here with us in person this year so we could actually meet you face to face, so that you can share also your perspective on how things have changed since last year. So, our first question for you is about how your business has changed. Actually, since we spoke last year, how does customer demand now compare to what it looked like before the pandemic? And have you seen changes in dining patterns that you think could be long lasting?

CHEETIE KUMAR. Thank you, Governor Bowman. And thank you for having me back. It's a pleasure to be here. So, our restaurant, music venue, bar complex is one building that we have been paying rent on since 2010. And we closed our doors at the end of August. So, you know, there were many, many factors leading to that decision. And most of them are really, you know, I want to say at the outset that I'm a restaurant owner, I'm a chef. And we're working on a new project. I am speaking from my perspective as an independent restaurant owner. Restaurants are ubiquitous. You can eat at a fast-food chain: you can eat at a fine dining chain that's in airports and hotels all over the country. Their perspective is going to be very different than mine. And I almost wish that we had a different name for our sector of the industry, because our challenges are unique, and the way we approach those challenges are very different, because the math is very different. So, for us, so many factors led us to decide to close our doors. And the main thing is that, you know, dining patterns have changed. Our restaurant has been located in city center of a very small city, we're the capital of North Carolina, and we're surrounded by government buildings and, you know, law offices, a lot of tech companies, architects, you know, small firms of that nature. We relied on presence in that aura, you know. People would come to lunch and whether they ate with us or not, they were aware that we were there. There was a mostly, you know, professional white-collar workers. Well, they didn't work downtown anymore, and they discovered new eating habits, they cook more at home, they got food from CSA's (Community Supported Agriculture) farmers, which is awesome. They've discovered their neighborhood restaurants. And they just approached dining out differently. And they didn't maybe want to make a trek downtown and struggle to find parking and navigate construction that has been ongoing. Construction has not slowed down from my perspective. In fact, things take longer to build. And I know this because we're building out a space right now for our new project. So, the project starts, and then you wait two months for an electrical, you know, a little breaker switch or whatever, two months. Or for a meter base, which were just nowhere to be found, or copper or whatever it is. So, we're not the only downtown that has a lot of construction just sort of dragging on and on. And that doesn't really invite people to come to your restaurant, right? I go to Nashville, and I see it streets are dug up for years, and there's a restaurant right behind that, you know. It's very easy for people to say, let's just go somewhere else and to discover new spot and they go there, you know. And there's, there are a lot of options when it comes to dining out and dinner and how you approach your food for your family and for yourself. So, we're very cognizant of that. And that's very mercurial kind of situation.

And, you know, during the pandemic, all restaurants I think were faced with decisions on how to pivot, you know, that P word that keeps rearing its head. And so, we all tried things that were completely outside of our normal way of operating. Fine dining restaurants started doing meal kits and take out and so you could get, you know, maybe you were mailing something from Goldbelly. So, we're doing things that are completely different for us. We're not built out for these kind of operations, but we did them. And so, you start thinking about different ways to operate. And the consumer is kind of connecting with you in a different way. So, things are still really much, very much in flux. I don't think that we've settled into what an independent restaurant looks like, and what this industry looks like. And I don't think that we're going to get there for another three to four years. But in this meantime, you know, people who have one or two shops can't really sustain this much change and these many losses for that long. If I had a hundred shops, you know, making a very small profit or very small loss, your kind of, it's an aggregate, you're looking at the health of your total business. But for us, several weeks or several months of, you know, what are pretty big losses for us, very difficult to navigate. So we're, you know, we're trying to, within our footprint, within the menu that we are known for, within the type of service that we do, the way our dining room operates, how many people we need to work in the kitchen, how many people we need to prep, how many people we need to get a guest from the door to, you know, the table, and then what happens after they place their order. And all of those little steps, restaurants are basically dependent on a series of repetitive steps. And all of those are very time sensitive. There's no malleability. There's no work from home. There's no take your time. Because if the guest has a bad experience, they'll have lost forever, right? And if you don't know that that's happening, because as an owner operator you're also working, you're not, you're no longer just overseeing. You're washing dishes, and you're cooking, and you're prepping, and hosting, and bartending, and we've done all, my husband and I have done all of these things many times over the last two years. You're going to miss that little, those details. And that kind of, all these little cuts kind of cut down your business, and they cut down the level in which you really want to be operating at. And that the guests, you know, expect. And that's not to say that we, you know, I think we did a really good job. But it's, you know, it's exhausting.

We're to two people. We're a family operation and places like ours, you know, our staffing situation has been just like Mr. Henning eluded, it's always a difficult industry to staff. But now it feels impossible sometimes. I do feel like it's getting a little bit better.

But, you know, we've lost a lot of our young people who we might have considered as career hospitalitarians. They maybe want to get a job in tech sales, or go back to school, or maybe become a nurse. Well, that would be an ideal way to go. But, you know, we can't really compete with those kinds of benefits. We can't compete with not working at night. We can't compete with work from home. We, you know, we can only offer so much paid time off. And that demand kind of gets sucked in by or, you know, completely obliterated by people getting COVID.

