

Exploring Careers in Economics Transcript

QUENTIN JOHNSON. Good morning, and welcome. On behalf of the Board of Governors of the Federal Reserve, my name is Quentin Johnson, and I want to thank you for joining us for Exploring Careers in Economics, both in-person and online. I'm joined here today by my colleague, with my colleague.

STEVE RAMOS. I'm Steve Ramos. I am a Senior Research Assistant. And today, we're going to spend the next hour discussing existing careers in economics, exploring careers in economics, and we're going to be doing this by talking to economists, officers, and research assistants at the Fed about their experiences and the need for diversity in economics, and also existing opportunities that you can all take advantage to fully understand what it means to have a career in economics.

JOHNSON. And before we hear from our first economist and Fed officer, Karen Pence, we would like to share a short introduction from Atlanta Federal Reserve Bank, President and CEO, Dr. Raphael Bostic. Dr. Bostic took office in June, 2017 as the 15th President and Chief Executive Officer of the Federal Reserve Bank of Atlanta, which serves the 6th Federal Reserve District, and covers Alabama, Florida, and Georgia, and parts of Louisiana, Mississippi and Tennessee. In addition, he serves on the Federal Reserve's chief monetary policy body, the Federal Open Market Committee. Prior to his appointment at the Federal Reserve Bank of Atlanta, Dr. Bostic served in many distinguished capacities as a professor at the University of Southern California. He's no stranger to public service either, having served as an economist here at the Board of Governors, and as the Department of Housing and Urban Development's Assistant Secretary of Policy, Development, and Research, where he was a principal adviser to the secretary on policy and research. Dr. Bostic grew up in Delran, New Jersey and graduated

from Harvard University with a combined degree in economics and psychology. He earned his doctorate in economics from Stanford University, and with such an impressive and impactful career, we are glad to have him deliver this morning's opening remarks. And without further ado.

PRESIDENT BOSTIC. Hi. My name is Raphael Bostic, and I'm President and CEO of the Federal Reserve Bank of Atlanta. I want to welcome you to this program on careers in economics. And I'm just so thrilled that you're here, either in-person, or tuning in online. This is such an important program because economics is really important. I know some people think about economics, and others will call it the dismal science, but I don't think it's dismal at all. I think it's important, it's interesting, and it's actually a lot of fun when you get into it. And so I'm, I'm really here to kick this off and give you a sense of why I think it's important and why I think it's really good that you consider economics, and really get a sense for yourself as to whether it's for you. Now, let me tell you a little bit about my story.

I discovered economics totally by accident. I was good in math in middle school and high school, but I didn't have any formal programs, formal courses or classes in economics or finance or anything like that. I went to college. I went to Harvard and took a course in chemical engineering. I wanted to be a chemical engineer, and it was only after a kind of crazy experience in my first year of chemistry class that I decided I needed to do something else. And so I got out of chemistry, and I first went to psychology. I really enjoyed psychology, and then ultimately I found economics. Now, it worked out for me, and I've found my field. I love it. I really enjoy it on a day-to-day basis, but what I know is that serendipity is not the best way to think about getting people to find a field. And so I'm going to do all I can to work to make sure that economics does not use dumb luck as its strategy to find people. And that's one of the reasons why we're doing programs like this today.

Now, when I finished graduate school, I came to work at the Fed, and the Fed has been a wonderful experience for me. I had a group that I worked with that allowed me to work on issues that I had been thinking about and caring about for a long time, how does capital affect communities in the city, but also across the broad country? And I learned a lot. And from my experience at the Fed, you know, a couple things have jumped out. First, the Fed is a really important institution. Second, it's really evidence-based, so they try to get the best knowledge and do the best analysis. So we have a superior understanding of how the markets work and how issues can be resolved. And then third, it's a real, it's a really collegial place. People are very nice. They're open to different perspectives, and it's really helped me grow as a researcher and as a leader. And the things I worked on initially at the Fed in my first years there I continued to work on for the next several years in growing a reputation and a stature. And I actually keep working on that stuff today. It's part and parcel of what we do at the Federal Reserve Bank of Atlanta and across the entire Federal Reserve System.

Now, let me tell you just a couple things. First, I want to do a special shout-out to any women that are present, and all people from minority groups. And this is mainly because our field is really not doing a good job in being diverse. And that lack of diversity disappoints me, and it disappoints me because I think it really hurts the field. Now, how does it hurt the field? What we know is that when people come from a particular background, if everyone comes from a particular background, they look at issues in exactly the same way. And when you have a team that looks at issues all the same way, you're going to get to a group think perspective, or a perspective where ideas and issues don't get challenged. And I've seen this time and time again in my time as an academic in economics departments.

And what I understand and what I've seen is that people leave the room, scholars leave the room, policy-makers leave the room, with only a partial picture of why people are making decisions that they're, that they're doing. And so having a more diverse team increases the likelihood that you will have ideas challenged and made to be tighter and more robust, squeeze out conventional wisdoms that may or may not apply. And so you have a role to play to make our field better. And when our field is better, our policies will be better. And then if our policies are better, people's lives will ultimately be better. So please do think hard about this and take this quite seriously because diversity, I think, is the future of economics to make sure that it remains an important policy area.

Now, let me just close by saying, I am very, very pleased, again, that you're here listening, and trying to learn more and get more information about careers and economics. By taking these first early steps to get more information, you're doing the hard work, that initial non-sexy blocking and tackling that will guarantee your path to success and make sure you wind up in a career that is, that is positive, that works for you, and that really makes our world a whole lot better. So best of luck, and enjoy the rest of the program. [Applause]

JOHNSON. And Dr. Bostic talked about the importance of diversity within the field of economics. And next we'll hear from our first economist and Fed officer about that specifically, Karen Pence. She'll talk about the state of diversity in the economics field and why it matters. Karen? [Applause]

KAREN PENCE. Thank you very much, Quentin and Steve. And thanks very much to all of you for being here today. I'm delighted to join my colleagues in welcoming you to Exploring Careers in Economics. I myself am a graduate of the D.C. public schools, so I'm delighted to see so many students here from local high schools and universities, and also a special welcome to the

students around the country watching us at watch parties or following us online. So welcome to all of you, and thanks so much for being here. Like President Bostic, I'll spend a little bit telling you about my journey to economics, which also is a little circuitous.

