

# UNITED STATES INTERNATIONAL TRADE COMMISSION

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In the Matter of: )  
 )  
NEW EVIDENCE ON THE EFFECTS OF ) Inv. No. 332-599  
SERVICES TRADE AT THE WORKER )  
LEVEL )

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 SERVICES TRADE AT THE WORKER )  
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Remote Hearing  
 U.S. International  
 Trade Commission  
 500 E Street, S.W.  
 Washington, D.C.

Monday,  
 August 5, 2024

The seminar commenced, pursuant to notice, at  
 12:00 p.m., before the United States International Trade  
 Commission.

PARTICIPANTS:

USITC:

JENNIFER POWELL, Moderator  
 MARTHA LAWLESS, Chief, Services Industry Research,  
 Office of Industries  
 TAMAR KHACHATURIAN, Economist

SHARON BELLAMY, Supervisory Hearings and  
 Information Officer  
 TYRELL BURCH, Management Analyst  
 PRISCILLA THOMPSON, Management Analyst

Seminar #6PAGE

New Evidence on the Effects of Services Trade  
at the Worker Level

Presenter: Alex Jaax and Elisabeth Van Lieshout, OECD 5

Discussant: Tamara Khachaturian, USITC 40

Moderator: Jennifer Powell

P R O C E E D I N G S

(12:00 p.m.)

1  
2  
3 MS. POWELL: We seem to be leveling off a bit, so  
4 I'm going to start by welcoming all of you to the sixth and  
5 final seminar of the 2024 USITC DE Seminar series.

6 And I'm also going to start by passing it over to  
7 Martha Lawless, the Chief of the USITC Services Division, who  
8 is going to introduce today's presenters and provide a  
9 rundown of the schedule for the seminar.

10 MS. LAWLESS: Hello, everyone, in the early evening  
11 in Europe, and here on the West Coast it's quite early, but  
12 I'm glad we could manage to bring everyone together.

13 Welcome to the postponed sixth and final seminar in  
14 our 2024 seminar week for Distributional Effects.  
15 Unfortunately, we had to postpone it from July 19 because of  
16 the CrowdStrike outage. I hope many of you were not too  
17 badly affected, but we had to do that.

18 We're focusing on Distributional Effects of U.S.  
19 Trade and Trade Policy. Many of you have listened to one or  
20 more of the earlier five seminars last month. Thanks for  
21 joining us again. In case this is the first seminar you're  
22 joining in the series, I should explain that these seminars  
23 are a part of the USITC's multi-year work on Distributional  
24 Effects of Trade.

25 The first report was published in October of 2022,

1 and we're now working toward a second report that will be  
2 published in January 2026, with a further four reports  
3 scheduled at regular intervals out until 2035. So it's a  
4 long-term endeavor.

5 Jen, there is a -- if you could help put the URL  
6 for the DE home page in the chat. There is a landing page  
7 for our scheduled events in this series.

8 Our speakers this morning or rather this evening if  
9 you're in Paris are Alexander Jaax and Elisabeth Van  
10 Lieshout, both of the OECD. We're very grateful they could  
11 join us today. Clearly, there are many other things to be  
12 doing in Paris. And I'll give a quick summary.

13 Alexander Jaax is a trade policy analyst at the  
14 OECD's Trade Policy Division. Alexander's recent work  
15 focuses on questions related to trade costs for services and  
16 implications of services trade for workers. He also  
17 contributes to analyses of global value chains and  
18 multinational enterprises. He previously conducted  
19 post-doctoral research on multinational enterprises at the  
20 London School of Economics, and he has been a visiting  
21 researcher at the National University of Singapore and  
22 Harvard's Kennedy School. He holds a Ph.D. in Economic  
23 Geography from LSE.

24 Elisabeth Van Lieshout is a trade policy analyst at  
25 the OECD's Trade Policy Division. She conducts research and

1 works with member states on a wide range of trade issues,  
2 including trade and services, inclusive trade, and global  
3 value chains. She obtained her Ph.D. in Political Science at  
4 Stanford studying preferential trade agreements.

5 Alexander and Elisabeth will be presenting the  
6 paper shown on the screen. They will be splitting the  
7 presentation. The paper very insightfully looks at the  
8 effects of services trade on various groups of workers, which  
9 makes our team at the ITC extremely happy because there's not  
10 so much work on this.

11 The paper includes analysis of the effects of  
12 labor -- effects on labor markets of both cross-border  
13 services trade and trade through foreign affiliate sales, the  
14 two main dimensions of services trade.

15 The Services Division at the ITC was fortunate  
16 enough to have Alex and Elisabeth present their preliminary  
17 results here in person last October, and we're delighted that  
18 they are presenting their paper to a wider audience in our  
19 second Distributional Effects of Trade and Trade Policy  
20 Seminar Week.

21 I'll turn it over now to Alexander and Elisabeth.

22 MR. JAAX: Thanks so much, Martha. Thank you. So  
23 we are very grateful for the opportunity to present this work  
24 here today. We've listened to quite a few of the seminars in  
25 July, and we found them hugely inspiring and highly relevant

1 to our work. We've also very much benefitted from the  
2 feedback we received last October in D.C. from Martha and her  
3 team. Very much appreciated.

4 We just need to add briefly that this work is still  
5 very much in progress, and the results have not been approved  
6 by OECD member countries yet. Having said that, we are very  
7 excited about the opportunity to present to this expert  
8 audience, and we're looking forward to the discussion.

9 Let's get started by taking a step back and  
10 reminding all of us of the evolution of the global economy  
11 and the global trading system in the last two, two-and-a-half  
12 decades. What you see here is global GDP indexed relative to  
13 the starting year 2000, and you can see the global economy  
14 became bigger.

15 Now, once we add merchandise trade, it's also quite  
16 obvious that global trade in goods and commodities has  
17 expanded, has grown even faster than the global economy. But  
18 what we obviously care about today here is services trade,  
19 and once I add the green line, which refers to services  
20 exports of the world as a whole, it becomes clear that  
21 something rather fascinating happened around 2013. So you  
22 can see that the green line decouples from the dashed gray  
23 line, meaning that services trades became much more dynamic  
24 and really took on a new role around the mid-2010s.

25 Really, it took on the role as the driver of the

1 global trading system and became much more dynamic than  
2 merchandise trade, and that's even visible after the big drop  
3 we experienced for services trade during the COVID period.

4           So quite a striking picture. And if you combine  
5 that with the fact that three out of four people in OECD  
6 countries work in services, it is very much clear that  
7 services trade is a growing economic force that we should  
8 care about and that we should really understand regarding its  
9 impact on workers and labor markets, and yet we know  
10 relatively little about it.

11           If you look at the empirical literature, you could  
12 even say that services trade are a bit of an unsung giant in  
13 this debate on trade and labor, and this is clearly visible  
14 if you look at the most highly cited papers in the  
15 literature, and I'm partly thinking of papers that have  
16 inspired some of the presentations we saw in July, very good  
17 papers, yet they often share a common focus on goods trade.

18           We even looked at recent reviews, one written by  
19 researchers at the USITC, focused on the effects of trade and  
20 trade policy at the local economy level, another one a recent  
21 academic review from 2017, and the overall tendency is that a  
22 small share of the papers empirically address services trade,  
23 roughly two out of 40 for the USITC review and five out of 45  
24 for the academic review.

25           So, clearly, services trade seems to take a bit of



1 a backseat in the empirical literature, which really  
2 contrasts quite heavily with its economic relevance that is  
3 growing, as we have seen. Yet, the empirical literature on  
4 services trade is not dormant. There have been a few  
5 exciting contributions in recent years, and if you follow the  
6 distributional effects seminar series already last year, you  
7 will be aware, for example, of the very interesting work  
8 conducted by Liu & Trefler, so it is an evolving literature.

9           And what do we intend to contribute. What is the  
10 way we intend to look at this? What is our approach? Well,  
11 we very much come from the angle of an international  
12 organization. This means we adopt a broad perspective. We  
13 try to cover many countries. Right now, it's 28 countries  
14 with potentially a few more and quite a long period, 14  
15 years. And we look at employment outcomes, including  
16 employment itself, but also contract conditions, such as  
17 self-employment or part-time, and we explore variation in the  
18 effect across different groups of labor.

19           When I say we adopt a broad perspective, I  
20 simultaneously refer to the way we define services trade. So  
21 we look primarily in this paper at cross-border trade, which  
22 is also known as Mod 1 in the services lingo, but we also  
23 have a part of the analysis dedicated to trade through  
24 foreign affiliates, or Mod 3.

25           We additionally also incorporate an element drawing

1 on information on input/output linkages put differently, and  
2 when measuring exposure to trade, we take a two-pronged  
3 approach where we say you can define exposure based on the  
4 sector an individual works in but also the occupation of an  
5 individual, and that's a point we will return to in a few  
6 minutes.

7 Before I get into why we're doing what we're doing  
8 and how exactly we're doing it, I'll give the impatient ones  
9 amongst you a high-line summary of our main findings.

