**WorkforceGPS**

**Transcript of Webinar**

**Discussing BLS Employment Projections and COVID-19**

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*Menifee, CA*

LAURA CASERTANO: Again, I want to welcome everyone to today's webinar and I'm going to turn things over to your moderator today, Don Haughton, from the Employment and Training Administration. Don, take it away.

DON HAUGHTON: Thank you, Laura. And welcome, everybody. My name is Don Haughton. I'll be moderating today's discussion on BLS employment projections and COVID-19. As you may know, the BLS employment projections, released earlier this year, did not include the impact of COVID-19 and the response efforts. BLS developed alternate scenarios for their employment projections that encompassed possible impacts from the pandemic.

Michael Wolf, who is the division chief with the Division of Occupational Employment Projections, is here to present the results from his studies on the alternate scenarios and also demonstrate changes in consumer behavior caused by the pandemic may alter the baseline projections for the already-published detailed occupations in industry.

So we're very happy Michael is available to make this presentation to the workforce system. I've worked with Michael in the past, very knowledgeable, very articulate, very intelligent person. So Michael, why don't you go ahead and take it away.

MICHAEL WOLF: All right. Thank you, Don. As mentioned, my name is Michael Wolf, the Bureau of Labor Statistics Employment Projections program and I'm very excited to be talking to you about these alternate projections about the impact of the pandemic, giving a brief overview of what I'll be talking about.

I am going to go into a little bit of background about the BLS projections and methods primarily as it pertains to how we produce these alternate projections.

I am then going to talk about some of the potential structural impacts from the pandemic on the future labor market and then talk about what our models say about what the potential impacts of those structural changes are on industry and occupation growth and specifically on the 2019 to 2029 projections time period that we covered in our most recent set of projections.

So background on the BLS projections program, we released long-term employment projections on an annual basis. For those of you who have been around for a little while, you may remember we used to do this every two years. We currently released the projections on an annual basis and the most recent one came out just in September of this past year.

So we released them in September, 2020 for the time period 2019 to 2029, but while we released them in September the projections were developed and finalized in the spring of 2020. So as a result, the projection did not take into account the impact from the pandemic.

A lot of the projections were developed before the pandemic even hit and then once the pandemic hit it was very early on and difficult to tell what the long-term implications were. So what we released in September essentially did not take into account the pandemic.

So we knew that there would be interest in that which is why we developed these alternate scenarios. Our projections cover more than 800 occupations and 290 industries and then again, we have BLS – OK. I'm not sure why the slides are going backwards. We have BLS to prepare these projections at the national level only.

So the data that I'm going to be talking about is national level data as well, but we do provide our projections to our state partners who develop the state and local employment projections and we are providing these alternate scenarios to the states as well for their use. A little bit about who we're producing these projections for and why that impacts what it is that we're producing here.

So our users sort of fall into two categories, those who are using it for their own micro decision-making purposes, career counselors and students who are making career choice decisions maybe at the beginning of the career or job seekers who are currently in the labor market and looking to find work or switch occupations.

So those are specific individuals who can't – who are going to be using the projections to make these decisions, but we know that this is also widely used by education training officials making decisions on policy, funding and program offering based on the demand for occupation.

So the final of the group of users to use these projections are researchers interested in how the economy is changing. As we took these factors into consideration in developing these alternate projections, we knew we wanted to produce numbers that would be helpful both for the individual users of the data as well as the individuals who are using them at a more macro level to inform on the policy and understand how the economy as a whole is changing.

So we recognized that there was strong demand for information on the pandemic and as I mentioned, we release new projections every year, but we also knew that we didn't want to wait until September 2021 to provide potential information about the impacts of the pandemic. So we decided to figure out what we could do in the meantime to release more information to help users make decisions and to better use the (data ?).

What we weren't able to do was essentially rerun the entire projections model. It takes quite a long time with quite a lot of data and assumptions and models to produce a full set of projections and while we do that now on an annual basis it wasn't something that we could do more than once per year. So – but we wanted to figure out whether there was a way we could still provide information on what would matter for our customers.

And what we figured out that we were able to do with our methods was to make adjustments to inform on what impact changing consumer spending decisions would be. So basically, if the pandemic causes people to change their patterns of consumption, what would be the long-term implications for the labor force?

And we also decided to do the scenario – it's actually two alternate scenarios we're calling moderate impacts and strong impacts and in our mind, to better reflect the uncertainty that the pandemic has caused. The moderate impacts versus strong impacts, our idea is to say there's a lot of uncertainty about the future, there may be some changes that we think are likely but we're not sure about what the degree of changes are.

So we produced alternate scenarios that show both moderate impacts and strong impacts in terms of degree but also in terms of breadth of changes whereas in some cases, moderate impacts may be more confined to certain sectors of the economy where the strong impacts may be more broad.

And the 2020 to 2030 projections, which we will be releasing next September, will have some additional impact to fully flesh out what BLS thinks about potential long-term impacts of the pandemic.

So in terms of how to interpret the numbers that I'm going to be talking about the first thing I want to note is that these scenarios that we're talking about here today, the moderate and the strong impact scenarios, they're intended to complement, not replace, the baseline scenario.

So the 2019 to 2029 projections that we released this past September. And essentially, the way to think about the baseline scenario then is one where the pandemic does not have any significant long-term impacts on the labor market.

We know for sure, from what we're seeing in the current data, that there are short-term implications of the pandemic, but essentially, the interpretation of the baseline scenario would be things return to the patterns that we were seeing in the long-term data before the pandemic happened.

So essentially, we now have three scenarios to look at, baseline which is essentially no significant long-term impact, moderate long-term impacts and then strong long-term impacts. And we know that when we're looking at the future it's always uncertain, but we feel that the pandemic heightens the uncertainty about the future.

So what that essentially means is that when we're presenting these three scenarios, what we think it best speaks to is areas where there is significant uncertainty about the future.

We've produced data and we can produce specific point estimates for growth rates for occupations and industry, but we don't think that it's useful to look at, say, the moderate scenario which may show 5 percent decline and say 5 percent is the exact impact and it won't be 4 percent or it won't be 6 percent, but what we can say is if we have three scenarios and they're producing very different results for an occupation in industry, then we think there's a lot of uncertainty in that area.