I didn't study economics in high school, didn't really know what it was, went to college, thought economics wasn't really for women, was a little intimidated by the math, but my first year, I had friends who took economics, and by the end of the first year, it was clear to me I was as smart as they were. So I signed up for economics, and I found out I liked it. And the reason I liked it is that economics really rewards hard work. You know, if you study, if you look at it, there is an answer out there. And so in contrast, you know, I loved my English classes, but I'm a very literal person. I read the book. I got the plot. I never saw the metaphors. Try as I might, I would just be able to write down the plot. But economics, you could keep working, and you could get to the answer.

I didn't decide to major in economics, though, until my junior year in college. And so I was doing a study abroad program in Cameroon in Africa, and the end of my semester was an independent study of a coffee cooperative. And it was a coffee cooperative that women in a rural village had founded because they wanted to earn money to send their kids to school. But then something terrible happened. The world coffee market collapsed. The women didn't get the money for their coffee. They stopped the cooperative. The kids stopped going to school. I mean, just, you know, really any, very little positive you can say about that story. And as it turned out, I had a lot of time to think about that story. It was a small village. It didn't have electricity. It was on the equator, which means there's 12 hours of darkness every day. Most of the people spoke a dialect I didn't understand. So I had a lot of time to think about that story and to think about what a tragedy it was. And that's when it really hit home to me, you know, economics can change the

world. Understanding things about markets, understanding things about incentives, that can really change the world, and it can change people's lives. And that's what caused me to go back to school and become an economics major.

Today's event is designed to give you information about pursuing a degree in economics and a career in economics. And I hope encouraging you to consider such a career. And there's two reasons that I'd like you to think about economics as a career. So first of all, why should you study it? First of all, it's tremendously fun. So, I mean, I think I have the best job in the world. I get to think about and answer really interesting questions, and the answers matter for people's lives. So here's a couple questions. We think about them at the Fed, but people think about them over the whole world. So think about this first question. Why do individuals who want to work not have jobs? If you think about that, that's also kind of a tragedy. Imagine you have someone, they want to contribute to society, they want to provide for their family, and they can't do that. Like just the sheer waste involved of someone not having a job is a terrible thing. And that's one of the things that economics studies. Another question, very salient to all of you in the room, is going to college worth it? Is getting a degree in economics worth it? If you spend four years going to college, studying economics, are you going to decide at the end, wow, that was a good use of my time, wow, that was a good use of my money, or are you going to wish you did something else?

And second, and I'll echo President Bostic's questions here, economics, like all fields, does its job best if there's a diverse group of voices, a diverse group of perspectives in the room. And unfortunately, now that's only partially the case. So I'll show you some data from my colleagues, Amanda Bayer and David Wilcox. These are data over students who graduate with a bachelor's degree from a four-year college or university. The first set of bars is for women. And

you'll see that 57% of all bachelor's degrees earned in the U.S. are earned by women. But then you look at bachelor's degrees earned by students in economics, and only 31% of those students are women. The story is not any better when you look at underrepresented minorities. And so the data here of talking about Hispanic or Latino students, black or African-American, American-Indian, Alaska native, and you'll see, these students represent 21% of the people who get bachelor's degrees in the United States. But they represent only 12% of people who get economics degrees. I should note here that Asian-Americans are not included in these statistics because they actually get degrees in economics at a higher rate than whites. But in saying that, I don't mean to minimize the incredible variety within the Asian-American community, or minimize the obstacles that those groups face.

And so then you might say, well, why does it matter? Why does it matter if it's not a diverse group of people? And so let me start by showing you a statistic here. This is a survey. It was done by economists in the U.S. And they were asked a bunch of questions, and one of them was, the distribution of income in the U.S., should it be more equal? And you can see, there's big differences here between men and women. So 65% of women said that yes, they thought the distribution of income in the U.S. should be made more equal, compared to only 40% of men. This data, in a little bit more I'm going to talk about, is going to be more about women, just because that's more of my experience and because we have data limitations, and some places we have better data by gender than we do by race. So you think and look at the differences across these groups, and you say, wow, how would economics as a field be different? How would the policies that economics influences be different if a more diverse group of people, if a more diverse group of perspectives were at the table?

One question that's often asked is, why isn't economics a diverse field? And there's one answer people sometimes give that I personally find very hurtful. And so I'd like to challenge that directly here today. And there's this idea out there that like, oh, women don't like math. And there are similar narratives, of course, for many other groups. Well, the facts really don't support that interpretation. So economics, overall, is a much bigger major than math. And yet the share of women who major in math is much higher, is higher, not much higher, but it's higher than the share of women who major in economics. So it doesn't really seem like math is the answer. And that's commensurate with my experience. You know, math is like everything. You study it, you work at it, you can do it. There's nothing special. There's no like fancy math gene out there that's distributed unequally across the population. I don't think math is the answer.

I think the answer is just that we're in what economists call a bad equilibrium. So right now, we're in a situation where people from underrepresented groups don't see people like them in the field, and so they don't know about the opportunities. They don't know about what a great career economics is and how you can use it to change people's lives. And to me, that's a really hurtful equilibrium. It's hurtful to the students because they don't have the opportunity to pursue what's a very rewarding career. And it's hurtful to our society because we don't have a broad range of perspectives considering some questions that are extremely important to all of us. And we need those voices, including the voices of everyone here today in the room.