10 We do find a positive association between services  
11 trade exposure and employment, and this is particularly and  
12 most clearly visible for imports of intermediate inputs, so  
13 services that get incorporated into production processes.

14 Our results indicate that services trade is also of  
15 relevance to the conditions experienced by workers going  
16 beyond just whether they are employed or not. This relates  
17 to their income, also to the type of firms they work in, for  
18 example. And we see heterogeneity across groups of workers  
19 in particular regarding their level of skills as defined by  
20 the occupation they work in, as well as individual  
21 characteristics, such as gender, for example.

22 And before getting to the empirics, I'd like to  
23 give us a brief review of why we would expect services trade  
24 to matter to workers. I won't give you a fully fledged  
25 theoretical motivation or model, but it's still important to

1 remind ourselves of why we think services trade might affect  
2 workers on the ground and in the firms they work in.

3           So, for exports, the story or the perspective  
4 initially seems quite clear. If you're a firm that starts  
5 exporting, you experience an increase in market size,  
6 allowing you to generate higher sales, which would translate  
7 into greater labor demand. And as you expand your  
8 production, you may generate firm level economies of scale,  
9 which could allow you to lower the price of whatever it is  
10 you're exporting, which could then help you to expand your  
11 market share and might then as a consequence have a further  
12 beneficial effect on the creation of new jobs.

13           And also think about the types of workers that  
14 might be affected, and as you expand production, you would  
15 expect that the increase in labor demand is geared towards  
16 those skills that are heavily or intensely used in the  
17 production, and this provides a channel for occupation-wide  
18 spillover effects.

19           So think of an export boom in the software  
20 industry. Many people with coding skills, IT experts, are in  
21 high demand, and this could have implications for IT experts  
22 even if they do not directly work in the software industry  
23 but maybe in an engineering consultancy or a manufacturing  
24 company.

25           There's a further set of channels operating at the

1 local economy level. We do not zoom in on this one in this  
2 paper, but it's still very much part of our perspective, and  
3 this relates on the one hand to agglomeration economies, so  
4 we know from examples such as Silicon Valley or also  
5 Bangalore that export-driven growth can give rise to  
6 localized productivity gains at the cluster level.

7 Similarly --

8 (Technical interference.)

9 MR. JAAX: -- can have spillovers on other local  
10 sectors, and that could relate to sectors that locally --

11 (Technical interference.)

12 MS. POWELL: Alex, we seem to have lost audio.

13 MS. VAN LIESHOUT: We'll give Alex a few seconds to  
14 come back and, otherwise, I can take over the presentation.

15 MS. POWELL: Great. Thank you, Elisabeth.

16 MS. VAN LIESHOUT: Let's see, assuming I can  
17 control the slides. I don't know if there's a way to stop  
18 Alex from sharing the slides so that I can share them on my  
19 end because, otherwise, there's no way for me to, you know,  
20 advance along.

21 MS. POWELL: I think I have a copy of your slides,  
22 so I can see --

23 MS. VAN LIESHOUT: Well, I have them as well, but I  
24 think, if I try to share, will it override his?

25 MS. POWELL: That's what I was going to say. I

1 think, if I try to share, potentially --

2 MS. VAN LIESHOUT: That might do it? You are the  
3 host.

4 MS. LAWLESS: Yeah. I think --

5 MS. VAN LIESHOUT: I can try it -- hold on. There  
6 we go.

7 MS. POWELL: There we go. Terrific.

8 MS. VAN LIESHOUT: Let me try putting this in full  
9 screen also. All right. Are you seeing this in full screen  
10 now?

11 MS. POWELL: Yes.

12 MS. VAN LIESHOUT: All right. Let me click to  
13 where we were at and take over.

14 All right. So these were the effects of exports.  
15 And so the story here is more of an obvious positive one.  
16 The more complicated story in the literature in kind of the  
17 theoretical perspective comes on the import side of things.

18 On the one hand, and this is maybe the first thing  
19 you think of, there's a substitution effect whereby, if you  
20 start importing services, that demand gets filled by firms  
21 abroad, and so there's less demand for domestic services.  
22 Those companies are going to decrease their outputs, and so  
23 there's less need for local workers and it has a negative  
24 effect on employment. And this is what people have in mind a  
25 lot when thinking about the effects of imports.

1           There's also, however, a possible effect on the  
2 other side, which is productivity. So this import of  
3 services can be used not just for final demand but also as an  
4 input into production for firms throughout the economy in any  
5 given sector, and those imports are likely to be both lower  
6 cost and higher quality; otherwise, you know, why bother,  
7 which in turn lets those companies scale up their production.

8           And you have all of the positive effects you get  
9 from an increase in outputs and an increase in sales and so  
10 possible positive effects on employment because of imports  
11 through this kind of second channel. Now how these two weigh  
12 up against each other or add up is an open question  
13 empirically and it will depend on the context.

14           Now one final thing we want to highlight is, why  
15 might the effect of services look different from  
16 manufacturing, right? Is this just a kind of level  
17 difference, or is there really something different in the  
18 dynamic?

19           And one possible difference is this productivity  
20 effect, the idea that generally it's been found sort of more  
21 in the industrial organization literature that services are  
22 particularly important when it comes to things like  
23 innovation and scaling up, and so this ability to import  
24 services as an input can really have this kind of knock-on  
25 effect in a way that manufacturing might be in a more limited

1 way able to do.

2 Another big difference is the skill intensity.  
3 Services and particularly those services that are most  
4 tradable are also known to be really skill-intensive. And  
5 so, when we start thinking about distributional effects and  
6 how this maps onto different parts of the economy, again, it  
7 could be that there's kind of differences because of the  
8 skill pattern and which workers is it that are going to be  
9 able to take advantage or not when there's going to be trade  
10 taking place.

11 So to look at that a little bit more -- well,  
12 actually, now, first, I'm going to give you our data. Then  
13 we're going to show you some descriptives about these skill  
14 things. So let's first talk about the data that we're  
15 working with.

16 So the first thing we need is the trade exposure,  
17 so what do we know about who is experiencing trade. So we  
18 look at services trade at the sector level, where we have  
19 three different data sources that we're using. First --  
20 well, two data sources but in three ways.

21 First, we just need gross imports and gross  
22 exports, which we take from the OECD's Inter-Country  
23 Input/Output Tables where we have all of that at a kind of  
24 bilateral sectoral level.

25 Now we also want to know this kind of channel of

1 services working as an input, and for that, we need the kind  
2 of input/output side of these input/output tables where we  
3 can also see the supply chain linkages for a given sector,  
4 how much does it use, and the inputs from various other  
5 sectors in its production process and where are those coming  
6 from; are they coming from abroad or not.

7           Lastly, to be able to look at trade through foreign  
8 affiliate sales, or this Mode 3 trade and services, which is  
9 a pretty big part of how services get traded, we use the  
10 OECD's analytical AMNE database, which looks at the  
11 activities of multinational enterprises and their kind of  
12 affiliates abroad.

13           Now the main measure we use is the average trade  
14 flows in a given sector over the previous two years to kind  
15 of take into account some of the shocks that happen to trade  
16 data, and what we'll show you today is just those shocks  
17 normalized by -- sorry, those flows normalized by logs, but  
18 we also have looked at normalizing trade by either employment  
19 or by output in a sector and find broadly similar results  
20 doing that.

21           Now, as Alex already mentioned, we don't just look  
22 at the sector, we also look by occupation, and this is  
23 because, for most people, when they experience the labor  
24 market, they're just as much looking at what occupation and  
25 they're looking to fulfill what do I have skills in rather



1 than which sector do I particularly want to work in.

2           So, to calculate this, we take a weighted average  
3 where we look for a given occupation, how is it distributed  
4 across different sectors and, in particular, across different  
5 services sectors. And so we take a weighted average  
6 depending on those employment shares to get to an occupation  
7 level exposure that takes into account how exposed are those  
8 sectors in which this occupation is going to most commonly be  
9 fulfilled or taking place.

10           Now the other part of the equation is measuring  
11 these labor market outcomes, and for this, we use labor  
12 market surveys, which are kind of a nice data source that's  
13 available across a lot of different countries and in somewhat  
14 standardized formats, which does take this really broad  
15 coverage that we're looking for.

16           For the data we have today, these are 22 European  
17 countries, five Latin American countries, and then the U.S.  
18 is one of the big countries in there as well. And we've  
19 amassed, looking at this over a period of 14 years from 2008  
20 to 2021, over 56 million individual observations, with about  
21 94,000 per country per year as a median. So there's this  
22 really large data that we're working with to be able to get a  
23 broad sense as to how a large group of workers is being  
24 impacted.

25           And these labor force surveys, what's nice about

1       them is we get information about both the industry and the  
2       occupation someone works in, as well as a lot of information  
3       about themselves, their demographics, their working  
4       conditions, a lot of different outcomes.