But conversely, what these scenarios also let us do is say if in all three scenarios we get very similar results for a given occupation or a given industry, then we don't think that the pandemic is sort of increasing the uncertainty about the data for that particular occupation.

So a lot of what I'm going to be talking about is where we see differences, but I think it's also important to note that where we don't see differences is also very useful to know, because the pandemic is not affecting the entire workforce equally and there are certain portions of the economy where the impacts are not expected to be very large and the experience can give us information on that as well.

So going in here our national projections process, which is a six-stage process, I'm not going to give specific details about how we produced the data, but at a very high level we start looking at the whole labor force in the aggregate economy and then we progressively break things down into more and more detail before we end up finally with industry employment and occupational employment.

So the first two boxes, the labor force and the aggregate economy, those are completely unaffected by these alternate scenarios. Those are parts of the model that we weren't able to address. Essentially, where we're introducing uncertainty from the pandemic is in the top right bucket, the industry final demand, which again is sales to consumers, businesses, government and foreigners.

So it's essentially what people are spending money on and what we're doing is we're sort of modifying that sort of consumer and business demand to reflect potential impacts of the pandemic and then we see this through the rest of the model to say what the impacts will be on employment, because we feel that that's a more robust way of looking at a potential impact than just targeting employment itself, because we think that what it lets us do is it talks about the full implications of the changes in people's behavior, basically.

And because we use an industry input-output model, we know there are lots of relationships between industries. If you're talking about making, say, a car, you're talking about inputs from a lot of different industries, a lot of different occupations.

It's not a simple one-to-one relationship between products and the worker and our model, with the relationships between all the industries, lets us get at the full suite of impacts from a change in consumer spending behavior. So that's the approach that we took for these alternate projections. It's not to rerun the entire model but to target changes in consumer behavior on final demand and what the implications would be for employment.

And then the final thing that we did also in these alternate scenarios was in the last box, the bottom left, we did look at how businesses might change their staffing patterns to account for these changes in demand as well. So it's essentially both how individuals might change their patterns and how businesses might respond to that by changing the types of workers that they need.

And so we did all of this in the back end. So what I'm going to be talking about is just the results on industry employment and occupation employment, but I just wanted to give you a little bit of background about where these numbers are coming before I talked about that.

All right. So getting into the specific impacts that we are reflecting in these alternate scenarios. The first impact that we reflected in these scenarios is increased remote work. Now, this is something that in many industries and occupations is not possible, but certainly affects a large portion of the economy.

Fortunately, I haven't been into my normal worksite since March, I've been working completely remotely and that is common in many parts of the economy and what we're modeling in this scenario is that remote work will be more common in the future than we were anticipating before the pandemic.

Now, that isn't to say that the pandemic will still be having – forcing us to be in a remote work environment 10 years in the future, but perhaps that the experience that companies have had with a remote workforce over the past month may change their willingness to entertain having a significant share of their workforce working – (inaudible).

Now, this impact is complicated to model, because there's no remote work industry where we can just target increased employment there and no non-remote work industry where we can just target no changes. It has impacts on a lot of different areas. One impact of increased remote work in the future is on the construction industry and this sort of has two impacts in the alternate scenarios that we have.

One is on sort of nonresidential construction, which is basically office buildings. If companies have a larger share of their workforce working remotely, they may need smaller footprints and therefore, that might reduce the demand for commercial office space.

On the flipside when we're looking at residential, if more people are working at home and not necessarily permanently, maybe just on a part-time basis or – they may want to have more space in their home. So the flipside of a decrease in nonresidential construction is a potential increase in residential construction to accommodate perhaps increased space requirements that individuals have for their home.

And again, when I'm talking about these impacts, I'm not – we're not saying that everyone or every company will change their behavior, but if we're talking about changes even at the margin, it can have a significant impact. If 5 or 10 percent of companies decide to reduce the amount of space that they need in their office, that can have a significant impact nationwide on the demand for office real estate.

Similarly, if 5 or 10 percent of people decide that they want to have more space in their home and upgrade from an apartment to a townhouse or a townhouse to a home, that can also have a significant impact on the construction industry. It's not necessary that everyone make differences; if we're even talking about small changes at the margin, it can have significant impacts on employment down the road.

So impacts on construction is one potential consequence of increased remote work. Impacts on the transportation industry is another and here we talked about transportation for individuals to get to work when we're talking about, say, transit systems in urban areas.

If fewer individuals are commuting on a daily basis to a work site, then that's going to decrease demand for transit services. There may also be some individuals choosing not to want to commute in a transit system, either in a bus or a train because of fear of being in close spaces with large numbers of people.

So those are two potential ways that there may be impacts on the transportation industry from just daily commuting. And then another consequence of increased remote work may be decreased business travel.

We're not talking about daily commute to the office but travel where because people are more familiar or comfortable with the tools that enable remote work, remote conferences and remote meetings, there may be less demand for business travel in the future. And then another area that increased remote work may impact is food service and food delivery or food provisioning.

When individuals commute to an office space, they don't usually have access to a full kitchen and a full pantry that they have at home and when they're commuting to an office space, office spaces often have cafeterias or in a commercial business district, a large number of restaurants in close proximity.

So when individuals work in an office, they're more likely to consume foods from a restaurant or food service provider than when they're working at home. And then if they're not going to as many restaurants, then they may be increasing their consumption of food from grocery stores. So there may be increasing demand for grocery stores. So – (inaudible) – sort of the provision of food and restaurants is another potential impact of increased remote work.

And then a final impact of increased remote work that we see is the impacts on the IT sector. There's either – (something's up with the slides ?).

The IT sector is going to be influenced by the – when people are connecting remotely, there are particular types of software which they need and which need to be provisions their company may be providing them or – and we think that there's going to be increased demand for those types of things going forward as we have a larger remote workforce.

So this sort of trend of increased remote work has a lot of impacts on different industries which our alternate scenarios try and model in terms of how it filters down to the specific occupations and specific industries that may be affected. The next area, after remote work, that our alternate scenarios are encompassing is increased ecommerce.