The Federal Reserve wants to be part of getting us to a better equilibrium. And, in fact, economists from diverse backgrounds have been crucial to the Federal Reserve's success in fulfilling its mission. I'm thinking of people like President Bostic, who you heard from at the beginning, who started his career at the Federal Reserve, and is now President of the Federal Reserve Bank of Atlanta. I'm thinking of people like Janet Yellen, our former Fed chair. I'm

thinking of people like our former vice chair, Roger Ferguson, who was instrumental in the Board's work stabilizing financial markets after the September 11th attacks. And this is a commitment that we are still living out every day here at the Federal Reserve.

I have here some remarks from our current chair, Jay Powell. These are on the Federal Reserve's website. And let me read these words. I find them very powerful. "I am committed to fostering diversity and inclusion throughout the Federal Reserve System. Our mission touches the lives of all Americans, and we serve the public more effectively when our workforce fully reflects the characteristics and experiences of the full range of people in this diverse nation."

Thank you very much for joining us today for this event and for this very important work. We need young people like you to bring your diverse talents to improving this field, and through it, the world. Thank you, and please enjoy the event.

[Applause]

JOHNSON. Thank you very much, Karen. Thank you, Karen. Now we're going to move into the next phase of this morning's program, where we'll have a panel of economists talk to us a little bit about their background, their paths, and what they do as economists. We'll be joined by Laura Feiveson and Antulio Bomfim. Laura, Antulio? [Applause]

As they take the stage, I will give you all a little bit of background on the two of them. Laura is a Senior Economist here at the Board of Governors, and she currently works in the Household and Business Spending Section, where she prepares forecasts of aggregate consumer spending. Her research is focused mainly on empirical studies of consumption and saving behavior. She received her B.S. in math and physics from Yale University, and her Ph.D. in economics from MIT.

Antulio Bomfim serves at, serves the Board as a Special Adviser to the Chairman. He rejoined the Board in 2016 as a Senior Adviser in the Division of Monetary Affairs. He was formerly with the consulting firm Macroeconomic Advisers, as well as Oppenheimer Funds. He's published articles in finance and monetary policy and macroeconomics and is the author of the book, *Understanding Credit Derivatives and Related Instruments*, Second Edition. He received his Ph.D. in economics from the University of Maryland, and his master's of science in mathematical finance from the University of Oxford.

Now, the first question I want to start with, Laura and Antulio, is why is economics important to you? And I would like for you to describe your path and a little bit of your training that you took to become an economist.

LAURA FEIVESON. So I'll start that off. I, similar to President Bostic, came in from a math background. So in college, I majored in math and physics, and I did not have one economics class, which understates how little I knew about economics at the time I graduated college. I then went on to teach high school for a couple of years. I was teaching math at high school. And it was during that time that one of the economics high school teachers that I was teaching with convinced me that economics is math meets people. And in addition to loving math, I did love people too. So I decided to think about whether to give economics a go. And I came back, I took a couple economics classes as a post-graduate, and while applying for Ph.D. programs.

So for me, it was my math background that got me into a Ph.D. program. I didn't really know economics yet. And I took a few years, I got into MIT. I went to MIT. I took the classes. At the beginning of a Ph.D. program, classes are very math-heavy. And that was good for me because I had a lot of math. But I still didn't really have a sense of the real power of economics.

And that left me, when I started working my dissertation in a sticky place, because I suddenly was lost. The classes were over, I had to, to figure out what I was doing my research on, and I didn't really know economics yet.

And so it was this time, I took a year off graduate school, and I worked as a junior economist at the Council of Economic Advisers. And this was the first year of the Obama Administration. It was the end of the Great Recession. We were trying to figure out how to recover as an economy. And the Recovery Act, which was a big historic stimulus act, had just been passed, and the CEA, the Council of Economic Advisers, had the mission of reporting on the effectiveness of how well the stimulus was working. And I worked on that for that year. And suddenly economics clicked. I suddenly understood how important it was and how it can help provide a structure for thinking about the world and the effectiveness of policy. And so that was, I think, the most important part of my economics education. So I finished my Ph.D., I ended up at the Fed, and I think even more than opening career doors for me, which economics certainly has done, it's helping me think about the world in a different way in being able to engage with policy debates in a different way that's been so powerful for me.

JOHNSON. Antulio.

ANTULIO BOMFIM. First of all, it's a great pleasure to be, to be here. I mean, Friday is usually it's hard for me to get out of bed because I'm tired from the week work. Today, you guys actually made me wake up and happy and full of energy because I knew I was going to be spending some time with you, and so thank you.

So let me say this. My way of getting into economics was a little unusual. When I went into undergrad, I grew up in a country where you have to decide on your major when you're still in high school. So I had no doubt as a senior in high school that I wanted economics. I liked

math, I liked history, and I, as I talked to people, I said, well, what is the discipline that is going to combine both my love for mathematics and my love for history, and a lot of people kept saying economics. But I had absolutely no intention whatsoever of having a career in economics. What I wanted to do at that point in time, I wanted to join the Foreign Service, to be a diplomat. So if I had followed my initial planning, would find me at some embassy in some corner of the world not working for the Federal Reserve. Economics, at that point for me, was just a stepping stone towards the ultimate goal, which was to become a diplomat.

Now, why is this important? Let me say this to you. Economics, it gives you a toolkit, a body of knowledge that you can apply in just about everything, including being a diplomat in somewhere in the world. When I was thinking of, see, where I grew up, to become a diplomat, you first have to get a degree in something, anything, and then you take an exam to take a two-year course in the ministry of foreign affairs so you can become a diplomat. It's really hard to get in, but that's how, how, how it works. And people are going to say, you can get a degree in anything, this is when I was in high school, but economics or law, those are the ones that will prepare you better for it. So that's how I got into, into, into economics. And what I wanted to impress upon you is this. Even if you decide not to be an economist, and we'll come back to this hopefully today, I mean, you do get some skills, a way of thinking about the world, a disciplined way about thinking about problems that we face in society that you don't get, you don't get as broad a body of knowledge as you would in economics in many, many other, in many other instances.