5               Now we got to look at this data at a few different  
6       levels. So we have their exposure by the services sector,  
7       and so these are 11 different sectors that we're looking at.  
8       Given the type of data we have, these are relatively  
9       aggregated.

10              And then we're looking at occupation. These are  
11       one-digit ISCO occupations for those who care about the  
12       technical side, but there's nine of those.

13              And then, when we go and look at the employment  
14       outcomes, the aggregated unit we look at is the Sector  
15       Occupation Group, which gives us 99 of them per country per  
16       year.

17              But then, for other outcomes beyond employment, we  
18       can look instead at the level of the worker, and so you get  
19       these more detailed kind of 56 million observations directly  
20       into the regression.

21              Then, before we go into those regression results,  
22       just a few descriptives to kind of set the scene and give you  
23       a little bit more substance as to what this services trade  
24       landscape looks like. Who are these people being affected?

25              And we can look first at the exposure to different

1 services sectors, and as kind of the motivating graph Alex  
2 started with already suggests that there's been a pretty big  
3 increase in the exposure to services trade, so we're looking  
4 here at the X axis at the average trade per employee that we  
5 have, and there's an increase for every single sector.

6 I mean, at the top, there's going to be some  
7 perhaps not-so-surprising candidates, transport,  
8 communication, financial services, that are both highly  
9 tradable and have become even more tradable over this time  
10 period.

11 But, even at the bottom, the services we think of  
12 as generally not particularly tradable, like education and  
13 healthcare, relative to their starting level have also seen  
14 quite a big increase, and so this is kind of an  
15 across-the-board thing going on, but there's clearly some  
16 sectors where this is concentrated.

17 Now we can switch to the occupation level exposure  
18 measure that I told you about but now looking kind of at the  
19 general changes there, and the most exposed occupations are,  
20 for example, clerical workers but also operators and  
21 assemblers. This is a lot of transport workers, whereas, at  
22 the bottom, we have people doing kind of professions more  
23 tied to goods like skilled agriculture and crafts that are  
24 less exposed to services trade, but, again, what we see is  
25 across the board there's an increase from 2008 to 2019.

1 That's a kind of constant we have here, is this general  
2 growth in services trade exposure.

3 Now one thing I told you earlier but that I wanted  
4 to show you empirically is that services are relatively  
5 skill-intensive, so, here, we have both those services  
6 sectors but also the other sectors in our analysis.

7 And on the left-hand side, there's a measure of  
8 skill by occupation -- sorry, by education on the left. That  
9 is the share of people who have what you can basically think  
10 of as a college degree or the local equivalent of that. And  
11 we see these very tradable services all the way at the top as  
12 being really, really skill-intensive, the exception being  
13 transport, which is not so skill-intensive but also highly  
14 tradable.

15 On the right-hand side, there's skill by  
16 occupation, where we're measuring the kind of -- the  
17 different occupation groups get classified by the ILO as  
18 being high- or low-skilled. And, again, we see a very  
19 similar pattern that the highly tradable, highly  
20 skill-intensive sectors are all concentrated at the top, and  
21 these are where a lot of the action is.

22 And we see this as well when we look at, instead of  
23 levels, the changes, so now we're looking at more detailed  
24 sector occupation groups, the one that most of our analysis  
25 focuses on, and we compare the exposure in 2008 to the

1 exposure in 2019 and kind of looking at a distribution of  
2 those depending on what share of workers has a college degree  
3 or the equivalent to that.

4           And these might be a bit tricky to read, but the  
5 takeaway is that the red line representing kind of sector  
6 occupation groups where more than 40 percent of workers have  
7 a college degree is shifted much more over to the right,  
8 whereas the blue line for groups where under 10 percent of  
9 the workers have a college degree are much moved to the left  
10 and so seeing much lower changes or in some cases even  
11 decreases, whereas the big increases in services trade are  
12 really concentrated in those highly educated, highly skilled  
13 sector occupation cells.

14           So, with that, I'm going to jump us into the  
15 results we find from all of this setup after we do all of  
16 this data work. And as Alex already said before, but I do  
17 want to repeat these, these are preliminary results, and some  
18 of these are hot off the presses, things we ran last week.  
19 But we think it's interesting to show them to you at this  
20 stage and kind of get your take as to how you interpret and  
21 take away all of this.

22           Before we get to kind of the fun, exciting part,  
23 though, a couple technical things that we've got to get  
24 through. So the model specification we have for the  
25 aggregate level results, so those would be the employment

1 ones, is what I have for you here first, which is so an  
2 outcome at the sector/occupation/country/year level, and then  
3 the main thing we're looking at here is this Beta 1, the  
4 coefficient on services trade exposure, and that's what I'm  
5 going to show you in all of the graphs from here on out. And  
6 so that shows us straight exposure is going to be either at  
7 the level of sector or the level of occupation for the  
8 previous two years averaged.

9 Now, in terms of causal inference, what we're  
10 trying to do here is a pretty demanding set of fixed effects.  
11 That's where we're trying to get our leverage. And the first  
12 one of these and probably the one doing most of the work is  
13 the country sector occupation fixed effects. This is a  
14 pretty demanding one. We're capturing here anything  
15 particular about this country and this sector and this  
16 occupation within that sector and within that country.

17 So you can think here, for example, of we're  
18 looking specifically at managers in the financial services  
19 sector in France, or we're specifically at, you know,  
20 administrative and clerical workers in the education sector  
21 in the U.S., et cetera, et cetera. These are small, small  
22 cells, and we're accounting for anything about them in terms  
23 of the outcome, so the employment, for example, and in terms  
24 of services trade, so what at the outset is the kind of level  
25 of tradability and level of kind of trade exposure seen here.

1 And so we're really looking only at changes over time within  
2 those small units.

3 Now, to capture some other changes over time, we  
4 have three sets of year fixed effects, so the country year,  
5 the sector year, and the occupation year where the country  
6 year is capturing kind of any country level shock. So this  
7 might be the economy is doing really well, or it might be  
8 we're adopting a new labor law, anything of that kind we're  
9 taking into account.

10 Then the sector year fixed effect you can think of  
11 as taking into account, for example, the increase in  
12 tradability of certain sectors across the world over time.

13 And, lastly, the occupation year fixed effect might  
14 capture, let's say, increases in the demand for certain  
15 skills within an occupation or changes in the availability of  
16 those skills in the country and anything like that.

17 So, after we take all of that out, the variation  
18 you're left with is changes in the services trade for a given  
19 country sector occupation cell that's not already accounted  
20 for by general country sector or occupation level trends.  
21 And then we cluster the standard errors either by the country  
22 sector or the country occupation depending on where the  
23 services trade exposure is taking place.

24 Now, after we have these general or more aggregate  
25 level outcomes, we're going to move to individual level

1 outcomes, and the setup here is almost identical, but a  
2 couple changes I want to highlight for you. So now we have  
3 the individual embedded in their country sector occupation  
4 year cell with all of the same fixed effects and the same  
5 measures of services trade exposure.

6 The one thing that's being added is some additional  
7 controls. Since we can't do fixed effects at the individual  
8 level, which we might kind of ideally want in a perfect  
9 world, instead we'll account for some of the main things that  
10 are going to predict labor market outcomes, so gender,  
11 education, and age, to kind of take that out of the equation  
12 and be able to get a little bit closer to just the effect of  
13 services trade.

14 So let's move to some of those results. The first  
15 bundle of results we're going to look at is employment. This  
16 is what a lot of this literature has been focused on. This  
17 is what we believe a lot of the policymakers that we kind of  
18 routinely speak to are most interested in, and so it seems  
19 like a logical place to start.

20 And so the simplest thing we can look at here is  
21 just the effect of exports on log employments. So, here, we  
22 have in the two columns the coefficient when we look at the  
23 exposure by sector or when we look at it by occupation, with  
24 on the X-axis the marginal effect on log employments of the  
25 given treatment that I'm showing you in the Y-axis, which in



1 this case is just services exports.

2 And when we look at the sectoral level, we indeed  
3 see a positive coefficient, so we see that more trade, more  
4 exports is associated with more employment in that sector  
5 occupation cell. In this particular setup, we don't see that  
6 at the occupation level, though there's other setups where we  
7 do also see that occupation dynamic kind of flowing through.

8 And to some extent, you might think that this is  
9 somewhat obvious: exports kind of create opportunities and  
10 therefore create employment. But often in this literature,  
11 that's kind of left to the side and the focus is just on  
12 imports and all the things they do or don't do, so we think  
13 it's an important place to start that kind of trade is both  
14 exports and imports, and services exports certainly seem to  
15 be a kind of opportunity for employment in OECD countries.

16 Now, next, we can look at imports, and, here, we  
17 conceptualize imports in two different ways. The first is  
18 the one you might be more used to, which is just services  
19 imports in the same sector, so this is directly analogous to  
20 the export story, whereby we're looking at, you know, is  
21 there more imports in the financial services sector and how  
22 does that impact employment in the financial services sector.