So we see that in the near term there has been a significant increase in the amount of retail spending that's been done online versus in stores and while some of that is likely to revert back to higher states once the immediate effects of the pandemic have passed on. We think that essentially the exposure to ecommerce may accelerate some consumer behavior patterns that were already in progress.

The share of details of ecommerce has been increasing at a steady rate for many years, but it certainly jumped up significantly during the pandemic and that may have sort of accelerated the long-term trend that we were seeing. That type of an impact is going to be a lot more concentrated on a particular industry, in this case, the retail and transportation.

Warehousing industries are still not quite as broad as the increased remote work, but one also that we're also taking into account in these scenarios.

The third area that our pandemic alternate projections are encompassing is increased medical research. We see this as a factor from either individuals are consuming more medical services because of the pandemic or the governments are providing more funding for medical research in order to ameliorate the impacts of any future pandemics and we see that as a potential factor that we're covering in these alternate scenarios.

And then the final factor, which is something that shows up primarily in our strong impact scenarios, is decreased spending on leisure and hospitality.

What essentially this impact is saying is there may be a small share of people who decide that they want to reduce the amount of time that they spend in enclosed environments, say, in concerts or in movie theaters or sporting events with large numbers of people and that therefore, there may be less demand for these areas and again, we're not talking about movie theaters never opening or concerts never returning, but if there's a small share of individuals who decide that they, in the past, would've attended these types of events and attend fewer of them in the future or decide not to attend them, then that can have an impact on the demand for the outputs of these industries going forward.

So those are the four main categories of impacts that we're talking about from the pandemic in these alternate sets of projections. Some things that we are not considering primarily because of the ability of us to basically not be able to run it through the model were things like the reshowing of manufacturing.

There's been a lot of talk about whether global supply chains need to increase resiliency and whether there might be some returning of manufacturing to the United States in order to boost the resiliency of supply chains either for medical products or for some protective equipment, in particular, or more broadly for all manufacturing.

That isn't something that we could take into account, because in our model, we didn't touch the exports-imports side of things. So the potential impact is not something that we're able to address in our alternate scenarios here. Another potential impact would be increased automation.

We know automation is happening and it's impacting a lot of industries and occupations, but we weren't able to take that into account, because our assumptions about industry productivity we weren't able to adjust.

So it certainly is possible that businesses may decide to increase their spending on automation equipment either because they want to reduce the number of workers that they have to have in close proximity to each other or other factors, but that's one thing that we weren't able to take into account but it is something that people have talked about as potential long-term impacts from the pandemic.

And then another one that we didn't take into account was potential for altered labor force participation. The labor force is sort of the beginning of how the projections are developed and we weren't able to run that through, but those types of things will show up in the projections that we'll be releasing next September, the 2020 to 2030 time period.

So I'm going to switch gears now and talk about what the actual results from these alternate scenarios are. So starting first with the major industry impacts, first, how to interpret this slide here, what we're showing here is the difference from the baseline projections.

So if we take this – the top line, which is accommodation and food services here, the difference from the baseline is approximately 5 1/2 percent in the moderate impact scenario and about 10 percent in the strong impact scenario. To say that that industry is declining in both scenarios is just the change from what the growth was in the baseline projection.

MR. HAUGHTON: Hey Michael, this is Don Haughton. It looks like the slides are being delayed as you're progressing through your talk. I think you want to – the slide that should be showing is a bar graph and if you could let us know what slide number you're explaining, hopefully we can get that either on the screen or if people have downloaded the slide, they can open that slide number. So what slide number are you referring to right now?

MR. WOLF: Right now we're at slide number 10.

MR. HAUGHTON: OK. On my screen, I see slide number nine and I've seen in the chat where a couple of people have said their slides are not progressing as well. So if we could get slide 10 up.

MS. CASERTANO: I see slide 10 up and hopefully a couple other people see the bar graph on slide 10 as well.

MR. HAUGHTON: OK. So it may be intermittent issues. So I would suggest for the viewers you could download the slide – so now I see slide 10. Forgive the interruption. Michael, go ahead. Sorry.

MR. WOLF: All right. I'll try and note what slide I'm on going forward if problems continue.

So again, slide 10 here, we're talking about how the alternate scenarios compare with the baseline projection and what we can see in this one is that the most significant negative impacts are on the accommodation and food services industries, arts, entertainment and recreation which is particularly in the strong impact scenario, as I talked about that the impact on leisure and hospitality is something that we're reflecting mostly in the strong impact scenario only and then the retail trade industry and then smaller impacts on construction, transportation, manufacturing, etc.

This is not an exhaustive list of industries. What I'm highlighting here are just a few of the industries which have either significant negative or significant positive impacts for – in the alternate scenarios.

And the two industries which have the largest positive impacts are the information industry, which is, in this case, primarily impacted by software industry and the professional, scientific and technical services industry, which is a rather wide ranging selection of industries but includes both scientific research and development as well as computer system design services.

Those are the two sectors which are particularly positively affected in the alternate scenarios here. But again, as I mentioned earlier, the alternate scenarios both show as differences but also lack of differences. What we don't see on here are significant impacts – or actually, I did include manufacturing to show that manufacturing has relatively minor impacts on it.

And other industries that also have relatively minor impacts on them that are quite large industries, healthcare, government, education, very large industries that, in our alternate scenarios, don't show significant impacts from the pandemic. So I am going to next talk a little bit about some of these more – industries in a little bit more detail.

So I'm proceeding onto slide number 11 now, which is talking about impacts on construction and I alluded to this earlier that we see this – although there's overall negative impacts on construction it's primarily on the nonresidential side of things. That is, construction of office buildings that we're seeing the most negative.

On the residential side of things, we actually see a small positive impact in the moderate scenario and just a small negative impact in the strong impact scenario. So again, impact of construction primarily felt on the nonresidential building side of things.

If we look at transportation, the transit and ground, passenger transportation, again, I mentioned that this could be affected by either fewer individuals commuting if there's an increase in remote work or particularly in the strong impact scenario, fewer individuals who want to be in relatively confined spaces with large numbers of other people.