So that's--so just to end up my story, once I finished with the undergrad, I said, hmm, maybe there is something to this economics business. I'm going to try for a master's because maybe by the--it was hard to get into the diplomacy school, so I said, oh, it will be my plan B. At

least I will have a master's if diplomacy is not for me. I started with the master's. Before the end of the first year, I had fallen in love with the place. Never even applied to diplomacy school. And it's just something that, it's a fond memory, it nurtures my love for foreign languages, but I fell in love, and before I knew, I was doing, I was in a Ph.D. program, and before I knew, I was here with you all.

JOHNSON. Thank you very much, Antulio. I guess we can consider you now a diplomat for economics, right? Next question. Could you start by telling us, what does an economist do? And describe some of the types of problems that they work on?

FEIVESON. So I can--there's lots of different things that economists do. And as Antulio said, there's a toolkit that can go--you'd be used for many different types of problems. So I will talk about what I do. I am a forecaster here, so I forecast GDP. And that is, that forecast is used by the Board to help make their monetary policy decisions. What I specifically work on is the forecast of consumer spending, which makes up 70% of the economy. And so I have to think about--so being a forecaster means not only I report on the assessment of current conditions, and also a prediction of what will happen over the next couple of years that's used for policy analysis.

And just to give a couple examples of issues that I've had to think through and provide some quantitative analysis about, one is the effect of tax cuts on consumer spending. So when taxes are cut, do we expect consumer spending to go up as people have more income to spend? And if so, how much? And also, does it matter who the tax cut goes to, if it goes to lower income or higher income families? Two, when hurricanes hit, we use--I've been using credit card transaction data that gives us spending at a daily level in specific areas to find out what the impact is of growth in these areas where the hurricanes have hit. And one other example is the effect of student loans on growth. So there's a lot of discussion about the burden of student loans

on individuals. And one of the questions that have come up is can student loans be holding back growth going forward? And so that's another thing that I have looked at.

JOHNSON. Antulio?

BOMFIM. So I'll share a secret with you. If you haven't been able to tell yet, I'm more than a little older than Laura, so I've had, I've had--that means that I have a longer time to experience the different things that an economists do. And so I'll tell you a little built about some of the things that I have done along, along the way. So I actually started my career here, as Quentin mentioned. And when I came in, that was at a time where the Federal Reserve was revamping. They had this big--to this day, this big macroeconomic computer model of the U.S. economy, about consumption, about how interest rates are set, about how business is a vessel. So they are putting that together.

So I joined that group as a freshly minted baby economist, a Ph.D., a freshman to Ph.D. at that point. So that was the beginning of my career. Try to, to capture in a bunch of equations in a computer, how is it that people decide to consume, and how much? And how businesses--what determines the decision that businesses make about what, what, how much to invest and wages and so on. So I started that way. And along the way, I was assigned to work on the part of the computer model that had to do with how interest rates and stock prices are determined. That gave me a test of a financial, financial markets, which is a big part of the economy.

To fast forward 11 years later, I ended up leaving here to go to the private sector. And again, I want to touch on this point of, again, the toolkit that economics gives to you. I left here when I had this traditional, very traditional economist's job to have a job that just about anybody could do. You didn't have to be an economist. So I left to be a portfolio manager, an investment manager, to manage investment bond portfolios for corporations, for pension funds, for people.

And I didn't have to be an economist to do that. But I'll tell you what. I was hired for that job because I was an economist, because I had a certain way of thinking about the world, the discipline that comes from say math, certain things they have to adapt. And my job then as a portfolio manager was to think about what I had learned about economics, and how was that-- how, say, perceptions about the economy were being reflected in the prices of a 10-year Treasury bond, for example, or a corporate net. And tried to use my knowledge of economics and my knowledge of financial markets to look at situations where I could, I could say, look, there is an opportunity here. This particular bond doesn't seem to be reflecting the economic reality out there. Maybe we should buy or sell this. And so does that serve you as an example of how just the versatility that you have in economics. You can have a traditional job, as I have now, as Laura has now as an economist, but you can apply to many different, many different areas.

In terms of what I do now, I love what I do now. It's thinking about monetary policy. It's trying to give my best input, my best advice to policy-makers, those who are making the decisions that affect all of us. Should interest rates be at this level or at that level? And what are the implications of doing that? And, I mean, I mean, how much cooler does it get than working for an institution as the Federal Reserve if you truly love economics as Laura and I do?

JOHNSON. Thank you very much. There are a lot of students here studying economics right now, some that will study economics at an entry level. To give them an idea of what to expect will be the lasting effects of that education, what principles for economics would you say that you use on a daily or regular basis?

FEIVESON. So I--so, I mean, I tremendous amount. So the primary one, I've got to say, supply and demand. Like that's, every day, my career, every day at home, I mean, that's just kind of motivates my whole life. But I'll add a few things. One is I find myself--and this is on a daily

basis, not on my job, but just going around, I'm constantly thinking about moral hazards. So driving down, you know, driving down the road, there's a car in front of us with the baby on board sticker. And whenever I see that, I always think, does that sticker make them drive a little more dangerously because they know other people are driving more-- driving more carefully around them? Football, which I don't watch a lot of, but my husband does, you know, football helmets. So yes, it's great that football players are wearing football helmets, but did the sport not evolve to be a little bit more violent because they were wearing football helmets? So that's another example of one of the principles that constantly is on my mind.

JOHNSON. Antulio?