23 And we see, again, a not entirely consistent  
24 picture between this sector and occupation exposure, but  
25 there might be some negative effects here, right, where, if

1 there's more competition, perhaps some people end up kind of  
2 feeling some of those competitive pressures and losing their  
3 jobs kind of somewhere along the way.

4 But there's another way of thinking about services  
5 imports, and that is these services imports that are  
6 functioning as inputs into production. So now, instead we're  
7 thinking about, you know, for the financial services sector,  
8 are they importing more services of any services sector for  
9 the purpose of using in their production processes, because  
10 that's where we get a lot of these potential productivity  
11 effects taking place, whereby then, by being able to do that,  
12 they are able to scale up and expand their employment and so  
13 forth.

14 And that's very clearly what we see: increased use  
15 of imported services as inputs is very strongly associated  
16 with increased employment in that sector and kind of carries  
17 over into occupations that are in sectors that are expanding  
18 or growing in this way.

19 And so this is the kind of story that we think is  
20 important when it comes to services that maybe hasn't been  
21 highlighted in the manufacturing literature. And I will say,  
22 as we're kind of probing these results and doing robustness  
23 checks and running all of this in a bunch of alternate  
24 manners, this result on the positive effect of services being  
25 imported for use of inputs is kind of the strongest across

1 the board and does not go away no matter what we throw at it,  
2 and we really see it showing up again and again, so we think  
3 that's a very interesting story to be exploring.

4 Next, we have the employment effects of kind of  
5 Mode 3 exports and imports, so this is trade through foreign  
6 affiliates. And there's a lot of ways in which we might  
7 expect that foreign affiliate trade to show up in employment,  
8 but as you kind of see here, so far, we're finding for the  
9 most part null results. We're finding not a lot of impact as  
10 compared to cross-border trade, which we found somewhat  
11 surprising but might be because of different offsetting  
12 forces.

13 So, when it comes to Mode 3 exports, this is you  
14 have a firm kind of in your country that now is setting up a  
15 foreign affiliate somewhere else and that foreign affiliate  
16 is starting to sell to that local market. We might think  
17 that this cuts jobs because, if the foreign affiliate is  
18 doing it, it's no longer necessary to do those activities at  
19 the headquarters.

20 But, equally, we might think that creates jobs  
21 because, you know, the foreign affiliate still has to be  
22 administered at the headquarters, and previous work has found  
23 a lot of complementarities actually between those two things.  
24 We find a null, it might be that there's no effect; it might  
25 be that those two effects I just outlined are kind of

1 canceling each other out in some way, but we don't exactly  
2 know.

3           When it comes to Mode 3 imports, it's the opposite  
4 story, so it's a foreign company that's now setting up a  
5 foreign affiliate in your market. And what is that going to  
6 do? So that could mean kind of outcompeting some of these  
7 local businesses and kind of replacing them, but, at the same  
8 time, you know, the foreign affiliate is in the local market.  
9 It still needs staff to fulfill those jobs in the local  
10 market.

11           And so there might be a pure substitution whereby  
12 now the activity is being done by a foreign affiliate of a  
13 foreign MNE as opposed to by a local company, and the  
14 employment effects of that could simply be a wash at the end  
15 of the day. And so that's one possible way of explaining the  
16 null finding here.

17           Now an important thing we wanted to look at and  
18 something that we spent a lot of time kind of digging into is  
19 the effect across different skill levels. So this graph is a  
20 little bit more complicated, so just to walk you through it,  
21 on the Y-axis, now we have all five of the different measures  
22 of services trade that we've kind of looked at so far for  
23 employment, so exports, imports, imports as inputs, and then  
24 Mode 3 exports and imports.

25           And now the colors are distinguishing kind of

1 whether that occupation of the given sector occupation cell  
2 is one we consider high-skill or low-skill, where we follow  
3 the ILO's classification of that.

4           And when you see the little coefficient dots turn  
5 into a star, that is indicating that the interaction effect  
6 of a difference between the two kind of marginal effects is  
7 statistically significant. Since that copy read directly off  
8 of the overlap of the confidence intervals, we wanted to kind  
9 of mark that some of these differences really are  
10 statistically significantly different from each other.

11           So the pattern we see emerging here -- and this is  
12 not kind of uniformly clear across the board, but we do see a  
13 lot of tendencies in this direction -- is that the  
14 high-skilled sector occupation cells are seeing more of this  
15 increase in employment due to services trade than the  
16 low-skill kind of sector occupation cells.

17           So the blue coefficients are kind of more over to  
18 the right there, they're more positive, whereas the green  
19 coefficient, the low-skilled, are not experiencing as big of  
20 a positive impact and potentially even a slight negative  
21 impact of services trade.

22           And so this is kind of in line with what some of  
23 the literature has found. It's in line with our expectations  
24 that OECD countries are relatively skill-abundant. That's  
25 where they have their comparative advantage in these

1 high-skilled sectors and high-skilled occupations, and so a  
2 lot of the benefit might be going there.

3 We still think it's really valuable to start  
4 showing this empirically, and because these effects are kind  
5 of, you know, the tendency is in this direction, but it's far  
6 from universal, what we're currently in the middle of is  
7 unpacking kind of for who in particular is this. Is this  
8 concentrated in particular sectors in particular countries or  
9 time periods and so on and so forth. And one aspect there  
10 is, what skills in particular, right? Like, high-skill is a  
11 pretty broad kind of label. Which skills in particular is it  
12 that are being rewarded?

13 And so one kind of version of this we think is  
14 really interesting is now we're classifying occupations by  
15 whether they are high or low intense in being routinized. So  
16 are the tasks being fulfilled by people in these occupations  
17 kind of repetitive things you do over and over again, or do  
18 they require a lot of kind of creativity and decision-making,  
19 which is one way of thinking about what it means for  
20 something to be high-skilled.

21 And, here, we see the pattern a little bit stronger  
22 than with the more generic skill measurement, whereby it's  
23 these low routine tasks that are seeing more of the positive  
24 effects of trade, whereas high routine tasks don't see as  
25 much of that happening.

1           And so that is in line, again, with our  
2           expectations to where the comparative advantage might be and  
3           where the kind of big changes in services trade are  
4           happening, but we think it's really notable that kind of once  
5           you start thinking about what does skill mean, you can kind  
6           of get a better sense as to who is it that is experiencing  
7           these effects and where in the economy are we expecting it to  
8           show up.

9           Now the second set of results I have for you are on  
10          income. While employment is very important, we also care  
11          about people being remunerated well for what it is they do.  
12          Unfortunately, finding income effects in practice is pretty  
13          difficult, and others have found this in the literature as  
14          well. One of the things that's holding us back here from  
15          finding clear results on income is that we have a less than  
16          ideal measure of income, namely, the income decile.

17          The European Labour Force Survey, for anonymity  
18          reasons, does not give the kind of, you know, Euro amounts of  
19          what people are making but instead takes people in a given  
20          country and year, splits them up into 10 equal-sized groups,  
21          and then you get these deciles where a higher number means a  
22          higher relative income but not an absolute income, which we  
23          would ideally like to know, right?

24          If everyone's just earning a little bit more,  
25          that's a positive impact that we wouldn't be able to capture

1 here. But, for the purpose of being able to do this analysis  
2 in a cross-country way, we calculate these same income  
3 deciles for the other countries in our sample, and we look at  
4 that as our outcome.

5 So there's not any kind of overwhelmingly clear  
6 effects here that services trade are massively increasing  
7 people's relative income, but to the extent that effects  
8 exist, we think they're at least not in a negative direction,  
9 but we don't see anything about sectors that are heavily  
10 exposed to imports suddenly are getting their pay wiped out  
11 even if they do keep a job. So it's at least not bad news.

12 But the other thing we found very interesting  
13 popping up here is, even when we found it difficult to get  
14 clear results on the absolute impact, we did find a lot of  
15 heterogeneities in the results in the kind of impact on  
16 income deciles.

17 So the first one I'm showing you here is in terms  
18 of gender, so now we're dividing people individually in their  
19 gender, kind of interacting that with the services trade  
20 exposure. And to the extent that any positives exist, they  
21 seem to primarily be occurring for men. We see that men have  
22 more positive marginal effects than women do, and for men, in  
23 some cases, it becomes a statistically significantly positive  
24 effect.

25 We also have a kind of similar pattern going on



1 when we look at people by whether they live in an urban or a  
2 rural area. Now the definition of that differs a little bit  
3 across different countries, but you can think of "urban" as  
4 being kind of either in or near a major metropolitan area and  
5 "rural" being most of the rest of the country.

6 And we see that more of the positive income effects  
7 are taking place for those people living in those urban  
8 areas, which, again, is a fairly good match with the  
9 theoretical literature in terms of services taking place more  
10 in cities, in terms of trade causing agglomeration economies  
11 in kind of highly productive areas.