And, you know, so from the start of the pandemic, until this May of 2022, we had maybe three people with COVID. And between May and August, probably 80 percent of our staff had COVID at one point or another, myself included. And we are very careful. We test all the time, we masked and everything. So, you know, the way the pandemic is affecting day to day life isn't as data driven as it is now, it's just a reality. Right. So, if a cook is out for seven to ten days, I mean, in 2019 they'd be like, you can't do that, that's unheard of. Like what do you have, you know, the measles? Like what, that never happened. But now we have to sort of think about how many people we need with those contingencies built in. But yet the cost of each person's hourly wage is, you know, 15, 20 percent higher. Our revenue is unpredictable, because of the way our demographic in our part of the city is. And if there's a variant that was raging, that's more, that was more of an issue maybe last year when it was, now it's just everybody gets COVID all the time, it seems like. So, it's not this like wildfire that, you know, ebbs and flows, but we've had to sustain the losses throughout that time.

So, we have our labor costs going up. And then, you know, your question, Chairman Powell was, can you pass that increased cost down to the customer? Well, we're the customer, we're the end game. And we can only raise our prices so much. So, you know, when you go to a restaurant, everybody goes to a restaurant, and they see a chicken dish or a pasta, an entree, that maybe previously in a nice restaurant was $28, well now it's maybe $34. But you're not going to pay $45 for it. I mean, you're just going to say that's insane. I can make that at home. And, you know, you think you can, some things you can and some things it may not be quite as good, but it's still dinner, and you're going to be able to survive, you know. So, there's, you know, there's sort of this like, we reach a ceiling of not being able to have anywhere to push those costs for us down. So, you know, we see fuel surcharges on our invoices from deliveries. And, again, as an independent restaurant, I'm a chef operator, I make creative decisions anyway, about how I cook, what I put on my menu. I work with a lot of small farmers. But they're leaving too, you know. They're getting tech jobs and web design jobs, because it's hard for them to find somebody to help harvest their crops and bring them to us at, you know, it's a small operation. So yeah, I mean I'm not sure if that directly answers exactly your question. But there's so many factors that go into a very just simple decision on where am I going to have dinner tonight. And it's everything from your location, what happens in your neighborhood, where do you live, what's around you? How much are you prioritizing, supporting local? Are you feeding a family or are you, you know, a young couple with disposable income? You know, who is able to operate? Is the restaurant that you normally go to able to have all of their sections open, or did four of the seven servers that they have call out today? And so, you still have to open but you can only sacrifice so much of what you can and can't do. You can't say, hi, welcome to our restaurant, we have three of the nine items from this first section available today. And two of the entrees are available. I'm so sorry. You'd be like what is this? Like I'm never coming back here. But we, in reality, like I wish we could do that, you know. Because sometimes you just really have to say, can we open or not?

GOVERNOR BOWMEN. Well thank you so much for your excellent answer to the first question. It was so good. You answered my second question, which was about inflation. So, if there's anything you would like to ta talk a little bit more about? You talked about wage inflation, but the input inflation, you talked about how you can't pass it along. Are there are other concerns? And I would like to open it up to my colleagues too.

CHEETIE KUMAR. I have a quick thing to add. I think real estate is such an important component of a small brick and mortar places. You know, real estate has been thriving and growing and booming, and that's great. But developments are happening everywhere in every city in the country. And, you know, the starting rent is a certain amount. So as, you know, in previous times, 30 percent of your revenue food costs, 30 percent labor, and then you have your operating expenses, blah, blah, blah. Now labor is hovering around 48-50 percent, your food costs have gone up to 35. So, there's 75 percent. Credit card processing fees keep going up three and a half to 4 percent off the top. Rent is now, you know, I mean, where does it fit. You just, after a point, you get to 100 percent and you haven't paid all your bills, and now you're operating at a loss. So, you know, for us, we were fortunate enough to be able to buy a building. And that kind of changes everything. But that's, we're lucky, you know. We utilized an SBA (Small Business Administration) program and worked with a local bank. And, you know, we've been in business for a dozen years. We have a presence in our city. But that's not the case for everybody. And that's not accessible for everybody. So, you know, rent going up and everything else going up, and the ability of a small, independent restauranteur who has a dream and a vision, and really wants to invest in their neighborhood, they may or may not be able to do that in the future.

GOVERNOR COOK. So, thank you for that presentation. Just have a quick question. You said that this was a performance, performance space and restaurant. Most of the conditions you talked about had to do with the restaurant business. Are the conditions the same for, it seems like they would even be worse during COVID for a performance based?

CHEETIE KUMAR. They absolutely are. We never actually reopened the performance space once the pandemic hit. And our space is very small, it's 250 people. So, you know, that it just wasn't safe for so long. All the touring bands cancelled their tours. And because we're a small space, we really booked small bands. And they're either on their way up or on their way down. That's what we get, so, you know, it's expensive to tour. Gas is up, you know, hotels are expensive. It's maybe not safe. Your record came out, you know, you're not selling records anymore, everything is digital, so that, all of that math has changed. You know, maybe people have gone to see their favorite band in an amphitheater, that math is totally different. So small performance venues, I mean, that's just, that's really hard. You know, you can't really sustain that kind of business 365 days a year with local bands. You just can't do it.

