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HOW TO GET AMERICAN WORKERS A RAISE: POLICIES TO REVITALIZE WAGE GROWTH

A HAMILTON PROJECT POLICY FORUM

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P R O C E E D I N G S

MR. RUBIN: Can I have your attention, please? Thank you. On behalf of all of us at The Hamilton Project, we welcome you today's program entitled, *How to Get American Workers A Raise: Policies to Revitalize Wage Growth*, which builds on a program that we had on this topic in September of last year, and beyond that we've had many events, many discussions that have -- related to the subject.

For example, last year we did a joint venture, we co-hosted with Stanford Law School and Sheryl Sandberg's Lean In, a discussion in Palo Alto about female engagement in the labor force.

As all of you well know wage stagnation is a complicated topic, any issue that affects wage, that affects economies or economic growth will affect wages, and an effective approach to improving wage performance is not a silver-bullet question, but rather involves a wide range of policies.

In that context, you've each received a copy of the book The Hamilton Project has put out, which has a set of policy proposals that are aimed at improving wage performance in the United States and, again, that manifests how broad the range of those policies should be.

The book also has a chapter that highlights the many discussions we've had on the broad range of human capital, and obviously human capital is a key, a key ingredient of a broad-based approach to dealing with wages.

The book also fits into a larger context. As we all know, we have had enormous discipline, we have, and now really quite some time have had enormous dysfunction in our political system, and the result is the great preponderance of our policy issues have not been addressed.

And that, at least in my view, makes policy development by non-governmental institutions all the more important in order to create intellectual work product for that time when the Federal Government is again able to function effectively on these matters, and also to inform states and localities in their activities.

Let me close with comments on two of the issues that we'll discuss this afternoon, for consideration by discussants if they see fit.

First, in the mid-1990s, really the earliest, and then the rest of the 1990s, as we all know, wages increased at a robust level at all quintiles, and that was in some fair measure due to tight labor markets which in turn, at least in my view, were a function, in some fair measure, of good policy. And that is a backdrop for the discussion we'll be having about expansionary fiscal and monetary policy.

But let me just add my two, own two caveats to that. One is, with respect to fiscal policy, we are now in a -- the debt-to-GDP ratio is clearly worse today than it was at the time that those policies were put into place back then. But more importantly, if you look at our trajectory, the debt-to-GDP ratio is about 76 percent right now, and it's generally thought, or projected to be likely to be 100 percent

10 years from now after the recent tax cut and budget bill, and that carries many of its own negative consequences.

With respect to monetary policy two comments: one, once inflation expectations get triggered that can be a very difficult problem to deal with; and secondly, when you have easy monetary conditions it does have a tendency, I think, to lead to reaching the yield, and that can lead to asset bubbles which, again, can have very serious adverse consequences. And I at least don't think we have the kinds of macroeconomic policies that you need, macroeconomic regulatory potential policies to deal with asset bubbles.

Second, and therefore it seems to be desirable to try to avoid them in the first place if you can. Secondly, those who support market-based economics, and the business community certainly does that, should also support collective bargaining to provide a true labor market with a fair balance of power between business and labor, rather than a market with all the power on one side.

Also I think business will do far better over time if their workers succeed and do well. I also think the workers are best served by their unions, and what I'm about to say is what many unions are now doing, if the unions take into account the success and economic well-being of the institutions that the workers are employed by, in order for those institutions to remain in a position to provide robust job creation and good wages.

Turning to today's program, the résumés of the participants are in your materials, I'm not going to recite from, but simply say that they are really an extraordinary group of people that are collected to discuss this subject with us. And we are delighted to have them, and greatly appreciative of them being with us.

Let me also recognize The Hamilton Project Team: Jay Shambaugh, our Director Intellectual Leader; Kriston McIntosh, our exceedingly capable Managing Director; and Ryan Nunn, our deeply thoughtful and knowledgeable Policy Director; and a staff that is talented, hard-working and indispensable to all that we do.