12 So this result is perhaps not surprising, but we do  
13 think it is very interesting that even where this income  
14 measure is somewhat kind of tricky, there's a kind of clear  
15 pattern going on where some people see a larger gain than  
16 others insofar as gains are taking place.

17 The last set of results that we're going to talk  
18 through is about the employment context. Now we have a lot  
19 of different kind of outcomes beyond employment and income  
20 that we're trying to look at, but we wanted to show you two  
21 particular ones that we've kind of started looking at most  
22 recently because we think they're theoretically very  
23 interesting, but we don't have a full story there, so we'll  
24 be very curious to get some input from everyone in the Q&A.

25 And that led us to start thinking about what types

1 of companies do people work in, so do they work in a large or  
2 a small company, and are they self-employed or not. So here  
3 is the result regarding self-employment, so the outcome here  
4 we're looking at is, is someone, you know, self-employed as  
5 opposed to employed in a company. So this is all for  
6 employed people.

7 And there's kind of some tentative indication that  
8 a larger exposure to trade makes people less likely to be  
9 self-employed, and particularly when it comes to these  
10 imported services inputs and these Mode 3 imports, that  
11 negative effect seems to be taking place.

12 So the story here would be one of only or primarily  
13 large multinational enterprises are really able to take  
14 advantage of these services inputs that are being imported or  
15 are able to set up these foreign affiliates. And so they're  
16 instead kind of crowding out or making it less attractive for  
17 companies -- for people to be self-employed or operating kind  
18 of on this really small scale because, instead, we have this  
19 concentration into kind of more formalized and larger  
20 businesses.

21 When we look instead at people in a large firm, we  
22 see to some extent the same pattern. So a large firm here,  
23 again, the definition is going to differ slightly by country,  
24 but you can think of the cutoff as being somewhere between 30  
25 to 50 employees. Anything above that we classify as large.

1 And, again, there's some tentative positive coefficients  
2 here, so it might be the case that more services trade and,  
3 in particular, more services imports are leading to a  
4 concentration into large firms, more people being employed  
5 there, rather than in these smaller companies.

6 Now what we think of that normatively is really  
7 pretty up in the air, right? On the one hand, it might be a  
8 shame if small companies are being outcompeted. On the other  
9 hand, we know that large and exporting and trading companies  
10 generally pay a lot more to people and are more productive  
11 and have a bunch of other benefits to their employees.

12 So it could go either way in terms of are we  
13 concerned here about something like monopsony power or are we  
14 happy that kind of people are no longer kind of forced to  
15 work in tiny companies that are unproductive but instead get  
16 to move into really productive large firms. And those are  
17 open questions for probably someone other than us to kind of  
18 start tackling.

19 We think the pattern is, you know, very much in  
20 line with what we would think based on a kind of Melitz "new"  
21 new trade theory model is showing up here in these employment  
22 results, not just in the firm-level data, where other people  
23 have looked at it.

24 So, to wrap up, I have kind of a series of  
25 concluding thoughts for you on a few different dimensions.

1 The first of these, and this is important, is some caveats.  
2 One caveat is that causal inference is just really difficult  
3 in this setting, right? We're trying to do our best we can  
4 with these fixed effects, but we know that that's by no means  
5 kind of fully perfect in capturing the true causal effect of  
6 services trade on these outcomes we're looking at.

7 We're also working at a pretty high level of  
8 aggregation both for the sectors and for the occupations,  
9 which might wash out a lot of interesting variation. Even if  
10 you're able to switch from one clerical job to another, those  
11 might not be the same and they might not be equally desirable  
12 to you, and so we're not able to capture that as a change or  
13 a loss, whereas, in fact, in these much more narrow  
14 occupation groups, there might be some important dynamics  
15 going on.

16 We also face a tension between kind of the broad  
17 coverage that we chose to pursue of a lot of countries over a  
18 lot of time, which has the advantage of giving us a kind of  
19 really general idea as to what the dynamics at an OECD level  
20 are, but that loses out some of the context-specific detail  
21 that other studies which are able to use kind of really  
22 micro-data in a one-country context are able to really dig  
23 into and leverage.

24 We also have some planned next steps, and so I want  
25 to highlight these mostly to kind of elicit your thoughts as

1 to what you think is interesting for us to do with this kind  
2 of pushing further. One of these is kind of, in the interest  
3 of causal inference, is to start or to, you know, incorporate  
4 some instrumental variables. We've started looking at this,  
5 but particularly the shift-share instrument that a lot of  
6 others in this literature use is quite tricky in this  
7 cross-country kind of context, but we're kind of playing  
8 around with that and some other options.

9           We also think there's a lot of other  
10 heterogeneities that are really interesting. So, for  
11 example, across groups of countries. So is all of this  
12 happening in the same way in Latin America as it is in  
13 Europe? Plausibly not, and that's something we want to  
14 unpack.

15           We want to also zoom into specific types of  
16 services. So, as I showed you at the start, you know,  
17 transport's very tradable with very low-skill, contrasts a  
18 lot with something like financial services that's very  
19 tradable and very high-skill, and we'd like to unpack that  
20 more.

21           And we think it's possible that some of these  
22 effects have changed over time. Alex showed you this kind of  
23 divergence starting around 2013 when services trade really  
24 started following its own path, and so there's a possibility  
25 even in this somewhat-limited 14-year period that we cover

1 that these dynamics are already evolving. And, certainly,  
2 you know, we think, going forward, there might be a lot more  
3 evolution to come, but it's interesting to already be able to  
4 get some grip on.

5 Now, for this particular paper, we're aiming to  
6 kind of have this out and published sometime this winter, but  
7 this is part of a much broader workstream for us at the OECD,  
8 and so there's a lot of questions we're thinking of asking  
9 over the next couple years that I also want to kind of throw  
10 out there for you for kind of discussion.

11 One of these is how these effects unfold in  
12 regional economies, and Alex talked a little bit about this  
13 in the look at the literature. There's a lot of potential  
14 spillovers at the local level, both through kind of  
15 input-output linkages to suppliers and through non-tradable  
16 activities taking place locally that are interesting.

17 There's also been kind of over recent years  
18 increasing attention to the role of labor mobility across  
19 geography as a big determinant of the impact of trade on  
20 labor market outcomes. And, again, the focus there has been  
21 on manufacturing trade, so we think a services look at that  
22 is merited.

23 And we also want to think about how workers adapt  
24 over time. Right now, you know, the time spent we have is  
25 pretty limited. You get exposed to services last year, what

1 happens to you this year. But workers might easily adapt.  
2 An interesting example of this was one of the other  
3 presentations in the seminar series on how do people adjust  
4 their kind of investment in education decisions.

5           And so we might think that certain workers are  
6 better able to both recover from shocks, maybe go seek the  
7 education they need to move somewhere new, but also to take  
8 advantage of the opportunities that, in particular, services  
9 trade kind of presents to workers. So maybe there's this  
10 really exciting high-paying job, but it requires, you know, a  
11 lot of travel or working on off-hours because of time zones  
12 and who's able to kind of make that adaptation over time and  
13 who isn't.

14           Lastly, I have some kind of concluding thoughts of,  
15 you know, if you take away nothing else, these are the things  
16 we think are important takeaways for this much broader debate  
17 on what is the impact of trade on workers and on our  
18 economies more broadly.

19           The first of these -- and I know I've repeated this  
20 several times, but it does bear repeating -- is that services  
21 trade appears to have a very different dynamic than  
22 manufacturing trade. It has more positive impacts and more  
23 potential for positive impacts. And so, insofar as the  
24 debate has been overly or has been predominantly focused I  
25 should say on manufacturing, we think bringing services much

1 more prominently into this conversation really shifts the  
2 tone and the conversation we can be having.

3           Then we also see that some of these effects are not  
4 just running by sector but by occupation. Of course, for us  
5 as trade economists, it's tempting to think in sectors  
6 because that's where our services trade data is at, but when  
7 it comes to someone actually applying for a job, they're very  
8 likely to do that on the basis of occupation, and so taking  
9 that reality into account in this conversation is important.

10           Then we think it's really interesting that these  
11 working conditions beyond merely employment are affected, and  
12 this includes income but a lot else beyond that. For a lot  
13 of this period, a lot of these countries were pretty near  
14 full employment, and so, when we think about the impact,  
15 thinking about these other ways that worker well-being might  
16 be being shaped and the kind of circumstances in which they  
17 work might be being changed is really important as well.

18           And, lastly, since this is the distributional  
19 effects series, I do want to mention kind of distributional  
20 consequences. We do see here effects varying by skill level  
21 and by features of workers, things like gender. We also  
22 looked at, for example, age or education or other things  
23 where we do see patterns emerging.

24           And so, while we're not clearly seeing that some  
25 groups are kind of losing in some really dramatic way that's



1 kind of cause for immediate concern, it is the case that  
2 perhaps some of these positive effects are concentrated more  
3 among some workers than others, and that bears careful  
4 thinking kind of from a policy perspective of how do you want  
5 to think about or manage that or kind of take that into  
6 account in the broader conversation.