So transit and ground, passenger transportation showing significant impacts and then also air transportation, this one being affected by the potential slowdown in business travel and again, we're not anticipating that business travel will go away and as reflected here, the growth for air transportation is in the moderate impact scenario still growing.

In the strong impact scenario it's a slight decline, but in both cases, clearly negative impacts relative to the baseline and that gives a sense about what the impacts of the pandemic could be on those particular industries.

Looking at the retail, leisure and hospitality industries, this is slide 13 now, the retail trade industry was already projected to decline in our baseline projection. That would primarily be rise in ecommerce, but it kind of just becomes heightened in both the moderate and the strong impact scenarios; whereas if we look at food service and drinking places, which is primarily restaurants, this was an industry that was one of our fastest growing industries in the baseline scenario and in the moderate impact and strong impact, it has either much reduced growth or actual declines in that industry.

So this is clearly one of the industries that has the biggest potential impacts from the pandemic. And then traveler accommodation, which is essentially hotels, also an industry that essentially we were projecting no growth in the baseline but a significant decline in both the moderate impact and the strong impact on alternate scenarios.

I'm interspersing, with the industries, some of the data on the detailed occupations. These are a trio of food service occupations that have particularly large impacts on them, bartenders, waiters and waitresses and hostesses. The – what these three occupations all have in common is that they are all occupations which are heavily involved in interacting with the customers.

And when we're talking about the impact on restaurants, there's a little bit of a bifurcation between the occupations which directly interact with the customer and those that don't, because there's been significant increase in, say, restaurant production of food for offsite consumption, is what we technically call it, which is either takeout or delivery, and the occupations which are involved in that type of food see less of an impact.

So right here, we see in this case, three occupations where there are very big differences between the baseline and the moderate impact and strong impact. On this next slide, slide 15, we see that the impact for these three occupations, fast food and counter workers, dishwashers and food preparation workers, there is some negative impact but it's much less of a negative impact.

And essentially, the reason for that is that these are occupations that are primarily using – like preparing the food and they would be needed regardless of whether the food is consumed onsite or offsite.

The dishwashers is sort of the one exception where you see slightly larger declines than the other two and the dishwashers are both sort of involved in – or partly affected by the decrease in onsite consumption, because they do – there's dishwashing for the dishes used in serving the food but also in preparing the food.

So on the preparing side of things, they were less affected, but on the dishes used in serving, they are more affected, both carryout or takeout, use disposable type packaging. Moving on, this is slide number 16, looking at the impacts on clerical and sales occupations, cashiers primarily being in the retail industry already were a declining occupation but has very significant larger declines in the moderate and the strong impact scenarios.

Reservation and transportation ticket agents, this is affected by – sorry, slides seem to have gotten off for me. I'm back on slide 16 here.

The reservation and transportation ticket agents being affected in the air transportation industry but then also sort of across the board in terms of transportation because they are very much involved in face-to-face interaction, there are a lot of efforts to sort of reduce the need for that type of interaction, which may disproportionately affect this type of an occupation, similarly with receptionist and information clerks and the hotel-motel and resort desk clerks.

So essentially, occupations that involve a lot of face-to-face interaction have the potential for larger negative impacts in the alternate scenarios, particularly if they are concentrated industries like air travel or accommodations that we were also expecting decreases due to the impacts of the pandemic.

Moving on now to slide number 17, here we're looking at impacts on industries impacted by increased medical research. You have the research and development and physical engineering and life sciences, which has much faster growth in the moderate and strong impact scenarios than in the baseline and then also for pharmaceutical and medicine manufacturing.

And then we move to slide 18 that shows sort of the impact on detailed occupations in these areas.

So the epidemiologist is something that we've obviously heard a lot about in the past year and we have much faster growth for this occupation in both scenarios with the idea that this is sort of the heightened awareness of the need for prevention of impacts from future pandemics would boost demand for this type of occupation, medical scientists, who are involved in research and developing new types of treatment and then biochemists, biophysics, biological technicians who are involved in a lot of pharmaceutical research.

The increased spending on medical research has significant positive impact on these occupations. And then the last category of occupations I'm going to talk about are the IT occupations. Computer and IT occupations were already relatively fast growing in our baseline scenario, but we do see some upticks in a number of the occupations in both the moderate impacts and the strong impact scenarios.

The first one on the left here on slide 19, information security analysts, this was already one of the top-10 fastest growing occupations in our projections and we have it growing even faster, sort of the idea being when you have increased remote work, the sort of cyber threats are magnified because of the sort of scope of where your company's network is being accessed is broader.

So there's increased attention that needs to be paid to the security of your networks there. And then a lot of the other occupations here are going to be, again, involved in developing the tools, developing the networks or maintaining the networks which are going to enable a more robust remote work environment in a number of companies.

Moving on, I'm at slide 20 right now, what I'm showing here is the major occupations, just to sort of sum up where we're seeing the largest impact, and the most significant negative impacts show in the food preparation and serving occupations and the sales and related occupations.

Those are obviously both closely tied with the restaurant industry and the retail trade industry, but I won't go through all of these in detail, but you can certainly see that there – the more negative impacts are concentrated in a small number of sectors, but we do see impacts across the board, across occupations and again, that's sort of reflecting the way the alternate scenarios were developed.

We didn't just target a small number of occupations and industries and say what would happen if there are changes there, we used our full input-output model that relates all the industries and occupations to each other to show what the impacts would be and while there are certainly some occupations and industries that are more significantly impacted, it is not uniform across the board and we do see very large negative impacts, particularly, as I mentioned, in the food and sales occupation.

And then if we go to slide number 21, we see some more occupational groups which have either relatively limited impacts or significant positive impacts and again, the two groups which have the most significant positive impact are the life, physical and social science groups and the computer and mathematical occupation groups.

So those – the alternate scenario, obviously, it's slightly weighted more towards the negative side of things. We do see more occupations and more industries that have negative impacts rather than positive impacts.

Part of that reflects the way we developed the projections, because when we're talking about the consumer impacts of the pandemic, it was sort of a lot easier to figure out what the potential things that people would be spending less money on would be rather than where they would be spending more.

