Tom Heintjes: Hello, and welcome back to another episode of the Economy Matters podcast. I'm Tom Heintjes, managing editor of the Atlanta Fed's Economy Matters magazine. Today we're speaking with Federico Mandelman, a research economist and associate advisor at the Atlanta Fed. Thanks for being here with us today, Federico.

Federico Mandelman: Thank you very much.

Heintjes: In 2014, Federico wrote a working paper titled, "Offshoring, Low-Skilled Immigration, and Labor Market Polarization." So it's not brand-new research, but it struck me as being a timely topic to return to for a podcast discussion. So I wanted to start out by asking you, Federico: What led you to look into the effects of offshoring, and immigration, on U.S. employment? We've seen that immigration and offshoring can be fraught issues, generating intense passions both ways. Did that potential minefield give you any pause?

Mandelman: Thanks again for your interest. It's true that I started working on this in 2014, but that's a project that I started around the time I continued working on this. Actually, before coming here, I was working on this paper.

Heintjes: I see.

Mandelman: I want to finish the last version that I will submit to a journal soon. So it's an ongoing process, and it's quite interesting. So I'll tell you how I started working on this.
As you know, the Federal Reserve has a dual mandate—low inflation and high employment. And in the aftermath of the crisis, inflation wasn't really a concern, and for most of us the real concern was employment. At some point during a meeting, there was a presentation made by one of the participants in the FOMC [Federal Open Market Committee] meetings about the polarization of employment. So, at the time the consensus was that most of the jobs being lost were jobs that belonged to middle-skill workers. So, based on that, one of our colleagues made a presentation of one paper being written on this issue, and that's how I became interested in this topic.

Heintjes: Right. So, when you say "middle-skill," and you write about "low-skill," can you give some examples of each type, just so we can sort of get a base of reference?

Mandelman: Exactly. So, we have high-skill workers that are professionals, technicians. And then when you go to the middle skills, usually you find the so-called blue-collar workers—workers in manufacturing—and then you also find white-collar workers, like administrative workers, people working in customer service, and these kind of occupations.

And then when you go to the left tail of the skill distribution, you have workers that do work like being nannies—you know, child care, home health aides, gardeners, janitors, housecleaners. So, those are like the big three divisions that we can make.

Heintjes: I see, I see. Well, in your paper you write that over the last several decades, employment has expanded for high- and low-skill occupations, while employment for middle-skill occupations actually shrank—but wages did not follow this pattern. What pattern did wages follow?

Mandelman: You're right. When we look at employment, we see that there is symmetry for employment and wages for high-skill and middle-skill workers. So for high-skill workers, you have very good employment prospects—robust employment growth—in coincidence with robust wage growth. For middle-skill workers, it is the opposite. Middle-skill workers witnessed job losses over the course of the last three decades, but also stagnant wages. So there is a coincidence between employment and wages for these two groups.

However, for the lower skilled, it's more like an asymmetry reality. Even though employment growth was robust—many jobs were created for the lower-skilled—wages remained somewhat stagnant.

So the reason why we say that this is an asymmetric polarization: For middle-skill workers and high-skill workers, employment and wages were moving the same direction; for low-skill workers, even though there were employment gains being recorded, wages remained stagnant.

Heintjes: I see. Your paper discusses two effects on unemployment: offshoring, and the immigration of low-skill employees. Let's take these one at a time. Why does offshoring affect middle-skill employment more than low-skill employment?

Mandelman: Yes, that's a good point. Actually, that's one of the main topics of the paper. So I think that—let's look at the middle-skill jobs. These are the jobs typically held by the middle class. So, here we find jobs like in manufacturing—manufacturing used to be very important in the '70s, and before that. And also we find the so-called white-collar jobs, like administrative workers, as I said before, telemarketers, people in support, and all that. These kinds of occupations are easy to offshore overseas.

So usually if, you know, If you work in—let's say you work in manufacturing, let's say you are assembling a product. It is very easy to have someone doing exactly the same type of task in China.

The same for many white-collar jobs: Let's say that you are providing customer service. You can do that in Atlanta, for someone living in New York, or you can do the same if you are in India.

Heintjes: But it's harder to send a cashier to China, for example.

Mandelman: Yes. Of course, you have exceptions, no? I'm not trying to say that all the middle-skill jobs are like that.

Heintjes: Right.

Mandelman: You have exceptions, but in general, when you look at all the occupations that are categorized as middle-skill occupations, these occupations in general—if you know, we always are going to find many exceptions—but in general, occupations that are subject to offshoring. And I say, the most typical example is manufacturing, but also an accountant. Let's say that you are working in accounting; nothing prevents someone doing exactly the same work in Sweden. And then once you finish with your job you send it by email to a person living in New York.