7 And that's what I have for you. We're really  
8 looking forward to all of your questions and comments, and  
9 thank you so much for listening.

10 MS. LAWLESS: Thank you, Elisabeth and Alex. I'm  
11 hoping you are both back online successfully. And feel free  
12 if you want to re-share your slides during a question if it's  
13 particularly helpful. Otherwise, we can leave it in this  
14 format.

15 We're going to move to the discussant phase and the  
16 Q&A more generally because it was a very thought-provoking  
17 paper and presentation, and I'm sure we have questions from  
18 the general audience, as well as from Tamar.

19 Tamar Khachaturian in the Services Division is the  
20 discussant today, and she's just gone off screen, so I'm  
21 hoping that's working. And we're giving Tamar 10 minutes to  
22 present her thoughts, and then we'll open it up to a more  
23 general conversation. But thank you so much.

24 MS. KHACHATURIAN: Thank you, Martha. I'm going to  
25 just take a moment to share my slides. I have my video on.

1 I'm not sure if everyone can see, but I think Webex is  
2 intermittently doing something funny to the video, so hoping  
3 that that's not an issue. But let me go ahead and share my  
4 slides. Okay. Can everyone see that?

5 MS. LAWLESS: That's great, Tamar.

6 MS. KHACHATURIAN: Okay, perfect. So thank you for  
7 the introduction, Martha. My name is Tamar Khachaturian, and  
8 I work in the Services Division of the Office of Industry and  
9 Competitiveness Analysis at the USITC, and I just want to  
10 take a moment to thank Alex and Elisabeth very much for  
11 participating in our seminar series and especially for  
12 staying on late local time in Paris. I know it's evening for  
13 you. And also, thank you again for rescheduling the seminar  
14 series to today.

15 So I just wanted to start by saying that, as a  
16 services analyst, I really appreciated the very helpful  
17 overview of the existing empirical literature on services  
18 trade and worker effects. I will sort of go through, like, a  
19 high-level summary of the literature that you present in your  
20 paper, as well as the impacts on employment, income, hours  
21 worked, and part-time work.

22 I do know, and I will just say a quick caveat here,  
23 that I am working from a version of your paper from a few  
24 months ago, so some of the things that I may mention, you  
25 know, have either been updated or expanded, so if there's

1 anything that I say that is a little bit different than the  
2 most updated version, please feel free to correct me either  
3 during the presentation or after.

4 So, as Alex and Elisabeth's very helpful overview  
5 of the literature indicates, that, in terms of the effects of  
6 services exports on employment, the literature mostly finds  
7 positive effects of services exports. This is, again, to be  
8 expected and can work through many channels, as Alex  
9 helpfully went through in the beginning of the presentation.

10 And in terms of services exports, the effect on  
11 employment is both positive and negative in the empirical  
12 literature, and this is, again, due to opposing theoretical  
13 channels which, again, the helpful overview: on the one  
14 hand, we can think about the substitution effect and  
15 replacing local inputs with imports, and on the other hand,  
16 we can think of the potential productivity gains that may  
17 lead to firm expansion. So both the positive and the  
18 negative effects found in the literature on services imports  
19 have those theoretical underpinnings.

20 And the literature also does do some disaggregation  
21 in terms of these employment effects by skill level, so,  
22 again, differentiating between high and low skill, and there  
23 does seem to be a positive demand for high-skill workers,  
24 especially on the export side. This is, again, to be  
25 expected, given the high skill intensity for many services

1 industries, and it is counter-intuitive for imports, but  
2 there is a story that I think was helpfully relayed today in  
3 terms of the complementarities between the imports of  
4 skill-intensive foreign services and the capabilities of  
5 skilled domestic workers that lead to an absolute demand for  
6 domestic high-skilled workers, and I think that's an  
7 important point too to highlight.

8           So moving on to the analysis that was conducted in  
9 the paper, I have grouped these in terms of both employment  
10 and income effects. I know that you presented them a little  
11 bit -- you distinguish between those sets of results here,  
12 but in the paper overall, I think what you find is that both  
13 services exports and imports are associated with higher  
14 levels of employment and income.

15           I know that there are some differences between the  
16 direct versus indirect measures, and you helpfully sort of  
17 talked through that, especially on the import side, that that  
18 does make a significant difference. But, overall, it does  
19 seem that the effect of the occupation-based exposure is  
20 larger, and I think that that is a very important point to  
21 relay, that the effects of services trade are mainly working  
22 through the occupation channel, as opposed to being siloed  
23 within a specific service, so I wanted to highlight that.

24           And the effects associated with imports and  
25 employment were particularly pronounced for workers in

1 high-skilled occupations. I think that was -- that sort of  
2 remained true even with your updates. And, again, I think  
3 that that is an important point to highlight because it  
4 suggests that complementarity between high-skilled workers  
5 and the sourcing of foreign services inputs is sort of  
6 underlying that result.

7 I thought that it was interesting that, at the  
8 employment level, the results were never negative, so we're  
9 always seeing on the import side that there aren't negative  
10 effects across skill levels.

11 One question that I have here that I'll just  
12 highlight now is the high-skilled versus low-skilled  
13 analysis, if you ever carried that out on the export side. I  
14 know, in the paper, that differentiation was included for  
15 imports, but I thought it would be interesting to know if you  
16 had run that analysis on the export side as well.

17 So I think, in your presentation, you focused a  
18 little bit less on this, but in the paper, you do have  
19 effects on hours worked and part-time work that I found very  
20 interesting in the paper. Both services exports and imports  
21 were associated with an increase in the average number of  
22 hours worked and decreased share of workers in a part-time  
23 position, and these effects were more pronounced for those  
24 with a higher education, for men, for workers over the age of  
25 45, as well as for high-skilled workers and those in more

1 telework-able occupations. Again, in terms of the  
2 high-skilled results, this is pointing toward the  
3 complementarity between services trade and specific skills,  
4 which I found very interesting.

5 In terms of discussion questions and future  
6 research, the first point I wanted to make was about the  
7 implications of the findings related to higher-skilled  
8 workers and what you thought were the next steps in terms of  
9 sort of unpacking this result both for understanding who's  
10 gaining from trade, and then I think the next step is in  
11 terms of trying to understand how to better understand trade.

12 So, thinking about this -- I'm just going to move  
13 forward a slide here -- this is a table that I have taken  
14 from the Bureau of Labor Statistics, where you see employed  
15 women by occupation, race, and Hispanic or Latino ethnicity  
16 in 2021, and you can see, for example, for that year, white  
17 women and Asian women at 47.7 percent and 56.7 percent were  
18 more likely to work in management, professional, and related  
19 occupations that are considered both higher-paying and  
20 higher-skilled, as opposed to Black or African American women  
21 at 39.6 percent and Hispanic or Latino women at 29.9 percent.  
22 And conversely, in the same year, Black or African American  
23 women at 25 percent and Hispanic or Latino ethnicity women at  
24 29.7 percent were more likely than white or Asian women to  
25 work in lower-paid and lower-skilled service occupations for

1 that same year.

2 So this is a very, you know, simple snapshot of one  
3 year and one slice of the sort of occupational makeup of what  
4 we have here. But I was wondering if understanding this sort  
5 of, you know, country-level context for specific categories  
6 of workers in occupations or across industries would be  
7 helpful to, again, just sort of drive future research  
8 questions or gaining a better -- both for gaining a better  
9 understanding of who's benefitting from trade and, again, for  
10 having policy implications as well.

11 In the paper, you guys had not included analysis on  
12 foreign affiliate sales, but I was very excited to see that  
13 you have expanded the research to include Mode 3, and I put  
14 it here because, you know, as we all know, affiliates supply  
15 a majority of services, but I wanted to show this slide very  
16 clearly in that, as we can see in 2021, the dashed blue line,  
17 which corresponds to U.S. cross-border exports, is  
18 substantially lower than the solid-blue line, which  
19 corresponds to services supplied to foreign persons or  
20 foreign affiliates of U.S. companies, and conversely, on the  
21 import side, U.S. imports are substantially less than  
22 services supplied to U.S. persons through U.S. affiliates of  
23 foreign companies.

24 So the majority of services are supplied through  
25 affiliates. I was really happy to see that the updated work

1 that you've done includes Mode 3. And I was just wondering  
2 going back to this slide here what you see as the main  
3 challenges of incorporating foreign affiliate sales both in  
4 terms of, you know, just the data, as well as broader  
5 thinking on the relationship between foreign affiliate sales  
6 and cross-border trade and the complementarities that exist  
7 and then just in terms of capturing that holistic picture of  
8 trade through all the different modes.

9 I think, Elisabeth, you already talked about  
10 sectoral disaggregation, and there's so many, you know,  
11 variations of the analysis that you all have done that is  
12 really helpful. I was wondering if you had an intuition  
13 behind which sectors may be driving some of the positive  
14 employment results, if you have had an opportunity to look at  
15 some of those underlying sectors.