GOVERNOR BOWMAN. Governor Jefferson has a question.

GOVERNOR JEFFERSON. Thank you so much for your presentation. I have a question around the, your strategy towards your workforce. You mentioned that you had a team in your prior business that's closed down, and now you're transitioning to a new project. Is your strategy to try to retain those workers that you are familiar with, such that if we're thinking about the economic impact, there's some possibility that those people might be we redeployed in your context? Or is what you're doing now so different that it really is the case that these are workers that were released into the economy, they have to find other engagements and things of that sort?

CHEETIE KUMAR. It's a little bit of both. We did retain some folks for a really long time. I mean we've had some staff that was with us for six years. But then most of them were, in the last nine months, we offered two weeks' severance to everybody, you know, that we paid after we closed. We offered, you know, an open door, please come back and work with us in the, when we reopen. We have a couple of people that we retained and going to pay through this transition. So, you know, it would be a very different situation and the timeline and how all of that worked would be different if I didn't know, that most of my team could go and get another job. And in fact, I really helped to place a lot of people with a new job with restaurants that I like, and that I know, you know, operate with integrity, and pay their staff well and treat their staff well. If it had been a different time, we probably would have, you know, said we're closing in two months, and it would have been a lot slower. But I know that most people can find a job very easily. But even still, we gave them enough time to find that work be paid, and then help them find another position.

GOVERNOR JEFFERSON. Great, thank you.

CHEETIE KUMAR. You're welcome.

GOVERNOR BOWMAN. Thanks everyone for all your excellent questions. We'll move on to our third panelist, Jess Pettit. Jess is the Senior Vice President of Commercial Strategy, Insights and Analytics at Hilton, a leading global hospitality company with a portfolio of 18 brands comprising 7,000 properties and 1.1 million rooms in 122 countries and territories. It's a pretty big role. So, in your role at Hilton, Jess delivers customer performance and economic insights to Hilton's leadership teams and partners. Jess leads the only fully cross functional global analytics team in the hospitality industry, covering brands, digital, call center, new hotel development and other key corporate disciplines. Jess is a born and raised hotelier and has committed his career to his passion, the impact that hospitality has on society. So, Jess, we'd like to hear a little bit about how this past summer has impacted your business and hotel occupancy rates during, compared to during the pandemic and then where were those customers coming from? Was it for recreation, business, conferences?

JESS PETITT. First off, thanks for the opportunity to be here. It's truly a privilege. And thank you, for all you all do for on behalf of all of us. It's an interesting dichotomy between Judy and I, in large and small business, although I'd say many of the same dynamics exist and what we're seeing from a hospitality industry perspective. And I struggled to imagine an industry that was dealt as difficult to flow during the pandemic. You know, 80 percent down plus and the depths of it. And it's been a challenge, but also, you know, I think at least on the positive side for hospitality on our end, you know, starting to see that real recovery.

And it starts with leisure travel, to your question. Over the course of this summer, but also last summer, our industry shifted much more towards a leisure focus. It ties very closely towards disposable income, stimulus, folks had more money to spend on travel. So, you know, complete opposite of 2020. The dynamic in 2021 summer and 2022 was this concept of revenge travel, right. You had not seen your families, you haven't seen your friends, you haven't been able to go to the national parks or see much of the country. And so, revenge travel was a very real thing for us. And we see that dynamic in leisure markets, so our beach markets southeastern US. We see that dynamic in national park markets, you see it in long weekends. The holidays, we become much more compressed from a business demand perspective. And so, over the course of the summer, we saw our demand from leisure travel, so when you account for all seasonality and all the other noise, up 10 percent versus 2019. Right. And that's overall, from an industry perspective, which is great. But then you realize that there's another 50 or 60 percent of our business, which comes from business travel and group travel, right. And in order for our industry to truly have the compression it needs to be successful for our independent owners, is you need all three parts of that three-legged stool to really be successful. So, what have we seen over the course of this summer?

Right, so leisure was doing very well, we started to see the initial signs of corporate travel coming back. You know, starting the beginning of this year, corporate travel was down closer 25-30 percent. Now through the summer, we're getting closer to that 10 percent down range from a demand perspective. Group travel, obviously, for all the reasons you talked about events, all the reasons that group was the most depressed from a demand perspective, we saw that in our industry. Down roughly 35 percent in the beginning of the year, by the end of the year we expect that full year number to be closer to 15 or 16 percent down from an industry perspective. So, you're seeing the recovery, and it's very much as we would have predicted it back in April of 2020. We built our first models, and we said the first thing that was going to be coming back was essential travel, what Tom talked about earlier. The folks that we needed to travel across the country. Then we saw leisure travel, small businesses which needed to travel in order to be successful. And we saw a bit of an air pocket there before we saw large companies coming back and then finally larger groups. I think, you know, the other dynamic we see, and I often use the story from my own experience, you know, weddings and events, right. We went from nobody being able to do that 2020, I was meant to get married in 2020, first in June and then in September, then in June of 2021, and then finally in September of 2021. And the dynamic you see is there's compression, right. Everybody had that same experience. So, I went from a

Saturday at one venue to a Sunday at another. Right. And so that's a very similar sort of pattern that we've seen cutting across.