So while we do have some positive impacts we know we're slightly weighted towards the negative side of things. That isn't necessarily because we expect that there will not be more positive impacts, but there will have to be a sort of reset of everything and what we felt comfortable with were the changes that we made here and that's reflected in this set of projections.

So again, we feel that what this exercise did was give us some idea about the areas where we're expecting there to be the most significant impact. We recognize that, as with any projection, that a lot is going to change and there's going to be a lot that's unanticipated over the next 10 years.

Our projections are intended to reflect the long term, because from a career workforce development standpoint, we want people to have good long-term opportunities in the fields in which they pursue education or training and we know that the short-term is very much heavily impacted by the pandemic and we do think that there are some of these long-term impacts as well and to the extent that we can provide some of this information on some of those potential long-term impacts we hope we're doing the user base of this type of data a service.

So on slide 22 here, I'm just including some of the links to the projections data, the occupational handbook which is our career publications and the state employment projections.

Again, this full set of data that I've talked about here is going to be published in an article which is not yet up but it's on – going to be published in the Bureau's monthly labor review that will be available from our website, which I have listed on this page and that will provide more information.

So while I would very much like to be able to share that article with you now it has to go through our publication process and I felt it was beneficial to give you this information as soon as we could, which is why I'm talking about it now before the article is published, but once we get the article out there it'll help to fill in some of the gaps.

But those are some of the things that I wanted to cover regarding these alternate projections. I'm sorry for all the technical problems that I and you encountered over the course of this webinar, but hopefully you were able to capture most of what I was covering and I will pause now and we will answer some questions to cover either things that I didn't cover well or did not touch on in this presentation. Don?

MR. HAUGHTON: All right. Michael, thank you. That was very interesting information. I do have one question before we get to the questions from the audience. Now, what you're presenting here is the national outlook; correct?

MR. WOLF: Correct.

MR. HAUGHTON: OK. I see a lot of people are from state and local workforce development boards, labor market information boards and whatnot. "What's the best source of information at the state and local level for projections that are happening in those states and in those local areas? Where can folks go to get information on those projections?"

MR. WOLF: So on this slide 22, the one that I have right up right now, there's a website, www.projectioncentral.com, this is a repository that has the data from all states but also links to the individual state programs. So you can either get the data specifically from this website or find the link to the program to the state website which would have contact information and more information for your specific state and local area.

MR. HAUGHTON: OK. Thank you. So let's go to questions from the attendees and I'll just start at the top. First question is, "What about occupations where it's not feasible to work remotely, what impact does that have? And then the second part of the question was, what is the impact of increased AI or automation within the economy?"

MR. WOLF: Sure. So when I'm talking about that these projections reflect the increase in remote work, we know that that's not feasible for a lot of occupations and industries, but what we're trying to show here is sort of what the potential impacts of that change would be on the industries that are affected by that.

So in some sense here, we're not necessarily saying what's happening to the workers who are working remotely, but what happens to the economy when you have more people working remotely and that's what the alternate scenario is trying to do.

We don't know – we know that there will always be certain occupations and individuals who need to work in a physical work environment and that's obviously unlikely to change, but again, we're talking about changes at the margins here. If the bureau did some – had some data on it and we saw that during the pandemic that between 20 and 30 percent of the workforce was working remotely when they were not usually working remotely.

So it's certainly not all workers and not even the majority, but it is a significant share and that does have big impacts on the economy as a whole. In terms of the impacts of automation and AI, again, that is something that it is certainly possibly that the pandemic would change the pace of adoption of automation and AI.

Our baseline projections do take automation and AI into account, but in these alternate scenarios, we're essentially not making any adjustments in the pace of adoption of automation and AI. So again, we are expecting there to be increased automation in the future, the alternate scenarios just don't vary the rate at which that automation is taking place.

MR. HAUGHTON: OK. The next question, "What time period do the major industry impact projections cover?"

MR. WOLF: So all of these projections cover 2019 to 2029 and essentially, what we're showing is the – based on the employment level in 2029 and they're trying to look at structural impact of the pandemic, not the cyclical impacts which we're seeing right now from the recession that we are currently in and we know that there are a lot of industries that are seeing short-term impacts, very significant short-term negative impacts.

Many of them have started to recover. The pace of recovery is unknown, but cyclical factors are not something that our projections try and take into account. Again, we're focusing on the long-term structural factors. So essentially, we're projecting to – in our baseline projections, we explicitly do project to a full-employment economy.

Essentially, we're projecting that the recession is over, but we're projecting to the year 2029. We don't have intermediate projections for the time intervals in between. So we don't have a projection for 2021, 2022, etc. We only have the data out to 2029 and that's, again, because we're looking at the long-term structural impact.

Not to say that we – there isn't a lot of demand and interest in what the short-term impacts are, it's just not something that our model allows us to generate.

MR. HAUGHTON: OK. Good. The next question, and I quote, "This is impact on the bottom line." I think the question here is, "Do these projections portray impact on the financial wellbeing of the industries and the occupations? I think that's how I interpret the question."

MR. WOLF: OK. So I'd say if we take a look at a slide like slide 20 here, what we're talking about is the impact on employment levels in the occupations. So the projected employment level, here I'm at slide 20, for food preparation and serving-related occupations in the moderate impact scenario is 5 percent less than it is in our baseline projection. So that's how I would say bottom line the impact is relative to what the baseline is.

MR. HAUGHTON: So we're talking employment projections, we're not talking about financial outcomes of businesses or wages or things like that?

MR. WOLF: Yes. Correct. We don't project wages; we're just looking at employment levels here.

MR. HAUGHTON: OK. We've got a number of questions here. So next question, "Can you please restate and quantify the difference between the moderate impact and strong impact?"

MR. WOLF: OK. Yes. So the two differences, one is in terms of intensity of impacts. So when I'm talking about, say, the increase in remote work, the increase is larger in the strong impact than in the moderate impact. So essentially, the changes that we're anticipating due to these factors are larger in the strong impact than in the moderate impact.

That's intensity of the impacts. The other difference between moderate and strong is the breadth of the impacts. So all of the industries that are affected by moderate impacts are all reflected in the strong impacts but there are some additional impacts in the strong impact scenario that the biggest area is the arts, entertainment and recreation sector which has impacts in the strong scenario but not in the moderate scenario.