16 And, you know, you mentioned the differentiation  
17 between financial services and transport services, if you had  
18 any thoughts about which sectors you would focus on to be  
19 able to sort of tease out some of the -- to explain some of  
20 that variation in high- versus low-skilled or other  
21 disaggregations.

22 And then I think, you know, it was really  
23 interesting to see some of the heterogenous worker impacts  
24 that you included in the paper, especially, I think, for this  
25 paper, it was limited to the hours worked in part-time work,



1 but if there was anything else that you think you would be  
2 able to do with the Labour Force Survey.

3 And then, just thinking about single-country  
4 context or regional analysis, I think you had mentioned that  
5 there's a tradeoff. I agree in terms of trying to have a  
6 deeper dive into some of the, like, occupational  
7 characteristics and composition that I mentioned earlier.  
8 But, if we looked at a single-country context or a different  
9 group of countries, for example, developing countries, what  
10 we would think that we should focus on or expect to see that  
11 would be different than the sets of results that were  
12 presented today.

13 And I think, with that, I'll just -- I will stop  
14 sharing and we can just have a more -- a broader discussion.

15 MR. JAAX: Okay. I'll be bold and --

16 MS. LAWLESS: Please go ahead and respond.

17 MR. JAAX: No, apologies, Martha.

18 MS. LAWLESS: No, please go ahead and respond, and  
19 then we'll move on to more questions.

20 MR. JAAX: All right. Let's hope my internet  
21 connection will prove resilient. I'll take a few, and then  
22 maybe Elisabeth will cover the other ones.

23 On exporting and the highly-skilled, you had a  
24 question, Tamar, I think, on whether we can go a bit further  
25 in exploring the export high-skilled thing, is that right?

1 MS. KHACHATURIAN: Yeah. So your updated paper may  
2 include both sets of results, but in the version of the paper  
3 I read, there was an analysis of high-skilled versus  
4 low-skilled on the import side but not on the export side in  
5 terms of the employment effects. So I was wondering if you  
6 carried out the same analysis for exports or if it was not  
7 possible because of data restrictions, for example.

8 MR. JAAX: No, we did.

9 MS. KHACHATURIAN: Okay.

10 MR. JAAX: And we found very intriguing and  
11 fascinating results that partly relate to some of your other  
12 questions, including on the heterogeneity across sectors.

13 MS. KHACHATURIAN: Okay.

14 MR. JAAX: So we have some initial hints that,  
15 basically, the skill intensity of production in a given  
16 sector seems to be very relevant, as you might expect, but  
17 then still it takes time to tease it out from the data, to  
18 the relationship between, yeah, occupation level, skills, and  
19 a given trade shock.

20 So our current results suggest that some sectors,  
21 in particular, those that are goods-related, for example,  
22 transport services, do seem to experience benefits that are  
23 more pronounced for low-skilled workers when they see an  
24 increase in exports. And this sort of makes sense. You do  
25 not necessarily need five new managers if you expand your

1 transport services, but you need the type of people who run  
2 the ships, who can drive the trucks.

3 But, as we zoom in on professional and digitally  
4 deliverable services, you see the sign of the coefficient of  
5 the interaction that sort of dominated in the results that  
6 you were looking at when you prepared your comments. So our  
7 direction of travel in terms of the next steps is very much  
8 on the sectoral variation.

9 We tried to get a better understanding of how the  
10 skill interaction operates across different sectors as a  
11 function of the skill intensity of the sector, and I hope  
12 this goes some way in addressing your question. As  
13 mentioned, we have explored it. We do have the starting  
14 assumptions, but we didn't have the time yet to arrive at a  
15 consolidated set of results. That's why we hadn't included  
16 it yet.

17 MS. VAN LEISHOUT: All right. Alex's internet is  
18 taking another break, so I'll jump in there.

19 MS. LAWLESS: Thank you.

20 MS. VAN LEISHOUT: Thanks for those comments,  
21 Tamar. There were some really, really interesting questions  
22 in there that I want to dig into further.

23 So you kind of showed these interesting numbers on  
24 kind of race and ethnicity crossed with kind of skill and  
25 sector. We're somewhat limited in the sense of which we can

1 do really country-specific things just because, you know, the  
2 perspective we've chosen here is a cross-country one and  
3 we're going to stick with that at least for the time being  
4 for this work, although, you know, we're very interested in  
5 work others are doing and that was seen elsewhere in the  
6 series to kind of dig into something like race and ethnicity  
7 in a country-specific context.

8           That said, there are additional heterogeneities  
9 that we can and do want to look at. So, you know, I showed  
10 you gender and rural, but some of the same patterns are  
11 taking place, for example, along age lines. And then we  
12 really want to complement the things about skill and  
13 occupation level with skill at an individual level, which we  
14 can best measure by education, and, again, some of the same  
15 patterns are showing up when you look at it from that  
16 perspective instead.

17           Some of this is very tricky, right, because we have  
18 so many different outcomes and so many different treatments  
19 and so many different interactions that it starts to become  
20 difficult to say, you know, which thing is really robust  
21 along every possible line and every possible way, and so  
22 we've been somewhat selective in the things we're most sure  
23 about.

24           But we do think there's a lot of those other  
25 patterns and heterogeneities going on at the same time, and,

1 hopefully, in the final-final version of the paper sometime  
2 in the winter, there's going to be even more kind of possible  
3 ways of cutting it and combining it with each other.

4 Let's see. So the one other question you had on  
5 Mode 3, I think it is challenging. I mean, the main data,  
6 the problem, as you said, is data, right? Like, it's much  
7 harder to measure. The Analytical AMNE is really a good  
8 effort at this, but it relies on a lot of different things.  
9 You know, our colleagues who kind of create that data do a  
10 lot of hard work to make it the best it can be, but it is  
11 more difficult.

12 We haven't yet looked at kind of complementarities  
13 and interactions directly. Of course, it's a big part of the  
14 literature on kind of services by mode of supply, so it would  
15 be an interesting thing to look at here. I don't immediately  
16 know how we would implement it, but I really like that as a  
17 kind of possible thing to start probing. If you had anything  
18 particular in mind, kind of let us know because that could be  
19 an interesting next step.

20 MS. KHACHATURIAN: Thank you so much.

21 Yeah, I lately have been thinking about the role of  
22 intra-firm exports. I know, for some sectors in the U.S.  
23 data, affiliated cross-border trade -- so trade between, you  
24 know, intra-company exports is a big part of cross-border  
25 trade, so I was thinking about how that would also play a

1 role in sort of understanding that complementarity between  
2 modes of supply. But I understand the data difficulties and  
3 appreciate that you have taken it as far as you have. Thank  
4 you. Thank you for addressing all the questions that I had.

5 MS. LAWLESS: Before we just turn it to the more  
6 general question, I did want to follow on from that  
7 conversation Elisabeth and Tamar were having about whether  
8 you could subdivide occupations into something that is more  
9 easily telework-able, as Tamar put it, and whether that  
10 effect is therefore more easily visible in Mode 1 trade and  
11 try to sort of see that connection more clearly if you draw  
12 some boundaries around it.

13 And another way to do a subdivide that might sort  
14 of highlight the impact of using the internet is whether the  
15 service group -- you talked about taking certain groups of  
16 services and looking at them as a group -- might be those  
17 that are very obviously beneficiaries of network effects  
18 through -- by being, you know, online platforms, for  
19 instance, or cloud service providers or those kinds of  
20 internet-related network effects. I don't know if that is  
21 trying to cut it too finely, but it might make it a little  
22 more visible.

23 MS. VAN LEISHOUT: I mean, so, on your last point  
24 first, it's not so much that it's cutting it too finely, it's  
25 that we don't have such fine cuts, right? We have these 11

1 services sectors.

2 MS. LAWLESS: Right.

3 MS. VAN LEISHOUT: Those are pretty big. When we  
4 use a kind of standard definition of digitally deliverable  
5 services, which kind of gets at the idea you're getting at,  
6 it overlaps exactly with what you might define as  
7 professional services. And so, at that point, being able to  
8 distinguish is it because they're digital or because they're  
9 kind of, you know, high-skilled white-collar jobs or because  
10 something else about them is really impossible for us to  
11 distinguish in this level of data.

12 But I do really like your other idea of thinking  
13 about some occupations. I mean, we've looked at this  
14 telework-ability thing, but that matters more for Mode 1, and  
15 I think there's other features of an occupation that might  
16 make it more suitable for Mode 3 trade kind of in the same  
17 vein, right, like, which things rely on face-to-face  
18 interaction, for example, in Mode 3 is one way to acquire --  
19 to arrange that, in addition to, you know, Modes 2 and 4.

20 So thinking about some characteristics should  
21 matter more for Mode 1 versus Mode 3 would be another way of  
22 unpacking this that I think is a nice idea.