CHAIR POWELL. [Inaudible Comment]

JESS PETITT. I think maybe revenge babies as well. Right. So, which, yes, I have a ten week at home now. Hopefully he's awake watching this. So, you know, we've seen some of those dynamics from the rest of the market come back. And so, it's not just been about leisure periods, as we get into September, we're seeing some signs of life in all segments. But by the end of the year, we're still going to be down overall demand for our industry, around 5 percent. And that's when you take into account leisure up ten and then everything else a little bit lower. And so, what does that mean? I'll jump a little bit to how that impacts price, right. Because we similarly are downstream from a price perspective, right. We're impacted by labor, we're impacted by food costs, a variety of other supply chain related things. When, you know, we look at our price on a year over year basis, I'm sure folks see it if they're traveling, you could see prices that are up 20-25 percent. On the whole, our industry forecasts prices are around 15 percent year over year. But when you account for inflation over a three-year period, so comparing to 2019 our real average daily rate, we're still lagging 2019 levels. And it's really because of that lack of compression from all of the market segments coming back together. Right. And so, I think that's going to be the interesting thing to watch is as, you know, we hopefully see demand reach levels across all customer segments, then price would follow in a similar way.

GOVERNOR BOWMAN. Do you think that the pandemic experience has reshaped the way the industry operates?

JESS PETITT. Yeah. And so, I think a couple of things that are talked about there. And it kind of alludes also to the last question. There is a tale of two cities. Right. And it's interesting because you see resort markets, drive-in destinations, they have been doing quite well. Extended stay hotels have done really well. Again, Tom's market and other markets like that they've really supported extended stay travel. What we haven't seen is really the return to urban markets and large conventions. Right. Those are the lifeblood of major cities. Right. And so, we're starting to see that recovery, right. But there's obviously pandemic risks and other things that folks have been considering. You know, you need that overall return to desire of travel. And so, we're starting to see that comeback, and so Las Vegas and Orlando, we're starting to see that sort of turn back up. Markets like San Francisco, Chicago, New York, not as much, right. And San Francisco, obviously much more dependent on the tech market, which has been quite, you know, different than the rest of the overall business community. So, we're seeing a little bit of that. I also, I like to think about sort of the where do we want to get back to normal versus what's going to be a new normal that we expect, right. Back to normal is return to normal segmentation, you know, folks are able to have their social weddings in advance, get back to regular meetings, you know, normal travel patterns, right. Just students being back in school matter to us, right, because we, you know, people tend to follow the school vacation schedule. So, as we see that come back to some form of normalcy, we're starting to see normal travel patterns come back. From a new normal perspective, there's a couple things, right. We're seeing the emergence of what we call work-cations, right. The idea that people can work from anywhere, right. So, I'm not sure if that's the case for you guys. But in many cases, folks are saying, hey, I cannot be in the office for a week. And what we used to call leisure travel, right, you know, I had a conference in Las Vegas, I'm going to stay there for a couple of days and stay over for the weekend and all that. Is actually something broader, right, that we start to see some return to a new customer dynamic, where they want to have a larger room. And stay in a place that they can, you know, work during the day and, you know, connected to the internet and all that good stuff. But then at night, they can do all the things they wouldn't have been able to do otherwise. It doesn't impact all customer segments. Obviously, the families have to follow regular school schedules. Hybrid meetings are interesting, right. I understand you guys were doing this in a remote fashion, right. We need folks to get together like this. We're not sure what the future of a meeting like this, where half the tables over television and half of is in the room. You know, that's an emerging potential trend that, you know, we're going to all have to figure out, right. It's everybody's been on conference calls where it's extremely uncomfortable, where you're the one who's not in the room and everybody else is. So, we've got to figure that out. But that will lead to some sort of new normal. And then the last thing I'll just call out on the sort of new normal is an emphasis on digital tools. Right. So, for us, that's you know, folks who are trying to skip the front desk, right. That there's a little bit of a different model in how you engage with people in a COVID type world, which means you want your key on your phone, whether you're flying or you're in a hotel room. So, we've had a heavy emphasis on that in our business. But we're seeing that as sort of a change in customer dynamics, which undoubtedly could shift sort of the labor model where hopefully, team members are able to do focus more on service as opposed to transactions. Transactions can be handled more digitally. And it just touching on labor, you know, similarly, as Cheetie said. Our industry has been hit dramatically from a labor perspective. We're still 400,000 jobs less than where we were from a combination sector. We see it in all of our hotels. And when you think of demand environment where on the weekends, you're busy and during the week you're not, right, it's a difficult thing to labor schedule around. Right. And you don't get the consistency of scheduling that our team members demand and expect. We're also seeing, you know, the inflation of wages in our industry broadly double what is the broader wage inflation. So typically, in the 12 plus percent range, we've seen across, you know, across sectors or across regions in the U.S. So, we're seeing some shifts in dynamics from that perspective.