BOMFIM. Are there any high school seniors in the room? Okay, so the reason I ask is this. So I have a high school senior at home. One of my daughters, she's a senior in high school now, and she's probably some of you are either doing this or getting ready to this do. Or if you are really like an early person who has done it already, but working on your college applications and supplements and all of that, I feel like I am applying to college now too. But anyway, so my daughter, she's one of those, oh, she wants to get everything done. So she comes to me a week ago or so, and she's all stressed out. She says, papa, papa is daddy for Portuguese. That's my native language. She says, papa, I am really stressed out because I want to get these things done, but I have also to deal with high school. So I turn to her and said, look, how many hours are in a day? Twenty-four. Can you make it 25? She says, no. Thirty? No. So you have a constraint. It's 24 hours. So you have to decide how much of those 24 hours you are going to apply to sleep. Hopefully at least eight. How much of them you apply to, you defer to your high school obligations, how much of that to swimming. She's a swimmer. How much of that to applying to college. Make a plan, decide how much it is, and stick with that plan.

Now, this is a principle that in economics we call a constraint optimization. What is constraint optimization? It's a fancy name for saying, look, in life, we face many constraints. If I am a consumer with my family, we have what we call a budget constraint. Income is this much, and we have to decide how much to spend, how much to save. My high school daughter, she has to decide how much time to devote to college applications, how much--so this notion of constraint optimization, to me, is a beautiful mathematical concept. You can write out the equations and you can divide first order conditions and everything. But it is also great principle for life. We all face constraints. Health constraints, financial constraints. Constraint optimization applied to our day-to-day life, whether you are economics or not, is trying to make the best out of your constraints, try to make the best out of it. And apply that to your life. So whether you go to chemistry, engineering, English, French, that's a constraint, that's an economic constraint that will serve you well, and that I try to apply to my life too.

JOHNSON. Thank you very much.

FEIVESON. I'll add, since you brought up your daughter, I have younger daughters who are four and six. So I thought of one other principle, which was decreasing marginal utility. So, so I get a lot more--if I'm trying to convince them to do something, I get a lot more bang out of my buck if I normally deprive them of candy and then offer them one piece of candy and they're really excited about it. But I found that if I, if I make the mistake of showering them with gifts or candy, then offering them one more on top of that really doesn't get me very much or get them very much. So that's another one.

JOHNSON. Awesome. And so with the constraint optimization in mind, we have about a minute or so left. But I want each of you to take roughly 30 seconds, that's the constraint we're

working with here, and answer the question, if there wasn't economics, how would society operate?

FEIVESON. Okay, so my 30 seconds is, this is similar to asking if there wasn't biology, how would the human body operate? Or if there wasn't physics, what would happen when someone drops a ball? Economics is the interaction between people, the incentives that drive people. So it's almost impossible to ask that question. That's where I will—

BOMFIM. Yeah, that's, that's a tough one to follow. But yeah, I mean, without, without economics, I'll give you a—I said I love history. Let me give you a quick historical example.

After World War I, they are trying to decide on reparations for Germany. How much should Germany, the defeated power at the time, pay to the allies, the allies they had early in the war, right? And some policy-makers at the time came up with some completely crazy numbers. And they would say, oh, it just sounded like a good number. There was no discipline thinking about, okay, the GDP of Germany is this much, so here is, here is something that would, that would, that would serve the purpose of the reparation mechanism at the time. So without having that, that, I am a true believer, and there are those who believe it too, that at that point, part of that, those, of those reparations, they were actually not knowing sowing the seeds of World War II, and I think we would have done much better if there was, at the time, a more, a more sound organized thinking around, not around the politics, not around the punishment, but also taking into account constraints. How much is it? What is the GDP of the economy at the time? How much could be, could be imposed in a way that the victors would get their fair share, but without, without making it so stringent that you ended up again contributing to World War II.

JOHNSON. Well, thank you both very much for your impassioned responses. Give them all a round of applause. [Applause]

We will now move on to our second panel with research assistants led by my colleague, Steve Ramos.

RAMOS. Thank you, Quentin, and thank you to both Antulio and Laura for those thoughtful responses. So as Quentin mentioned, I will be moderating the RA, or Research Assistant, panel. So research assistants here at the fed have the opportunity to work with Ph.D. economists on various interesting topics and research. So this can range from developing countries to consumer debt and student loans and credit cards. And aside from this research, they also have the opportunity to work in things like the forecast that Laura mentioned, and also stress testing, or any other activities that can result in policy formation. And so with that, we have three RAs here, and I'll let them introduce themselves, and we'll start with Teresa.

THERESA DINH. Hi, everyone. I'm Theresa. I was born in Hanoi, Vietnam, but I grew up in Tallahassee, Florida. And I went to college not too far away at the University of Florida, and I graduated recently with a bachelor's in economics and mathematics and a minor in statistics. I am now a research assistant on the emerging market economy's team here. And my work so far has largely had to do with the countries such as Columbia, Mexico and India.

FANTA TRAORE. Good morning, everyone. My name is Fanta Traore, and I am from New York. I studied at Howard University. I majored in political science and economics. And I currently work in the International Finance Division.

GERARDO SANZ-MALDONADO. My name is Gerardo. I am from San Juan, Puerto Rico. I also lived in Florida for a little while. And I majored in economics at Stanford. I work in the Monetary Prints Division.

RAMOS. So with that, we're going to get started with the questions. So I think this is a very important question that a lot of you probably asked yourself before. So what attracted you

guys to economics? And do you recall a specific memory or incident that inspired you? And Gerardo, do you want to start?

SANZ-MALDONADO. Yeah, sure. So I took my first economics class in high school. I was a senior. It was a graduation requirement. Like I didn't know very much about economics going into it. But I think one of the interesting things about taking economics in the fall of 2012, in particular, was we're in the middle of this like very contentious presidential election. It was all about the economy. And I found myself having these like really heated discussions with my classmates about like the Optimal Tax Rate, and like unemployment, and GDP growth, which like in retrospect sounds super lame, but I honestly, I found this important.