23 MS. LAWLESS: The one other thing I will just  
24 mention is that -- thank you for answering a question we've  
25 been asked for about 10 years about headquarter effects of

1 foreign-affiliated sales. For whatever reason, they're not  
2 large, apparently, but it does -- it's great to have some  
3 data on that. Thank you.

4 MS. VAN LIESHOUT: Great.

5 MS. LAWLESS: I think I'm going to pass it to Jen,  
6 who's going to orchestrate the ordering of questions from the  
7 audience if we have some.

8 MS. POWELL: Sure. So we do have a question or a  
9 comment in the chat from Saad. Saad, do you want to come  
10 online to ask your question? I can also read it from the  
11 chat.

12 MR. AHMAD: Can you hear me, guys?

13 MS. POWELL: Yes. Hi, Saad.

14 MR. AHMAD: Yeah, my question was just generally,  
15 you know, you talked about the causal effects, and I was  
16 thinking about, like, specific policies in that timeframe,  
17 like Brexit, whether you can explore something like that to  
18 kind of define some effects that not probably will be, like,  
19 more at a single-country level, but, like, that might be a  
20 way to kind of get that, you know, causality issue.

21 MS. VAN LEISHOUT: Yeah, thanks, Saad. It's a good  
22 question and it's something we've thought about. I mean,  
23 Brexit specifically has the unfortunate feature of going into  
24 force right when COVID hit, and so ever being able to  
25 untangle those two at this type of aggregate level is going



1 to be a difficult one.

2 But, more broadly, your point is a good one of  
3 policy shocks. I think the difficulty we face is finding one  
4 that both is relevant to this wide of a set of countries and  
5 is not coinciding with all kinds of other things in those  
6 countries at the same time. And so we really haven't been  
7 able to find one that we think, you know, works for the  
8 particular setting we have.

9 I mean, I have really enjoyed reading all of the  
10 papers that have come out on the Brexit effect and I think  
11 there's a lot of people doing interesting work with that  
12 policy shock, as well as, you know, numerous other ones that  
13 have taken place in the last five or so years. But I think,  
14 for our setting, unfortunately -- I mean, we'd have to go  
15 look at something like exchange rates or other things that  
16 are measurable across countries, and that poses all of its  
17 own problems.

18 MS. POWELL: Great. Thank you, Elisabeth. The  
19 floor is open. I'm looking for hands, or if you would like  
20 to pose a question in the chat, please do so.

21 (Pause.)

22 MS. KHACHATURIAN: While we wait for questions,  
23 Elisabeth, I was wondering if you can sort of talk a little  
24 bit more about that urban-rural distinction that you included  
25 in the analysis? That was a new set of results as well that

1 I found really interesting, and I don't know if you want to  
2 share the slide again or not, but I think the urban result  
3 was more pronounced for both on the export and import side or  
4 just exports?

5 MS. VAN LEISHOUT: Pretty much across the board it  
6 seems there's a little bit more of a positive effect for  
7 people in urban areas than in rural areas. I will say that's  
8 also a relatively new result for us, so I haven't looked at  
9 it in the kind of thousand different ways I would like to to  
10 be able to kind of give you a full picture.

11 But it does seem to be that people who are living  
12 in an urban area are more able to take advantage. And I  
13 think this is not too surprising, right? If you're living  
14 somewhere very remote, you're probably not where a lot of  
15 these kind of high-skill, white-collar, tradable services  
16 jobs are happening, and you're probably also not where, you  
17 know, the kind of transport jobs that are also numerous are  
18 taking place because that's going to be in, you know, ports  
19 or transport hubs and so forth.

20 So there's just a lot less opportunity, you know,  
21 even if trade is happening to your sector and to your  
22 occupation, it's probably not happening to your sector and  
23 occupation in your area if you're really rural.

24 One aspect here is we do have a pretty big range of  
25 countries, right. Like, what it means to be rural in Brazil

1 versus in Slovenia versus in the U.S. are going to all be  
2 very different things. So we want to break that result down  
3 a little bit more by different country groups to get a better  
4 sense of kind of in which of those different contexts is that  
5 distinction really mattering.

6 MS. KHACHATURIAN: Yeah, I think for, on our end,  
7 we are very interested in understanding the implications of  
8 trade, both the impacts of trade and trade policy on workers  
9 in rural areas versus urban areas, so that level of analysis  
10 that you have done is really interesting for us, especially  
11 since it's specific to service industries. So thank you for  
12 that.

13 MS. POWELL: Any additional questions for our  
14 speakers? Checking the chat and hands. We have a hand from  
15 Colette Morgan.

16 MS. MORGAN: Hi. Thank you for the presentation.  
17 Very interesting. I was just wondering, in terms of service  
18 sector, there's obviously a great deal of difference in terms  
19 of what can and cannot be exported and imported, and so,  
20 obviously, you know, food services, retail, working in a  
21 hotel industry, those services obviously can't be traded in  
22 the same way, and I would assume that there would be some  
23 differences in terms of urban versus rural distribution of  
24 those types of jobs. And so I'm just wondering how you  
25 accounted for some of that in your research.

1           And then there are also a fair number of service  
2 sector jobs that require local certification, so whether  
3 that's, you know, your certified public accountant, a lawyer,  
4 each country has its own certification requirements, and some  
5 of those requirements, you know, require you to get certified  
6 in the country. Just kind of wondering if you looked at any  
7 of that and how that played on some of your research as well.

8           MR. JAAX: Maybe I'll give it another try. Yeah,  
9 highly relevant points, both of them. So, indeed, for some  
10 of these sectors where we do observe trade from the  
11 Inter-Country Input-Output Tables of the OECD, you would not  
12 expect them to be easily tradable in the typical cross-border  
13 services trade sense.

14           As of now, we still include them in the analysis,  
15 but in the initial -- in the current checks that I've just  
16 mentioned, as we zoom in on specific subgroups of services,  
17 we have created a group that we call customer or  
18 consumer-facing services -- that would be food and  
19 accommodation - and, indeed, we see that some of the patterns  
20 that we've just talked about, including the tendency for  
21 exports to induce a boost in demand for high-skilled workers,  
22 become more pronounced once we exclude these consumer-facing  
23 sectors.

24           We do, in future work, intend to look at the  
25 multiplier effects, so there something like food and retail

1 services would be more potential sectors that respond to an  
2 increase in exports of more tradable sectors. So we do think  
3 they are part of the story, but you're absolutely right that  
4 it's probably well-justified to set them a little bit apart  
5 when looking at cross-border services because they are not  
6 really typical candidates for cross-border trade, as we would  
7 expect it to happen in financial services, for example.

8 As for the certification requirements, that's  
9 indeed a very interesting point, and it's been partly used in  
10 existing literature. There was an early paper for the UK  
11 looking at whether professions are licensed or not. And even  
12 colleagues at the OECD have looked at licensing requirements  
13 and how they differ within the U.S. to look at basically  
14 intra-country limits to trade.

15 What has been holding us a little bit back is the  
16 lack of time variation in these licensing requirements. So  
17 we've even looked at our in-house data source, the STRI,  
18 where we've got measures capturing whether a given profession  
19 has to be licensed, but it's typically something that is  
20 specific to a country and then hardly ever changes because  
21 it's historically determined and there are strong interest  
22 groups that are sort of making sure the status quo doesn't  
23 necessarily change.

24 And for econometric purposes, that's challenging.  
25 If you don't have things varying over time, then it's a big

1 challenge. I don't know if the Brexit question by Saad,  
2 that's been dealt with already? Okay.

3 MS. POWELL: Perfect. Thank you, Alex, and thank  
4 you, Ms. Morgan, for that question. Any additional questions  
5 for our speakers?

6 (No response.)

7 MS. POWELL: I'm not seeing anything in the chat.  
8 Okay. Well, with that, I want to thank our speakers for  
9 joining us today, and thank all of you in the audience as  
10 well for tuning in, and that concludes the seminar series for  
11 2024. There will be transcripts posted online at the website  
12 that I posted, I posted the link in the chat, so please keep  
13 up to date on all the new information. We will be starting  
14 to populate that with information regarding the 2026 report  
15 as well coming out probably this fall, so please keep an eye  
16 on the website. And thank you again.

17 MS. LAWLESS: Thank you, Alex. Thank you,  
18 Elisabeth.

19 MS. VAN LIESHOUT: Thanks very much.

20 MS. POWELL: Thank you.

21 MS. LAWLESS: It was really interesting work. We  
22 appreciate it.

23 MS. POWELL: Thank you.

24 MR. JAAX: Thank you so much. Thank you very much.

25 (Whereupon, at 1:25 p.m., the seminar in the

1 above-entitled matter was adjourned.)  
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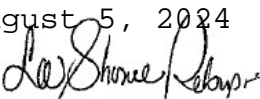
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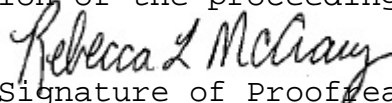
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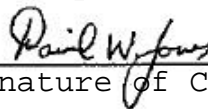
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