Heintjes: That was a question I... we even hear about people reading x-rays in other countries.

Mandelman: Yes, so there are many occupations like that, that—with the advancement, the impressive advancement, in communications that we witnessed in the last 30 years...but also, making an international phone call and monitoring someone working overseas is very cheap now. Thirty years ago it was very expensive. Just thinking about making an international phone call was costly. Nowadays you can monitor workers on the other side of the world, it's very cheap to do that. So that means that many of these middle-skill jobs are threatened by offshoring. But then, the question is why low-skill occupations are not affected by offshoring. That was a question I...

Heintjes: What do you find?

Mandelman: What I find is that, when you look at low-skill occupations, these occupations—what I call, these are like non-tradable occupations. So these are occupations that are impossible to offshore, and I'll give you some examples. Let's say that you are a nanny. You take care of babies. Really, you don't need to get any training for that, so you are considered to be low skill, and it's a low-wage job. But you know that it's impossible to offshore this kind of occupation to China. Maybe I would like to hire someone in the Philippines to take care of my children. I know that's not possible.

But when you look at all these low-skill occupations, most of them are actually protected from offshoring. I'll give you another example: Let's say that you work in the food industry—you are a waiter. Again, a waiter job is low skill. You don't need training, but you cannot offshore this occupation. A gardener. Gardening, you know the gardener has to be located where the garden is. Same with construction—construction jobs, many of them are low skill. Or the same with home health aides—taking care of old people, cleaning services—those occupations tend to be low skill. This is what we call service occupations. But in my view, and what I wanted to emphasize in the paper, is that these occupations are not subject to offshoring. So, you cannot offshore these low-skill jobs. Middle-skill jobs, like manufacturing, are easy to offshore.
And then, when you look at the high-skill jobs, it's true that, in principle, many of them could be offshored. But the U.S. in general has a comparative advantage in that. Let's say, for example, research and development. In principle, nothing prevents to develop a new drug in Thailand. But you know that the best universities are in the U.S., so if you want to develop a new product, or develop a new iPhone, the brainpower is going to be in the U.S. So the U.S. has a comparative advantage in that.

The same with managerial skills or brand recognition; so, for the high-skill jobs, even though that for many of them in principle you could offshore them, the U.S. has a comparative advantage on that. So, really the ones that are suffering the most were the middle-skill occupations.

**Heintjes:** I see. Let's turn to immigration, and the question of immigration in your paper. How does immigration specifically affect employment? Doesn't it also affect high-skill employment? We hear about HB2 visas and things like that.

**Mandelman:** Yes, it's true that immigration is also polarized. You have a lot of low-skilled immigrants, but also you have a sizeable amount of high-skilled immigrants. In my paper—this is something that economists tend to do. We abstract from something to focus in on other things—so in my paper I abstracted from high-skill immigration. I think it's a topic that deserves more research, but that's something we usually do in economics, we try to focus, so we avoid touching this issue. But still, I want to emphasize that even though high-skill immigration is important, the majority of the immigrants that arrived in the last 30 years were low skilled. But I think that's the reason why my interest was mostly on that.

**Heintjes:** You've talked a lot about a changing employment dynamic. How do households respond to this sort of changing employment dynamic?

**Mandelman:** First of all, let me summarize a bit of my idea of what is the role of immigration in all this. So, as I said before, one of the key findings is that low-skill occupations cannot be offshored. Right? However, immigration is an alternative. If you cannot offshore a nanny, one alternative is to bring immigrants, and I believe that's what happened. In the last 30 years, immigration increased significantly. The number of foreign-born were about 6 percent in 1980. Thirty years later, it went to 13 percent.

**Heintjes:** Wow!

**Mandelman:** This immigration was mostly low skilled and, as expected, much of the employment growth in low-skill occupations was the result of immigrants filling these job posts. In our model, this is what explains the asymmetric part of polarization. So even though there was a big demand for low-skill occupations, the fact that we have an increasing amount of immigrants coming into the U.S.—acted like a labor supply effect. So an increasing number of immigrants end up putting downward pressures on low-skilled wages. Even though employment—when you look at the aggregate employment for low-skill—increased, as immigrants arrive into the U.S., this will tend to put downward pressure on the low-wage salaries.

So, the question is, as I said before, there are two things that I was interested in this; so first of all, what are the welfare implications? So are the natives better or worse off with this offshoring and immigration? And, also, another thing that I wanted to explore: what was the reaction of households to this new reality?

First of all, let me tell you a bit about the welfare impact of immigration offshoring. What is what I find in my study? I find that even though immigration results in lower low-skill wages—so immigration dampens low-skill wages—they have an aggregate positive impact on the U.S. economy for two reasons.