MR. HAUGHTON: OK. Next question, and it's probably a yes or no answer, "These are the changes projected from 2019 to 2029; is that correct?"

MR. WOLF: Yes. Correct.

MR. HAUGHTON: OK. Next question, does financial and insurance activities or real estate have an impact or is there an impact on those industries and occupation? Again, financial and insurance activities and real estate.

MR. WOLF: Yeah. Those were not listed on the slide. The finance and insurance industry has very little impact. The real estate industry has a negative impact but not as large as the industries that I included on the slide. So a negative impact but not a very large negative impact.

MR. HAUGHTON: OK. Next question, "To be clear on the impact charts, are the impacts shown a difference to the baseline or a change to the baseline?"

MR. WOLF: These – the impact slides are the difference from the baseline. So the difference in percentage change. So hypothetically, if the food preparation and serving-related occupation was in our baseline projected to grow by 10 percent and the moderate impact would be growing by about 5 percent and in the strong impact, it would be growing at about 1 percent. So essentially, the difference in the projection from the baseline.

MR. HAUGHTON: Right. And then when – and this is a question from me. "When you talk about baseline projection, those are the projections that you published in September of this year and these changes, moderate, strong are a reflection of what was published back in September?"

MR. WOLF: That's correct.

MR. HAUGHTON: OK. Next question, "With regards to transportation, are these projections on support industries such as petroleum, mechanics, etc.?"

MR. WOLF: Yeah. So the industry projections would be affecting the – all occupations employed in that industry. So air transportation would include, say, pilot, flight attendants but also aircraft mechanics and baggage handlers, those types of things.

MR. HAUGHTON: OK. Next question, "Does the increase in ecommerce and food delivery not actually increase transportation and warehousing occupations? If so, why not?"

MR. WOLF: Yeah. That's a good question. So ecommerce, in some sense, does increase transportation and warehousing, but it's not a complete gain only.

So essentially, the way you could think about it is in retail, you have to get the goods from the producer, the manufacturer to the end consumer and if you're going at in-store retail, then someone is transporting it from the manufacturer usually to a wholesaler to the retail store and then the individual is taking it from the retail store to their home.

In ecommerce, usually what you're cutting out is the step where it goes from the wholesaler or the warehouse to the retail store and replacing it with a step where it goes from the wholesaler or the warehouse to the end consumer. So there's positive impacts on transportation and warehousing from ecommerce in that there's more demand for the end delivery to the customer, but there are also are some negative impacts from the – less demand to get the goods to the retail establishments themselves.

So that's partly why retail doesn't – that's partly why ecommerce doesn't show up as a strong increase in transportation and warehousing. The other factor is that transportation and warehousing includes the air transportation sector which we see the negative impacts from the decrease in travel.

MR. HAUGHTON: OK. And then a follow-up question, "You talk about delivery; a lot of those people could be gig workers, whether they're independent contractors with delivery services or people who are driving just delivering food from restaurants. Do the gig workers get captured in your occupational projections?"

MR. WOLF: Gig workers would get captured in the projections if it is their primary job. So if what someone does is, say, they drive for Uber and that's all they do to earn money, they should be captured in the projections. If it's something that they do on the side where they have a primary job, they would not be captured.

So it's – we know we're not capturing all of them, but we're hopefully capturing some. We don't have, unfortunately, a great sense of how much of it we are capturing.

MR. HAUGHTON: OK. Next question, "I think you really need to look into your crystal ball; can you say when we can expect to begin to see a recovery?"

MR. WOLF: So we don't try and forecast business cycles. So I don't know when – if you're defining recovery as return to pre-pandemic employment levels, we don't have a projection for that.

If you mean recovery in terms of beginning to have growth, we have been seeing growth for the past few months in the monthly employment data that we – that BLS has been putting out, but we are certainly not anywhere near back to the employment levels that we were at before the pandemic.

MR. HAUGHTON: OK. I think you've already answered this question but I'm going to ask it again. "Can you please elaborate the difference between moderate and strong impact?"

MR. WOLF: Sure. Let me try and phrase it a different way.

So if we have three projections, we have baseline projection, moderate impact projection and strong impact projection. Essentially, you can look at that as sort of like a – you take those three projections for any data point, it gives you a sense of the uncertainty that we see in the projection for that occupation or that industry.

And strong, we would usually expect to see being furthest from the baseline, moderate is somewhere in between the baseline and the strong.

So essentially, if we're talking about an occupation that has negative impacts, the strong would be sort of the upper end of what we think as potential impacts, the moderate would be sort of a midpoint-ish and the baseline would be, again, relatively no impacts from the pandemic on a particular occupation. I know that's a different answer to the question, but hopefully it – (inaudible).

MR. HAUGHTON: OK. Next question, "What is your take on the oil and gas extraction and oil field services sector, the impact of COVID but also on global demand conditions?"

MR. WOLF: I believe, in these alternate projections, we have very little impacts on the oil and gas sector.

The oil and gas sector in the actual data that we've been seeing over the past few months is one of the industry's that's had the smallest impact, but obviously, the tricky thing with oil and gas is it's heavily dependent upon what the global price of oil and gas is and that is very variable and therefore, employment is going to be highly uncertain just depending on what the long-term price of oil or gas will be.

So our projections, again, we didn't alter the macro scenario, which means our assumptions about oil prices were unchanged. Our projections for that sector were relatively unchanged, but it is a sector that there is a lot of uncertainty related to outside of a pandemic. The pandemic may add more uncertainty, but it's just always a highly – (inaudible).

MR. HAUGHTON: OK. Next question, "Can you break down the life, physical and social science groups, specific jobs that are in that category?"

MR. WOLF: Sure. So life scientists are primarily biological scientists and medical scientists. Physical scientists would be like chemists, environmental scientists, physicists. Social scientists would be economists, psychologists, sociologists. That is one of the groups that we see the most growth and the growth is coming primarily from the life scientist side of things and primarily the biological and medical scientists.

MR. HAUGHTON: OK. Next question, "When will each state review and comment on these projections?"

MR. WOLF: So we're providing the data to the states and then it's going to be up to the states to determine how they proceed with – how they proceed.