And so I decided to major in it when I went to college. It was kind of, over the years, as I learned more about it, that I started to think more about it, and it became a little bit more personal. And I thought about my own childhood. And I thought about growing up in Puerto Rico and this like horrible recession that happened. You know, people were getting laid off left and right. My mom was one of those people. And that was pretty hard. But it was a very pivotal moment in my life because that was kind of the factor that reciprocated our move to Florida. And that opened up so many opportunities and so many resources that I don't know that my family would have had in Puerto Rico. And so I think about that a lot. And it's always been very fascinating to me to think about how this like complete economic accident changed the course of my life. And if this hadn't happened, I don't even know if I'd be here. But I know that that wasn't the story for everyone, and I asked myself why.

And I think that's kind of what we do in economics. We think about kind of the paths that people's lives take and how economic conditions affect those things. And understanding how closely tied economics was to the story of my life, and the story of other people in my life, and

understanding that if someone was going to tell that story, that it would probably have to be me. That's kind of how I ended up here.

RAMOS. Fanta?

TRAORE. I can definitely relate with that, Gerardo. And my journey towards economics is definitely inspired by my family background. So my mother owned a hair salon in New York City. And through that, seeing her be a small business owner, I saw her hire her sisters, and also employ people in the Malian immigrant community. And seeing that firsthand, I saw how that experience of her taking on that leadership to open that salon has led to money being sent back home to family members in Mali. So seeing that was really seeing international finance.

And another experience that has also prompted my interest in economics is participating in the Public Policy and International Affairs Program between the summer of my junior and my senior year. So while I was in that program, I saw how data can be used to help disenfranchised groups. And an example of what happened while I was there was that a New York official came to that program and basically showed us how a supermarket was now introduced to a community that I'm very familiar with, which is in Harlem. Basically, for a large range of land, there is no supermarket in that area. And that is basically called a food desert. So this New York official used economic data to now have a supermarket be reinstated in that area. And prior to that, it was just like Wendy's and McDonald's. And because I have a passion for social justice and seeing communities that aren't doing well off, doing better, economics really spoke to me in that moment. And after that experience, I went ahead and no longer had my minor as economics, and double majored. So my senior year, I was then taking a bunch of economics classes because it really spoke to me that data can be used to serve disenfranchised communities.

RAMOS. Theresa?

DINH. So my interest in economics also has a lot to do with my family background as an immigrant. My family and I moved to the U.S. when I was four. And it wasn't until I was 11 that we went back to Vietnam again. So seeing the general standard of living that my grandparents, aunts, uncles, cousins lived in, the lack of economic development in the country and the lack of opportunities for my cousins, that planted this seed for my interest in using my career to address global poverty and inequality. When you see such stark disparities and lack of opportunity, you can't help but ask yourself why. And that question why has been the driving force that has led me to pursue a career in economic research.

RAMOS. So the next question, so once you guys decided to pursue a career in economics, so this question will be--we'll start with Teresa. What challenges did you face as an economics student? And how did you approach these challenges to overcome them?

DINH. Yeah, so the challenges that I faced had to largely due with lack of resources at my department in economics, and lack of sort of structured opportunities in economic research for undergraduates. So coming from a large state school. And some of the ways, or when you say a lack of opportunity, I essentially had to create my own opportunities. And some of the ways in which I did this were I did well in my courses. And then when the semester was over, I asked my professors, hey, can I be involved in your research? And this didn't have to be in just economics. I approached my, well, economics professors, but it also spanned business management to African studies. I also was an exchange student, so I could take sort of economics electives that weren't offered at my university, such as China and Africa, or development economics. And I also did an internship in data analysis, so getting those hard skills. I also had the huge privilege of being in the American Economic Association Summer Program. That was really pivotal for me in figuring out what a career in economics looks like and what it takes to get there. And now

I have an amazing community of alumni who provide like support and a community for being in this career.

RAMOS. So Fanta, could you talk about some of the challenges that you faced?

TRAORE. Absolutely. So there are two main challenges that I would say I faced as a person pursuing the field of economics. And the first one is lack of exposure. So I bridged that gap through participating in the same program that Theresa actually participated in, which is the American Economics Association Summer Program. And through that program, I learned more about a pathway towards the field of economics. So I took graduate level coursework while I was in this program. I had mentors and also access to resources to really carve out a way towards a master's or Ph.D. in the field, and also learning more about public policy in the way economics looks like when it's applied.

Another issue is the lack of representation. So earlier today, Karen Pence shared some data about how there is a push for diversity in the field, and why that is so important. Currently, what I'm doing about that is leading the creation of the Sadie Collective, alongside Anna Gifty Opoku-Agyeman, who's here in the room as well, representing University of Maryland Baltimore County. And basically, the Sadie Collective is all about getting more black women into the field of economics, and we'll be hosting our first conference in February. And the purpose of this organization is really to connect aspiring economists to existing economists in the field. So in seeing that there is a lack of representation, my way to address that is to create that community where I will see examples, and also get other young people thinking about the field through being around those examples as well. And I really want to emphasize, do not let that lack of representation deter you. There is space for us in economics. The economics field is

pushing for more of us to enter because they see the value that we all bring through our very unique experiences.

And with that, I also just want to share a quote from Sadie Tanner Mossell Alexander, who is the first black woman to get a Ph.D. in the field, because I think it really says something about her going after a Ph.D. in economics, especially during a time when she couldn't vote, she couldn't practice in the field, and also had all of these barriers to be an economist. That quote is, "I knew well that the only way I could get that door open was to knock it out, because I knocked all of them down." She was the first woman to get a Ph.D. in economics, and also the first woman to graduate with a law degree from the University of Pennsylvania. So if she could do that during her time, you, for sure, can. And the economics community is right behind you.

RAMOS. Thank you for sharing that with us. So I want to move on to the next question. Gerardo, can you tell us about how you translated your education into a career in economics? And what you do as a research assistant?