GOVERNOR BOWMAN. I know, Governor Cook has a question.

JESS PETITT Yeah, please.

GOVERNOR COOK. The data that, thank you for the presentation. The data that you're presenting are for the U.S. or are they global?

JESS PETITT U.S.

GOVERNOR COOK. OK.

JESS PETITT Yeah, although we see similar trends, I mean it's such that interests you, we do you see similar trends outside the U.S. One interesting dynamic is, take Europe as an example. It's so much more dependent on cross border travel. Right. And so obviously, that was more depressed when cross border travel was more of a challenge. Here we didn't have as much of that. But major U.S. cities, right, the lack of international travel into New York or San Francisco has certainly played an impact on demand.

GOVERNOR COOK. And taste preferences?

JESS PETITT. I'm sorry.

GOVERNOR COOK. Taste preferences, same kind of thing?

JESS PETITT. Yeah, generally, we see that, I mean, focused on the U.S. from a customer perspective. But yeah, we see those sort of trends. I would say, obviously, there are countries where it is quite different. China, obviously, is a different sort of customer environment.

GOVERNOR BOWMAN. I think GOV Brainard had a question.

VICE CHAIR BRAINARD. Yeah, just wanted to follow up on the labor question. So, you know, if you look at where employment is actually down relative to pre-pandemic, 1.4 million in in-person services, it's heavily in leisure and hospitality in your sector. Is that because people aren't coming back to that sector, or is it because your demand is down, and so you're not demanding the same level of employees?

JESS PETITT. I, it's undoubtedly a mixture of all things, right. And as somebody who grew up working in hotels, and is passionate about that sort of, you know, service economy that we have, it's, you know, in some ways can be less enticing of a job in a COVID type world, right. You know, essentially, they were essential workers, having to be face to face in ways that, you know, us in the corporate office world we're not necessarily having to do. So, I think there's an element of that, which is, you know, we need sort of a mind shift back to where we were and the value in face-to-face experiences. When I think about what we're trying to do from an employment perspective, it's hard to get people to come back to work. So, I think it's a little less of the, our demand isn't requiring as many folks coming back. And right now, as I said, we're close to, you know, 5 percent down from a demand perspective, so not massively for that level of job displacement.

GOVERNOR WALLER. So, could I ask just a related question? Yeah. So recently I was talking, it was a large firm and leisure hospitality: they were talking about related to what Governor Brainard just said. Their turnover rates, job turnover rates have doubled, than pre-pandemic, even when you can get workers you can't keep them. Is that something you're seeing in all these areas?

JESS PETITT. Absolutely. We're all competing for the same subset of folks. It's a smaller pie that we're all competing for, right. So, you see certain places where folks are putting out big bonuses to try to convince people to come their direction. Then we have to all, you know, go back and forth. And so, you know, the pie of workers in our industry broadly is just not wide enough.

GOVERNOR WALLER. So regardless of what we do for demand, you're still going to have demand for labor?

JESS PETITT. Yeah, I think, yeah, that's the case.

GOVERNOR BOWMAN. OK. Well Jess, thank you so much. And congratulations we hope you're getting some sleep. We appreciate you being here with us. Our fourth panelist is Cara Walton. She's a Director at Harbor Results, which is based in Southfield, Michigan. Cara leads the company's manufacturing intelligence business, which collects and analyzes millions of data points from thousands of manufacturing companies in North America. Harbor Results collected data from more than 600 privately held small and medium sized manufacturers each year. Cara and the team at Harbor Results utilize these data and information to help small to medium sized manufacturers improve their competitiveness in the marketplace. Cara also studies economic, business, trade, and tariff trends, impacting the manufacturing industry. And she consults with clients on the business impacts. So, Cara, thank you so much for being with us today. Can you help us understand what your most pressing concerns are for the small and medium-sized manufacturing businesses that you work with?

CARA WALTON. Yeah, absolutely. First off, thank you everyone, it's an honor to be here, I really do appreciate it. As you said, right, we work with the small and medium-sized manufacturing base. We're also a small business. We have about 15 people total on staff. So, we're quite small. But beyond working with those small to medium sized individuals, generally they're all less than $500 million. Some of them are $5 million companies in a year, and some are $700, right. But generally speaking, they're under that range. We did the math in our organization to give all of you a sense, it's about $30 billion in an annual year. That was incorrect. And it's $30 billion annually in terms of total output that they're putting out in the market.

So, to give you a sense of what they're looking at. They're privately held. They're not consumer facing. So, they're supplying to a tier one or to an automaker or an appliance maker. And they're generally not unionized. So, these are very, they're small, and they're family owned, right. Sometimes you have second and third generation leaders. Our team took some time to kind of come up with an answer to this question and we broke it into two core facets. Their biggest challenge, from our perspective, is labor. And we'll talk about that one a little bit. And then their second biggest challenge is the ability to make money. So, I could start with the labor piece. Frankly, there are many facets to it, all of which I cannot answer here, or else we might be here for a while, as I'm sure similar to you guys. But I'll do my best to give you a high-level explanation.