MR. HAUGHTON: OK. And again, you can relate back or take a look at the state projections link that Michael provided at the end of these PowerPoint presentations.

Next question. "What is the projected impact on community and social services; and can you provide examples?"

MR. WOLF: Community and social services is one occupational group that we did not see significant differences between the baseline and the alternate scenarios, so just not one that these factors impacted.

MR. HAUGHTON: Okay. The next two questions, I'll just go ahead and combine since they're asking the same thing but on different occupations. "What is the outlook for data scientists? And also what's the impact on higher education?"

MR. WOLF: So data scientists were one of our fastest-growing projections in the baseline, and I think in the alternate scenarios there's a slight uptick for them as there is for many computer mathematical occupations but not a significant change in that particular one.

And then the long-term outlook for higher education; again, education was not an industry that was (significantly affected ?) by the alternate projections. I tried to focus in this presentation on the differences from the baseline. There are a lot of occupations and industries that did not have many differences and therefore we did not talk about here.

We still have projections for all of those occupations and industries and I'd encourage you to take a look at our website to get the details on the full set of occupations and industries beyond what I talked about in this presentation here. Again, we cover about 800 occupations, so a whole lot more data than I could possibly try and cram in here.

MR. HAUGHTON: OK. And again I've got two more questions that are very similar here. "Essentially when is the monthly labor review article going to be released; and how can people be notified when the article is released?"

MR. WOLF: The article is going to come out – I don't have a specific date. I hope in the next few weeks, but I don't have a specific date for when that's going to be coming out.

There is a way to sign up on the BLS website to get notified about all articles that are released in the monthly labor review; unfortunately not on this specific article. I don't know – we can certainly put the link to the article when it comes out on the WorkforceGPS website. I don't know, Don, if there's a way to announce it more specifically than that.

MR. HAUGHTON: Yes, we can post it on the LMI-central portion of WorkforceGPS and we'll be sure to let the regional offices and state LMI directors know that it's out there and encourage them to disseminate the information as well.

OK, next question. It's a little wordy and long but I'll just go ahead and read it. "How were the percentages calculated for the occupations most impacted in the food service, restaurant, and hospitality industries?" And then the second part is, "Is it based on survey data or assumed impact based on rational review?"

MR. WOLF: OK. So all the projections data is an output of our projections models. So we feed in historical data but we do not survey companies about their expected future hiring decisions. It's solely based upon the model. So the percentages and all the data that I'm talking about here are outputs of the projections models.

MR. HAUGHTON: OK. Next question has to do with Amazon, UPS, FedEx, etc. And the question is, "What industry would the fulfillment-delivery-transport companies be included in?" Like, what industries would we classify Amazon, UPS, and FedEx?

MR. WOLF: So they would be included broadly in the transportation and warehousing industry, and then there's specific components of that where they make all their – separate components for warehousing versus I believe most of the actual delivery workers are in the couriers and messengers industry.

MR. HAUGHTON: OK. Next question. "Why would healthcare practitioners and techs be impacted? Because there are more telemedicine, or is there another reason?"

MR. WOLF: Yes. I think the impact on healthcare, although small, I think we did have some impacts because of increased telemedicine; again, sort of with the idea that both people and providers were exposed to telemedicine now, which might cause a shift in the adoption of telemedicine from our past assumptions. Basically because people were forced to do it, that might expose them to it and make them more comfortable with it than if they were just proceeding on the previous path about adoption of telemedicine.

MR. HAUGHTON: OK. Great. Next question. "Do you see more work-from-home type jobs being increased in a positive way?"

MR. WOLF: So the types of jobs that work from home, they're scattered throughout the 800-odd occupations we cover, so it's a little hard to generalize in that. But certainly a lot of the impacts, particularly with negative impacts that we were talking about, were in occupations that do not primarily work from home. The resale, the food service, the accommodation-type occupations are primarily not work-from-home type occupations.

MR. HAUGHTON: And the next question I think I can answer for you, if you want to take a second. "Confirming – this information for the entire nation?" Yes. The information that's presented here is national-level data.

So the next question here is, "Does this data look different in Chicago, or where can I find information on Chicago?"

MR. WOLF: The Projection Central website that I have up here should have a link to the Illinois labor market information office, which would have state and local data for that area.

MR. HAUGHTON: OK. The next question, "How should this information be leveraged when compiling HPO lists?" I'm not sure what HPO stands for. Michael, do you have any idea what HPO lists stand for?

MR. WOLF: No.

MR. HAUGHTON: OK. Maybe whoever asked that question, if you could just let us know what an HPO is and maybe we can come back to that.

Next question, "Can you please highlight some occupations" – OK. We've already answered that question as well.

OK. Question 32, "Just to confirm, the data presented here with the two scenarios is not available; when will it be released?" I think we've already answered that one as well.

Next question is, "Would it be possible to send a follow-up email to everyone who attended this webinar?" That may be difficult. I think we touched on it a few minutes ago; we will put it into WorkforceGPS LMI central arena. We'll let our regional partners and our state LMI shops know when the MLR article is out. You can also put a Google reminder (sic; Alert) out there to search for "BLS monthly labor review" articles.

Whenever a new one pops up, Google will alert you.

OK. Let's see. Question 36. "Will there be a way for states to publish alternate scenarios on the Projection Central website, or should they just publish a core set of projections on that site but provide any alternates on their own LMI websites?"

MR. WOLF: So BLS does not run the Projection Central website, so that would be a question for – (inaudible).

MR. HAUGHTON: Right. And I can elaborate a little bit on that, since ETA works with the states in developing state-level projections.

Any projections that the states develop would be up on the Projection Central website. Something as Michael has demonstrated here, any alternates on the effects of COVID, may or may not be included in there. We've given the states a little bit of latitude on what to include. If you have any questions about a state's projections, you can always contact the state labor market information office and they would be more than happy to talk with you about their state-level projections, what assumptions they made, and if they could elaborate on COVID and how it impacts the projections that they have developed.

MR. HAUGHTON: OK. Question 37. "Any thoughts about changes in education, such as remote learning for K-12 or higher education?"