The first reason that happens to be very important—so essentially we tried to elaborate a model, and tried to do...it's a bit complicated to explain here but I tried to see, what is the impact of immigration on the well-being of the people. So it's true that I find immigration tends to lower low-skill wages, but there are two important benefits that come from low-skill immigration. One that is very important—that is, immigrants keep services cheap. So, to give you an example: let's say we have a household. And we have two professionals in the household. The fact that you can count on, with a cheap nanny, because there are immigrants—let's say that you are in California. Because of immigration, childcare is much cheaper than it would have been otherwise.

Both, if you can count on cheap childcare, that means that one of the partners can go the job market. Let's say you have two professionals at home; a wife and a husband, both of them went to college, and they want to be productive members of society and use their skills. If you don't have the cheap childcare—and this happens in countries like Japan—it's impossible for women to go to the job market.

Japan may be an extreme example of that. In Japan, you don't have much immigration. And not surprisingly, female labor participation is very low. And the fertility rates are very low too, because many women have to decide "either I have a kid, or I go to the job market." Or whenever they have a kid, they have to quit the labor force.

And the same with many other services. The fact that you have immigrants means that many of the services like gardening, like your restaurants, or even construction—like homes—will be...they're much cheaper because of the immigrants. And of course, if you have something that is cheaper, that provides you some benefits. And, not only that; if you compare this...if you take into account that everyone is competing with workers overseas, the fact that American workers can count on cheap labor results in some comparative advantage with workers in other locations. But, maybe I'm going too far.

But I guess that you have the idea—the most important thing that you have to have in mind is that cheap services are highly beneficial for the average American.

**Heintjes:** Right. So, when you talk about this dynamic at work with immigration and employment, did you detect any sort of responses among households in terms of how they adapt to it or adjust to it?

**Mandelman:** OK, that's the other thing: so, we not only have cheap services, but also...we rely on some research—I believe there are many papers coming on this—showing that households react to low-skill immigration. So, if you have a lot of low-skill immigrants coming into your neighborhood, the natural reaction is to get more skills. Because you don't want to compete with the low-skill immigrants. You don't want to be low-skilled when you have the potential competition of immigrants doing the same kind of work. So, in places where immigration tends to be more robust, consistently we see that natives react to that by acquiring more skills.

**Heintjes:** Right—going back to school...

**Mandelman:** By getting more education, going to college, or getting an associate degree. Workers try to distinguish themselves from the low skilled, by acquiring more skills.
And, actually, this is beneficial for them, and beneficial for the economy, because if you have more skilled workers, they tend to be more productive. But if you don't have immigration, then naturally many of these natives will have incentives to fill these occupations that no one is doing. So, if you don't have immigrants, maybe becoming a gardener, or becoming a nanny will be more attractive, because you could get a relatively higher salary.

So that's the thing that we see that immigration emphasizes two things that are highly beneficial over the long term. First, things are cheaper, and services are cheaper and [that] allows you to do other kinds of occupations. And then it creates an incentive to train, to get skills, so that you don't need to compete with the low-skill immigrants.

Heintjes: Does your research, Federico, indicate anything about the impact of lowering barriers to low-skilled immigration?

Mandelman: Yes, we try to estimate a model, and we find that lowering barriers to low-skilled immigration in general is...there are, you know, as I said before, there are some pros and cons. But when you try to put this in a quantitative model, overall, we find that immigration—at this rate, of course—I mean, if you lower the barriers to zero, maybe it's a different story. But given today's status quo, if you lower immigration by just a bit, immigration is beneficial for the representative U.S. citizen.

However, there are—and maybe everyone is aware of this—the implications for income distribution are very important. For low skill, of course, needless to say, it's bad for them, because they have...the result of immigration is lower wages. For high skill, it's the opposite. They highly benefit from low-skill immigration. But, let's assume that by the end of the day, you just care about the average one, the average American, then it's somewhat beneficial.

Heintjes: Right, I see.

Mandelman: It's not that it's very highly beneficial, but quantitatively, you have some benefits of lowering immigration barriers.

Heintjes: Right. Well, we've talked a lot about immigration, but I also wanted to turn again to offshoring, which you were just speaking about—and which we've all heard a lot about in recent years. Why has a rise in offshoring had the effect of increased earnings for high-skill occupations?

Mandelman: Yes, offshoring, as I say, for immigration was beneficial for high-skill workers, and offshoring was particularly very beneficial for them, too.

Heintjes: Why was that?