So, the number one core challenge that our people have is that they can't find people, number one. And more specifically, they can't keep them. So, in some cases they are absolutely getting people into the door and then they're not sticking around. This goes far beyond production workers. So, we absolutely do have clients who have challenges where, frankly, sometimes Starbucks or we're in Michigan, so the Tim Hortons, or something like that, will say, we'll give you $1,000 signing bonus. We absolutely have companies who are losing employees to that. But it's also a skilled labor challenge. So, we're lacking skilled labor, we're lacking people willing to even go into apprenticeship programs, and we're lacking office staff. One of the things that you guys talked about was that you don't have the ability to do work from home, nor do these people. End of the day they have to make pieces and parts, so they don't have that capability, similar to a tech world, either. I want to be clear about one thing as we kind of talk about the labor challenge. Our core of the business, we focus on making sure that the only answer isn't adding people, we want our businesses to be efficient and be productive. But they truly can't even find enough people to be efficient today, which is the big problem.

Anecdotally, I was talking to a plastics processor this morning that hired 14 people last week. Three of them showed up this past Monday, one of them left at lunch. So, and this not a, this is not the only person who says this, right. I hear these stories and our team hears these stories all the time. So, one of the things that we really see, right, is despite all of these businesses offering really high paying jobs and offering career development tracks and offering, they're paying really big bills to train these people, right. They say, hey, come in with no experience, I'll make you a tool and die maker. I'll make you a press, I'll make you a process tech, or whatever it is. They're not able to even find the people willing to go in to take that level of education. And what really, what we see happening when we look at the data is that a lot of our manufacturing clients stopped hiring during the Great Recession, because frankly, you guys know better than I do, their businesses were quite challenged. So, they stopped hiring at that point in time when a lot of millennials were graduating out of college. And frankly, that gap is really rearing its head today. Not only do we have an average age of an owner, right. The average age of an owner is over 60. We have an average aging workforce overall. We don't have succession plans, not for key leaders or for other areas of the business, right. So, if I have a production manager who's in his late 60s and says, hey, you know, I want to retire in the next four years. There's no one there that's even considering being the next person to be that production manager. You lose a production manager, your facility doesn't run. So, beyond that, right, what we're really watching in our bottom line is that it's costing these guys a lot of money. And what they're starting to tell us and what the data is starting to show us is they're choosing not to grow their businesses, which is a big challenge, right. So, they're saying, hey, I'm not going to take on more revenue because I don't have the people to do the work. Or in some cases, they're even saying I'm going to shrink my business.

Which brings me to my second point, their other biggest challenge, which is they can't make money at the rate that they used to be able to. You said there was a lot of compounding issues in everything. There's a lot of compounding issues in this one as well. But some of the core pieces of it that we're seeing is that despite these businesses increasing their efficiency levels, so they're absolutely doing better from an efficiency and throughput perspective, they're not making more money. So, when we look at their actual profit margins they're not going up, they're frankly going down quite substantially. It's due to a lot of different reasons. One of them is the labor piece, which we talked about, so I won't go into too much more detail there. The other piece is this overall cost of doing business. So, it's everything from energy prices, its transportation costs. The rail strike was a really big, or potential rail strike, excuse me, it was a very big challenge to these individuals. Health care costs and everything from temp agency up charges, right. So, when somebody's trying to get temp labor in the door, it's 30 to 40 percent higher than it used to be. Interest rates on loans is a big one. Most of these companies do not have cash, they're privately held, but they all use lines of credit. So that's really impacting them as well. The other piece that's preventing them from being able to make money, at least consistently, is they had a lot of PPE (Personal Protective Equipment) or ERC (Employee Retention Credit) funding, just depending on the type of business, most of them did get that because they are privately held and small. Some of them used it better than others, right. Some of them used it as a lifeline, and frankly just delayed some of the challenges that they were feeling before COVID even took its toll. And now that that money's dried up, they're feeling those same challenges again.

My final piece on kind of their challenges from a financial perspective, which is potentially the most challenging to quantify, but I did my best to put it into numbers, is this increased chaos that they felt over the last 24 months, is really preventing them from being able to make money. So, the best way I can kind of articulate that to you is that most of the customers and companies that I work with, don't know their customer demand, they don't know the schedule on their shop floor, they frankly don't even know who's going to show up to work in a given week, and in some cases in a given day. I mean, there were periods of time in 2020 where we would talk with customers who would say, I got into work today and eight things changed between 7:00 a.m. and 8:00 a.m. Right. So, they don't know how to do this. At the end of the day, what that's doing is that's driving up massive amounts of transactional waste. It costs a lot of money to hire someone, even if they never show up. So, it costs money to get them, and process them, and give them health care and all that. Additionally, it's tying up a lot of money in inventory. So, we've seen massive shifts in inventory right now. And the final thing is that it's really costing them way more cash than it ever did before. So, their ability to have any flexibility in terms of how they spend their money and how they make money is gone. And at the end of the day, right, this is a massive group of people, they're not all the same, but the viability of many of these businesses long term is really concerning to us.