SANZ-MALDONADO. Yeah, so I think there are like kind of two pieces to how I turned my education into a career in economics. And I think they talked about this a little bit in the economist panel.

The first one is that an undergraduate degree in economics really prepares you to tackle a variety of different issues and a variety of different fields. And the reason why is because it emphasizes learning, like frameworks, like analytical frameworks, or like structured ways of thinking, so that you can like approach a problem that's very complicated and can think about it in a really careful and structured way.

And I think that the second piece is technical. Like it was conveyed to me early on in my undergrad that it was really important for me to take computer science classes. And I encourage

everyone in this room and everyone listening to take as many computer science classes as they can. Because it really does give you a leg up, I think like at least in my job, it's a little bit on the technical side for me like specifically. Like I work with a lot of data, and it's not always like structured super nicely, so I have to think about how to use like code to solve these problems in a careful way. And the fact that I learned, that I took the time to learn how to code in undergrad gave me a huge leg up and made it so that I was like ready to hit the ground running when I made it to the fed, even though at the fed there's a lot of opportunities to learn about, you know, not computer science specifically, but data science and computing.

RAMOS. So Fanta, the same question to you. How did you translate your education to a career? And why do you do as a research assistant?

TRAORE. Sure, so I'll start with the second question. As a research assistant, I do economic research, and I also do data analysis for the policy work that we do here at the fed.

And as far as translating my education into a career, I would say that my education has been very multifaceted. So I had the skills that I got from, like Gerardo mentioned, just critical thinking skills from my economics coursework. But then I also was very interested in other things while I was an undergrad, such as learning French, because Mali is a francophone country, and I'm very interested in francophone affairs. And I also was educated through my study abroad experiences. And those experiences were traveling to South Africa to Morocco to Senegal to Ghana to Rwanda, to all these different places to really get a sense of Africa as a region, because I'm really interested in doing work in Africa. And those experiences, the French background, the studying abroad, as well as my economic coursework, is what helped me get my first job. So prior to joining the fed, I worked in South Africa with a Social Innovation Incubator. And that experience really came about because I had all of those particular experiences that I had while I

was an undergrad. And my work looked like going to places like Madagascar, going to places like Tunisia because of my French-speaking background, and spreading some information about entrepreneurship that our work in South Africa was about. And I really would like to push you all to think about obtaining those kind of skills in pursuing, in pursuing economics.

RAMOS. Yeah, for sure. So once we kind of got to the fed, Theresa, what were some misconceptions that you had prior to starting your position? And how did working at the fed kind of dismiss some of those misconceptions?

DINH. Yeah, so I thought I had to know everything there was to know about finance and accounting. And while it may be useful to know, it wasn't absolutely necessary. A lot of the learning happens on the job. And there's a huge community here of research assistants at the fed. And one thing I didn't realize is leveraging that community. So, for example, if I have a quick question on like how do I do this in code, I can always like ask any of the research assistants. We have so many resources here, panels, speakers, how to apply to grad school, it really is so nice to have such a great peer community as a research assistant at the fed.

RAMOS. So Gerardo, what about you? What are some misconceptions you had about the RA position?

SANZ-MALDONADO. So it's kind of interesting because like for me, when I was like, I was first like encouraged by my adviser to think about applying for an RA with the fed. And to be honest, I like really didn't see myself here because I had a lot of misconceptions about what it was going to be like to work at the fed, or what it was going to be like to work at the government. Like I thought like I was going to like go to work wearing a suit every day, and then it was going to be like really serious, and I was going to have to like hide all these things about myself on a day-to-day basis about my background. And that's really not the case. It's a very like

open environment. It's very collegial. I feel like because it's collegial, it makes it possible to have these like collaborative kind of like relationships with other people in the office. And one thing that is also like very interesting that I'll note is that as a research assistant at the fed, it's different from a research assistant at a university because instead of working for one professor, you're an asset to a team of economists. And what that means is that you've got to work with a lot of different people, you get to work with teams of different sizes that are composed of different types of people, and that kind of teamwork, teamwork environment is really nice, and I really enjoy it.

RAMOS. Okay, so we're going to be going to our last question. This one is for all of you. So what is one piece of advice that you would give to a high school or a college student who is interested in a career in economics? And what is some advice that you wish you would have told yourself when you first started college? Theresa, do you want to start?

DINH. Yeah, so anything that you do, have a deeper reason or conviction as to why you're doing it, as that will get you through many of the challenges that it takes to accomplish anything in any field. Chances are if you're interested in economics, you're also interested in like law, business, finance, psychology, political science. And you have to figure out, of these, which is the best way for you to make your unique impact? So do an economic internship, or try to do some research, join various student organizations in different fields to figure out what your strengths are, what you find worthwhile, what you don't find worthwhile, because once you find your reason why, the choice of whether economics is right for you will be a confident one.

RAMOS. Fanta, do you want to go next?

TRAORE. Yeah, so I will echo some of what Theresa is saying. Figure out what it is that you're passionate about, and involve yourselves in that in many different ways. So, for instance,

let's say you're passionate about small business ownership, if that's what you're interested in, there's so many different ways to look at the experience of small business ownership. So immerse yourself in it through perhaps starting your own small business. Another way that you can go about it is through working with someone who's a policy-maker and is interested in seeing more small business ownership.

Another way to go about that is also working with an economist who is doing research on small business ownership. And the reason why I say to expose yourself to one interest, for example, in different ways, is because you'll see that there's so many ways to go about economic development, community development, and exploring this interest, and that will open you up to understanding what it is that you like, what it is that you don't like, which is also just as important, because you don't want to do that for the rest of your life, and also get an understanding of what the field consists of. So having all of those different kinds of exposure is going to be beneficial for you to understand yourself and what opportunities there are.