MR. WOLF: Yeah. So remote learning is something that I think we did not take into account any changes in remote learning practices for these alternate scenarios. I know there's some discussion about that, but I think we were not comfortable adding it to those scenarios that we produced here.

MR. HAUGHTON: OK. Referring back to the HPO question; HPO stands for high priority occupational lists. Where did that question go – I think it – OK. "How should this information be leveraged when compiling high priority occupations lists?"

MR. WOLF: So the way I would sort of interpret this data is, again, if you see significant differences between the baseline and the alternate, what we feel is that there's a high degree of uncertainty about the projection for that occupation.

If it was an occupation that was on your high priority occupation list and you feel that that uncertainty means that it should no longer be on that list, you could take that into account. But I think that would have to be a decision that whoever compiles the list makes.

MR. HAUGHTON: OK. Moving on to question 38. "If impacts on residential construction would be mostly positive – for example, people upgrading to larger homes or people moving to the suburbs from the city – why would the strong impact growth scenario for residential construction on slide 11 be lower than the original projection of 3.6 percent?"

MR. WOLF: Yeah. So essentially what that's probably reflecting is spillovers from other sectors. Again, because of the way the model works, impacts on one industry can have residual impacts on another industry. And while there were positive impacts from residential construction in the strong scenario, because there were more negative impacts across a wider range of industries, it ended up pushing that number down.

I think my takeaway on that would not be to focus too much on that difference there because, again – the main takeaway that I have on construction is that non-residential is much more (significantly ?) affected than residential. The models will always put out results that taking into account lots and lots of different factors and it's impossible to piece it back what the impact of each individual factor is because we're talking about thousands of equations and models and the like.

But the summary would sort of be that residential construction, there's limited impacts; somewhat positive in the moderate, somewhat negative in the strong. But for non-residential it's a significant negative impact in both scenarios.

MR. HAUGHTON: OK. I'm going to keep question 39, and we'll go to question 40. "Can you briefly explain the methodology behind employment projections on long-term occupational projections?"

MR. WOLF: So we developed it through this six-stage model that I talked a little bit about earlier.

Essentially what we're trying to do is capture where employment would be based upon our macroeconomic scenarios for 10 years out in the future, where we're assuming a full employment economy and we're trying to capture what the structural changes would be.

We capture occupational employment by looking at the changes in industry employment and looking at the changes in what types of workers industries employ. So essentially you can derive occupational employment as a combination of two things; one, how are the industries that an occupation is employed in growing or declining, and then two, within those industries, are employers employing more of this particular type of occupation relative to other occupations or less of this type of occupation relative to other occupations?

And the combination of the industry growth and the change in what we call occupational staffing patterns – which is essentially what types of occupations an employer, an industry, uses to produce its output.

MR. HAUGHTON: OK. I'm going to skip around a bit, our questions here, since we only have five minutes. I'm going to go to question 43. "Michael, in your opinion what was the most surprising find from this study?"

MR. WOLF: Hmm. Interesting question. I would probably say – well, it's hard for me to say "surprising" I think because when I knew what a lot of the inputs were, I anticipated what a lot of the outputs would be.

But what I think this exercise as a whole shows is that there are particular sectors of the economy that are highly likely to be impacted by this, but that there are a lot of sectors which are not expected to be significantly impacted by the pandemic. I think that's different from what the current data is saying because the current data is affected by the recession and the recession's cyclical impact is overly broad, hitting on a lot of different occupations and industries. So long-term structural changes may be more targeted to key occupations and industries.

MR. HAUGHTON: OK. I'm going to jump to question 44. "If a vaccine comes quickly, do you see the projections to address dramatically or recovery will be slow for many occupations?" So I guess what they're asking is what effect will the vaccine have on the numbers that you just presented with us today.

MR. WOLF: Yeah. So in both alternate scenarios we basically assumed there would be a vaccine and the differences would be reflecting maybe how long it took to get a vaccine or how effective it was. But essentially the longer people were in a state of changed consumer spending behavior, the more likely those changes may be to persist.

So it's certainly possible that if a vaccine comes quickly and is highly effective, things could end up being more closer back to normal than we may have foreseen a few months ago. But it's just an area where there remains a lot of uncertainty and we think that that the information we have now is very different than the information we had a couple months ago, which was very different from the information that we had at the beginning of the year.

And we expect that things will continue to change quite rapidly in the near future, so again, the 2020 to 2030 projections that we put out next September will look somewhat different from these alternate scenarios because we'll have more information that we can incorporate into those projections.

MR. HAUGHTON: OK. I've got two more questions that I'd like to share. Number 47, and this is interesting. "Do you have any information on the shift of the workforce from one occupation to another? For example, waiters, waitresses, moving into other occupations? Do you have information on that with regard to the projections?"

MR. WOLF: No, we do not. The projections are projections of employment level in the occupation. We don't have good data on the dynamics of how individuals move from occupation to occupation or in and out of the labor force to answer that specific question.

MR. HAUGHTON: OK. And the last question – and I'm sorry; we've got over 100 questions and I'm just cherry-picking, and this has to be the last question for today. Question 52. "Programmatically, what impact while using OES staffing pattern data from May 2020 and the QCW benchmark employment have on reducing projection estimates?"

MR. WOLF: So the May 2020 OES staffing pattern will have one-sixth of the data collected during the pandemic. I haven't seen the data yet so I'm not sure how large the impact will be as a result. That will be something that will need to be looked at when using that data.

And then the other question is what period the GCEW data reflects. If the OES is one-sixth within the pandemic, if the QCW more or less within the pandemic then that could have particular impacts but it depends on what specific QCW period is being used.

MR. HAUGHTON: OK. We're at 1:30, and Michael, you talked for well over 90 minutes. I appreciate you coming in to the workforce system audience and presenting this very interesting information.

And just to plug your work, again it'll be on the monthly labor review; and Michael is also presenting something very similar, I believe it's on December 8th, through the LMI Institute. He's giving a similar presentation on the COVID-19 and BLS employment projections. So if you would like to hear this presentation again or have the opportunity to ask more questions of Michael, please take a look for the LMI Institute presentation on December 8th, I believe it is.

So with that, Michael, thank you very much.

(END)