Also, we are delighted that Jason Furman, who was our second Hamilton Policy Director, has now become our Senior Counselor to help provide us with some, at least, level of incremental intellectual guidance, hopefully.

With that, I will turn the program over to Jay, wherever Jay is, Jay Shambaugh. Oh, there he is. Okay, I turn the program over to Jay. Thank you, all. (Applause)

MR. SHAMBAUGH: Great! Thank you, Bob, for that welcome. And thanks, everyone, for joining us here today. My name is Jay Shambaugh, I'm the Director of The Hamilton Project, and your Moderator for this first panel.

So, this first panel is, as you can see, is the program titled: *Restoring a Level Playing Field for Workers*. This is kind of our -- we are rolling out three panels here, as I'm going to advertise the book which you've probably all got, which is this new book that we've just put out, *Revitalizing Wage Growth*. This is: I edited with Ryan Nunn, our Policy Director.

And I also want to thank Becca Portman, one of our -- on our staff who did a ton of work to try to get this across the finish line, as did our entire staff. I also want to thank Kriston McIntosh, and Melanie Gilarsky for managing the entire process of getting all these people on stage, and all of you in the room, which is an important and challenging thing to do sometimes.

One, just a quick note, you've all gotten, or you will see people passing around note cards, so we'll have Q&A later in the session, and the way we typically do that is people write down questions on note cards. So, if you've got a question please write it down, it'll get passed up to me, and I'll be able to ask questions to the panel a little bit later.

As motivation for what we are trying to talk about here; I think just think broadly, people are aware that wages have not grown as fast in the last nearly 45 years as they had at other points in time in the U.S. economy. Just to put a fine point on that, since 1973 real wages for production and non-supervisory workers, which is roughly the bottom 80 percent of the distribution, or what you could think of as the typical worker, they've grown by about 0.2 percent a year, right.

So, if you think of that you think that in real terms, so you think that's 2 percent after 10 years, or it takes 350 years to double. All right, so that that is, I think, pretty much the definition of stagnation there.

Or put differently, since 1979 if you look, the top quintile, the top 20 percent of workers have gotten decent raises. The next quintile had done okay but not very well and, really everyone below that has seen almost no wage growth, in real terms.

So, there are many causes to this, and what this panel is going to try to think in particular about, are issues surrounding bargaining power, and in terms of how the wage-setting process is done, and labor standards in institutions. And really in some sense, have our labor market institutions kept pace with a changing economy?

So, with that in mind I'd like to introduce our panel very quickly. You have programs that give their detailed bios. They all have lots of impressive things they've done in their lives, and lots of impressive reasons to be talking here today.

But just very quickly, starting to my left we have Cicely Simpson, who is the Executive Vice President at the National Restaurant Association. Next to her is Alan Krueger, who is an author of one of the papers in this volume, co-authored with Eric Posner, he's a Professor at Princeton and former Chair of the Council of Economic Advisers.

Next to him is Heidi Shierhotz, who is the Senior Economist and Director of Policy at EPI, and she was also just recently the Chief Economist at the Department of Labor; and all the way down we had Bill Sprigs who is the Chief Economist of the AFL-CIO, and a Professor at Howard University.

So, I'd like to start by having the two people who have authored chapters, Heidi also is an author of one of these chapters; and let them kind of briefly describe how they see this problem, and in some sense what they want to do about it in some sense, or at least in just concise terms, what they are proposing doing about it here.

So Alan, can you tell us a bit about your proposal, and maybe kind of the evidence behind it, and what you think needs to be done?

MR. KRUEGER: Sure. Thank you very much, Jay. And thanks for organizing this meeting. The paper that Eric Posner and I wrote is focused on the lack of competition in the labor market, which I think is becoming more of a significant problem, particularly with the decline in institutions that used to be a counterbalance to employer bargaining power, such as labor unions, or the erosion of the real value of the minimum wage.

And we are focused on the following

question: Why is it that so many employers say, we can't find enough workers, yet wage growth is so sluggish? And you see that in the objective data as well as in the anecdotes where job openings are quite high, yet wage growth has been sluggish. And even if you look across occupations where vacancies are particularly high, you don't see stronger wage growth.