And then as far as advice on how to go about college and high school, my advice is to think about building a skill set that you can sell. So with everything that I've mentioned about my own background and getting my first job, I managed to get skills in data analysis, I managed to gain skills and an understanding of the Africa region, and I also had French as a skill set, which led me to travel to these different francophone countries representing the organization I was working for. So for you all, I would say, I would suggest that you look into that for yourself. And that is something that will carry you on through your career.

RAMOS. So unfortunately, we are running out of time, Gerardo. I'm sorry you're not able to answer that question. But at this time, I'd like to invite Chris and Lil, who will talk about the

resources that we have available here at the fed to help you in pursuing these careers in economics. And thank you to our panelists here as well.

[Applause]

CHRIS KURZ. Hi, my name is Chris Kurz. I'm an economist here at the Federal Reserve Board. You've heard from the president of a regional bank, our outreach specialist, three fabulous economists, a gaggle of research assistants, and all of these folks are an important component about why the Federal Reserve works the way it does. At this stage, you might be asking yourself how you, your school or your staff can get more involved and take advantage of the resources that the Federal Reserve Board provides. And I'd like to describe three of those educational programs to you guys today. Those resources are listed on the handout you have, and it's available online. So please take that with you, because this is going to be your way of being able to reconnect with us in the future after seeing this event today.

So the first program is called Coffee With the Economist. This is a program designed for undergraduates. It's really a lot like comedians and cars getting coffee without the comedians, without the cool cars, and without the celebrity status. And actually, you don't have to have coffee either. Coffee With the Economist is a program that's designed to actually provide sort of this mentorship light for individuals who are thinking about a career in economics, that provides one-on-one interaction for individuals between a Federal Reserve Board economist and people that sign up for the program. And what I mean by mentorship light, it's not necessarily a long-term commitment, it's really a way of putting you in contact with somebody either locally, in the D.C. region where you can meet with an economist and go to the Federal Reserve Board, have coffee, have a discussion about some of the questions you are trying to think about your career path. Or more recently, we kind of evolved the program to work remotely as well so you can

have a Skype conversation with a Federal Reserve Board economist and talk about a possible career trajectory in economics. Importantly, I'd like to say that right now, we have over 300 economists at the Federal Reserve Board. And if you want to think about a statistic that shows you the commitment of the organization to try and further diversity inclusion throughout the profession, about a third of those, a hundred economists have signed up for that program. Over the past two years, we've made about 60 matches. And we hope that some of you all, and some of you guys paying attention right now online, some of you all paying attention online will be signing up for the program and be matched sometime in the future.

The second program I'd like to talk about is Fed Ed. This is for local high schools and colleges. And really the goal of that program is to expose individuals and educate individuals about economics. This is a great program. It has research assistants visit a local institution, visit a high school, and have discussions about different programs, about economics and educate about the Federal Reserve.

The last program I'd like to talk about is Fed Challenge. This is for undergraduates. They essentially come to the Board and compete. It's a college fed challenge. It's a team competition for undergraduate students, and they analyze economic and financial conditions. They formulate monetary policy. And they essentially act as the FOMC. And these competitions take place across the country, and also take place in our Board room, where the FOMC actually meets. So I'd like to hand it over to Lil.

LIL SHEWMAKER. Sure. Thank you, Chris. So I guess I have one real message, and my message is that we have jobs, and we have lots of jobs. And so hopefully that's good news for you. My name is Lil Shewmaker. I work in the Economics Research Division. I've been involved in recruiting and hiring for a number of years. I want to mention two positions that we have

available. And that's the research assistant position and summer internships. And I also want to emphasize that I'm here not to talk about--or that I'm not just talking about positions here at the Federal Reserve Board in D.C., but I want to make sure everyone understands that we are a Federal Reserve System. And that means that you have opportunities at 13 separate institutions, and that all 13 institutions do hire research assistants and interns. Keeping in line with that one system approach, we, a few years ago, developed a system portal, and that, that portal, I would encourage you to take a look at. It's fedeconjobs.org. What that portal does is briefly explain the role of a research assistant, which is basically this same general responsibilities, whether you're working at one of the fed banks or here at the Board. So the portal talks about the RA job. The portal includes testimonials from our current RAs and some of our former RAs. And importantly, it lists the 13 separate institutions and provides links to each of those institutions where you can find specific information about the openings and the application instruction, which is a little different at each of the, at each of the banks and the Board. So I would encourage you to kind of decide, assuming that you're interested in economics after this wonderful program this morning, to think about where you might want to be geographically, and to use the portal to access those sites at the various fed banks and submit applications.

Lastly, I just want to mention, which has been a theme of the program this morning, that the Federal Reserve System is truly committed to diversity and inclusion. And in reviewing applications for our positions, we very much appreciate and recognize the importance that different perspectives and different experiences bring. And we do look at the various experiences that everyone has had, and we pay very much attention to looking at perspectives that could bring us to a better place. Thank you.

[Applause]

JOHNSON. Thank you, Lil. Thank you, Chris.

Today really has been a great day. You've heard from people at every level of the fed, on careers and economics and why it's important that each and every one of you hear this message. You've heard today from the largest employer of economists in the U.S., if not the world, that you matter, that you can be here, that yes, this is a career field for you. Ph.D. programs exist. They are looking for students like you. Undergraduate programs exist that are looking for students like you. Organizations like this exist that are looking for students just like you. And no, you are not a nice-to-have addition in this field. You are a need-to-have addition in this field. I encourage you all to be curious. Like Theresa said earlier, find out, explore, learn new things, fill your head with all kinds of ideas. Because at that intersection is where economics lives. Wherever there are people, wherever they are interacting with each other and their environments to pursue a living, you have economics. You live it every day. Learn more about it.

And I also encourage you all to follow the hashtag, hashtag fedeconjobs, and at fed underscore careers. Thank you all for joining us today. And again, on behalf of the Federal Reserve Board of Governors, have a great day. This has been Exploring Careers in Economics.

[Applause]