GOVERNOR BOWMAN. Those are very difficult challenges that you're dealing with. Could you give us some perspective on how supply chain issues are continuing to impact your business?

CARA WALTON. Yeah, absolutely. So, I will flip to the final page of the notes. So, from more of a supply chain perspective, we are based in Southfield in Detroit, Michigan. So, we do work a lot in the automotive space, but we also work in others. I personally came out of the appliance arena, so we work across most of them. A lot of the challenges today seem to be around semiconductors, that's a big thing that seems to get picked up a lot in the press. It is absolutely an issue. I'm not going to belittle it. But there are a lot more problems than just semiconductors.

To speak on the semiconductor one just for a second, some of the core challenges that we're seeing is not only does automotive need semiconductors, but your refrigerator need semiconductors, there was like a new PlayStation that came out last year and that needs semiconductors. Like a lot of people talked about it, I don't, PlayStation and Xbox are confusing to me. But either way. So that was demanding microchips. All of these different things. So automotive companies couldn't get them. Which means that this whole demand problem that our customers are facing, they have no way to plan when they're going to get chips in order to put them into the parts that they're ultimately supplying. The other piece on semiconductors, just real quick, is that when you think about an electric vehicle coming into play, they require at least 30 percent more, sometimes even more than that, than an internal combustion engine does. So, if we adopt more electric vehicles, we're demanding more semiconductors than we ever have before.

But beyond the semiconductor challenges, probably some of the more concerning things to me and maybe less easier to solve challenges from a supply chain perspective, are centered around things like transportation and freight, which all of you talked about in different arenas. But a lot of that applies to things much more than automotive as well, right. So, you talked about the agriculture business. We work with companies who can't get washers and bolts to make trailers to hitch on the back of their F150's to get whatever they need to get wherever they need to get it, right.

The other big supply chain challenge that we don't really see a light at the end of the tunnel for is natural disasters. You talked about it from an agricultural perspective. There's a lot of impact to that on the resin and steel deal markets as well. The resin market specifically, there are certain types of resin and that ultimately allow you to make your dashboard or make some of the plastic that we probably have in this room right now. The capability for them to get that resin even before the most recent round of natural disasters occurred, some of the major freezes that happened last year, it was already enforced measure. So, these companies were already taking the time to go, we need this because it's a crisis, and then it got worse, right. And that had nothing to do with any of the port challenges or any of the difficulty getting a boat out of China or somewhere else. So that was one of the big pieces on the supply chain front. I guess my, to bottom line it for you guys, at least if I could, in terms of what we're seeing from the supply chain piece of it. Automotive specifically, historically, has been a 17 million a year sales volume in the U.S. This year we're forecasted to do about 14 million units. If you look at the OEMs (Original Equipment Manufacturer), which are publicly traded companies on like my customers, they're making money and they're doing quite well. They have their challenges as do all businesses. They don't necessarily have a reason to go back up to 17 million units, based off what we see today.

The reason why I bring that up is because this means that we have a lot of people who are supplying to them who are dealing with a much higher mix, because everyone wants something different in their car today or different in their appliance, and we're dealing with a much lower volume. So, at the end of the day what that does is that increases the complexity for everybody that we work with. And then within that what that does is that makes them really challenged to manage all of the supply chain pieces that we talked about. At the end of the day they're focused on this week am I going to run out of cash or am I going to shut down my suppliers line. Right. So, I mean, these are the kinds of decisions that these companies are facing. So, I don't know if that fully answers it but that's where we're at.

GOVERNOR BOWMAN. Fantastic. I'd like to open it for anyone.

GOVERNOR WALLER. Yes. I'm just curious if these firms, it sounds like some of them have more demand than they can handle. So, if there's a downturn in the economy, how are they going to manage it?

CARA WALTON. Yeah. So, they absolutely have more demand than they can handle. From an inventory perspective we're still well below it. We saw demand, on average for them, go up nearly 30 percent between 2020 and 2021. It's plateaued a little bit, but it's still relatively high. In terms of that demand lowering, I frankly think some of them would be, I'm not going to say pleased, but would be relieved by that. Because the intention of that demand lowering would mean hey, maybe a couple of my 20, 30, 40 open positions I no longer need to hire for, maybe I can take a breath to actually manage my business and focus on continuous improvement. Obviously, we don't want demand to shrink too terribly much. Right. But what I will tell you, at least in automotive specifically, is there's pretty hefty demand planned from a tooling and new product perspective. So, we have a lot of new vehicles coming out in the market in the next couple years. It's really positive. So, we absolutely have the demand to do so. The challenge is if they're able to run their businesses to still make money even when the demand is still there. Does that help answer?

GOVERNOR WALLER. Yeah. It actually, it does.