Mandelman: Again, I think there are simple ways to give you an example. So let's say that you are designing a new smart phone, a high-tech smart phone. So you are in Silicon Valley, and you are in charge of designing. You do the research and development of the new product, you have the new ideas—and now you have the possibility of having someone to assemble the product that you designed, on the other side of the world, at a much lower cost. So, really you have associated a lot of cost savings. Now you just worry about the design of the product. You have the big ideas you know what to do. But thanks to offshoring, a lot of the production costs are going to be much cheaper, thanks to that.

So, that means that if you are selling this product overseas—because most of the high-tech smart phones that you have in mind are not only sold domestically, but overseas—you will be able to sell this idea. you will able to sell this product at a much cheaper cost because of the presence of offshoring. So it's highly beneficial for the high-skilled. What we call is that, this is like a trading task; so you can focus on this key, on the things that you are relatively more productive—you know, like designing the new iPhone, what is a new one—and then once you have designed this, then you can count on other people doing the product, assembling the product, at the lower cost.

Heintjes: Sort of like the classic opportunity cost discussion that we hear about?

Mandelman: Yes. So that means [it] is beneficial for the high-skilled. If you can count on a cheaper cost of production, that means that you are going to be relatively more competitive when you compete with other producers in different parts of the world.

Heintjes: Right, right.

Mandelman: But the problem is that the middle-skilled are going to suffer from that.

Heintjes: Right. Well, that actually leads me to my next question. Your research shows that wage decreases hit middle-skilled occupations hardest. Why do you find that to be the case?

Mandelman: Mostly because of offshoring, no. Thanks to the revolution in communications and transportation—it's very easy to break down the production process nowadays. And those things that are like routine, or that do not require an advanced skill, is increasingly easy to offshore these to developing countries where wages are much lower than in the U.S.

But for the low skilled, as I said before, offshoring is not a threat. The reason why for the low skill: the fact that the high skilled in the U.S. and capital did so well during this year, means that, there was an increasing demand for services. So if you are in charge of designing the iPhone, or the smart phone, you are going to be benefitting from offshoring, but at the same time you are going to have a bigger house, so you will need more gardeners, you will need like two or three cleaners that can clean your house, and that is going to increase the amount for low-skill jobs—the reason why low-skill wages are not going to fall as much as middle-skill [wages]. But, again, the fact that you have immigrants means that low-skill wages are not going to increase as much as they would have increased without immigration flows.

Heintjes: Right. Well, Federico, I asked you into the studio to talk about your research, and not yourself; but as you are an immigrant to U.S. from Argentina, did studying this topic feel especially resonant to you, as least compared with some of your other economic research, or was it just another undertaking for you?

Mandelman: No, I think it...so I started thinking about this like three years ago, and as time passed, I think it became more interesting for the general public to learn about these issues, particularly with the past elections. It's true that for me it was...on the one hand, I was passionate about this because everyone was discussing about this, so I want, you know, it's something like this gives you more focus; and it makes you happy to see that your research has an interest in the general public.
But on the other hand, I was frustrated with this in the sense that these topics, particularly immigration, is mostly like discussing religion. You have a specific idea of whether immigration is good or bad. You can present people with many facts, but if they are pro-immigration, nothing’s going to change their mind. And if they have a bias against immigrants, you can present any evidence, but they will never be convinced that there is anything good that you can take out from immigration.

Of course, you have people in the middle, but in general with this particular topic, usually you are...not only with the general public, but even in academia. In academia, immigration is a very divisive topic. You have people that are heavily opposed against immigration, and all their research will find that immigration is bad. And then you have the other group, that is mostly the opposite, they will find that immigration is good.

So, in my case, I try to be open-minded, and my findings were a basket of results. In my research, I think the results are very robust. Immigration and lower immigration barriers improve the well-being of the U.S., makes the U.S. a richer country. But also, I acknowledge that there are very important distributional implications of this. Immigration affects people very differently depending on what are your skills in the marketplace.

Heintjes: Right. You know, as I noted when we started speaking, your paper is published in 2014, but it still feels incredibly relevant to today’s world. It’s sort of an “evergreen” topic, and this has been a fascinating discussion, and I want to thank you for taking the time to talk with us today.

Mandelman: Thank you very much for the invitation. It was a pleasure.

Heintjes: Again, I’m Tom Heintjes, managing editor of the Atlanta Fed’s Economy Matters magazine, and thanks for spending some time with us today. I encourage you to visit Economy Matters at frbatlanta.org/economymatters, and read the many interesting features we have there for you, including a link to Federico’s paper—which, as I’ve noted, is a really interesting discussion of this important economic concept. It’s worth your time, and I encourage you to read his work.

Please return again next month for another Economy Matters podcast, when we’ll be speaking with Atlanta Fed economist Larry Wall about banking, and specifically the concept of “too big to fail.” Thanks again for listening.

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