GOVERNOR COOK. I have two questions about the long run. I, in my previous life I was a professor at Michigan State. So had students from Michigan. And in my senior seminar on the current state of the economy, I taught it for about 15 years or so, the last time I taught it was 2019. And the question that I posed at the beginning of the semester is, do you think you're better off than your parents were at this age? And for the first time in 2019, students said, post-Great Recession, they said that they thought that they were better off because they had interesting jobs. That their parents had to work on the line, and that they thought these were boring jobs. So, you know, people don't want to show up for tool and die jobs. My student's reaction would be, that's boring, that's not the Apple store. So, like that seems long term. That seems structural. So how do you address that? I mean this, how do your businesses say that they would address something like that?

CARA WALTON. Yeah.

GOVERNOR COOK. We make manufacturing sexy.

CARA WALTON. Yeah. That's the end all question that we face almost every day with our businesses. It's very challenging to make manufacturing sexy, I'll tell you that. I would tell you that if you go into the average manufacturing facility, there are floors that I would eat off of. I mean there are impeccable facilities in this country. They're beautifully maintained. Everything from, I mean yes, OEMs and tier ones very large companies are doing a great job. But I walk into $10 million plants that are beautiful, have state of the art equipment. You've got 20 somethings working on million-dollar machines and coding, that never got a four-year degree but went to an apprenticeship program and are doing really cool stuff. The biggest challenge we have is encouraging more people to do that. The only way that we found success so far, at least our clients have, is they focused on actually talking to the parents at very young ages. So, starting in like elementary and middle school, about the benefits and the career development opportunities in manufacturing that don't require a four-year degree. I have a four-year degree. I know many people here have a lot more than one four-year degree. So, I understand the benefits of higher education, but it doesn't mean that everyone needs it. So, we're focused very strong on trying to encourage people to go into manufacturing because it's, I'm a nerd for it, but it's really cool.

GOVERNOR COOK. So, I have just a quick question. And this is a longer-term question too. So, to what extent, because of these labor demand challenges, to what extent have businesses adopted automation to fill the labor demand?

CARA WALTON. Yeah. So, they absolutely focus on automation pretty clearly all the time. I was at, you spoke about big conferences, I was at the International Manufacturing Technology show in Chicago a couple weeks ago, actually very well attended. So that was positive. I stayed at a Marriott, I'm sorry about that. But either way, we were at that show and the core focus was on automation. So, it was everything from automation within a machining cell. So, if you're cutting a piece of steel, they're really focused on how do I have multiple palettes to make sure that I can do things without people, right. How can I run this machine for 24 hours and then have some guy sitting at home on his cell phone being able to monitor it? Because I mean they have that technology today. Every machine monitoring company will give you an app on your phone. So, they're focused quite a bit on that piece of it. There's also a lot of automation in terms of lifting and material handling. And even in terms of some of the warehousing and pieces of it as well. So how do I get a machine to wrap a box. And how do I get, frankly, any automation to do what even in manufacturing we may call the less intriguing jobs, so that we can have people actually making parts, and actually designing, and actually checking quality, and doing the things that are, what I'll say more fun than packaging a box of parts, right. We have, at this point, automation that can do that.

VICE CHAIR BRAINARD. I just had a quick question. I think Chris and I are kind of going in the same direction on these questions. And I'll ask it to you, but anybody else can jump in. So, in a normal economy if demand softens a lot, you know, first thing businesses do, you know, they often will lay off workers. This seems like an unusual economy where businesses have been scrambling to get workers, for so long. If demand softens, do you think they would respond differently this time in terms of those workforces? Or do you think they just would do the kind of, usual playbook in terms of trying to shrink costs?

CARA WALTON. Right. Yeah. It probably depends on the business of it. Obviously, everyone's different and I don't know all of them, but I do think they would approach it differently. I think one of the things that, at least in our space, they may consider doing is looking more closely at who is it that may actually be close to retirement age any way, that we could help them, and now they maybe feel comfort to be able to leave the workforce. And then how do we get that tribal knowledge out of that individual before they leave, right. The big thing with our workforce is going to be that the people who may necessarily want to leave the workforce at some point in time, they have all of the knowledge on how to do everything. Every average good that we see in this country, right. There's some guy sitting in an office that's a toolmaker and knows exactly how to manufacture that part. I don't think they would do massive rounds of layoffs. But I do think they would potentially strategically say, hey let's, I mean frankly, let's rank our A, B, and C players, right. Who adds the most value in our business and who are we hiring because we were really desperate for people in this massive demand surge, and they may choose to let go of some of those individuals. But that would always for them be non-skilled labor. I can't see any circumstance where they would get rid of skilled labor and would probably not be a critical mass of their workforce, for the most part, at least in the privately held businesses I work with. I can't speak as much for the publicly traded guys.

GOVERNOR BOWMAN. Thanks everyone. Thank you so much to all of first panel, and our panelists, Tom, Cheetie, Jess, Cara. All the information that you've provided and shared with us today really just helps us better understand the data that we look at here at the Federal Reserve. So now we'll take a quick break and we'll come back in about ten minutes. And Vice Chair Brainard will chair our second panel. So, thanks everyone.