And the idea that employers might look for ways to exploit their monopsony power, or bargaining power in the labor market is not new. In *The Wealth of Nations* Adam Smith wrote that employers are in a tacit, a constant and uniform combination to keep the wages of labor low.

So, it's not a new idea in economics by any means. And I was struck when I worked at the Treasury Department with Neel Kashkari, how people who came to Treasury from the finance sector have worked in markets thought that companies try to manipulate markets all the time. You know, look at the exchange rate market, a much bigger market than the labor market, where there were efforts to try to manipulate the market.

So, we focus on two practices that have become, surprisingly, prevalent in the U.S. labor market. The first is non-compete agreements: a non-compete agreement is an agreement which requires workers that they can't leave and work for a competitor. They can leave but they can't work for a competitor for a certain period of time or within a certain geographic area.

And we document a new fact in our paper, we are the second one that I'm aware of to try to estimate the extent of non-compete agreements, and we find that a quarter of the U.S. workforce is covered by a non-compete agreement in their current job or in a previous job, and that's based on a survey of over 900 workers that we conducted early in 2017.

If you look at lower-wage workers, below the median wage, 21 percent are covered by a non-compete agreement. Now, one could possibly justify non-compete agreements for workers who get specialized training, and if they are aware of the trade-offs involved, they might be willing to sacrifice some of their opportunities in order to get the additional training, but low-wage workers receive very little job training in the U.S.

So, that's a one fact. The second fact that we document, which follows up on work that I've done together with my colleague Orley Ashenfelter, is that a majority of franchises require their franchisees that they cannot poach workers away, they cannot hire workers away from another franchisee in the same chain, or from the company if the company also operates outlets.

This is particularly prevalent in quick-service restaurants where 80 percent of the major quick-service restaurant chains have these agreements, 56 percent of franchises overall have such an agreement, Jiffy Lube is an example. If you work at Jiffy Lube you can't go at the -- if you own a Jiffy Lube you cannot hire workers away from another Jiffy Lube in the chain.

And we find that this has grown, this is the new fact, when we looked 20 years earlier, it was 36 percent of major franchises had no-poaching requirement.

And no-poaching requirement is different from a non-compete clause because it's hidden to the worker, the worker might not even be aware that the company has this no-poaching agreement. Currently there are two lawsuits against fast food chains, McDonald's and Carl's Jr., arguing that this is an antitrust violation --

(Audio interruption)

MS. SHIERHOLZ: -- attract the features in the current environment of the suite of things that I will -- (laughter) --

MR. SPRIGGS: Just don’t think about (crosstalk).

MS. SHIERHOLZ: Yeah. Okay. But now I can just relax a little bit, I will quit screaming. Okay so this, most of the things that I'm going to talk about can be done at the state and local level, and don't have to be done at the federal level, which, for obvious reasons, is useful in this moment.

And then the final thing that I want to say is that inherent in this focus is that it is a suite of things, most of them are things that are very familiar to you.

So, I am just going to tick through them very quickly. So, I have ten main things that I'm going to cover and I will try -- I have notes here in case I forget one.

Okay, so I'm going to go through them quickly. We need to increase the minimum wage; it is 25 percent below in real terms where it was 50 years ago. There was a proposal last year by Sanders, Scott, Murray and Ellison that would have increased the minimum wage to $15 an hour in 2024, that's 12.70 in today's terms -- in today's dollars. I think that's a reasonable policy for a federal minimum wage, obviously states and localities can and are going higher than that.

We need to increase the threshold below which workers cannot be denied overtime pay. To put some history on that, in 1975, 60 percent of full-time salaried workers earned less than the threshold, but it has eroded so much over time, that right now overtime, that right now it is less than 7 percent. The threshold of the 2016 rule that the Trump administration has now abandoned was pretty modest, it would have increased it to 33 percent.

So, we need something that's sort of at least as strong as that. We need to pass fair scheduling policies, so irregular and unpredictable schedules lead to irregular and unpredictable earnings. A key sort of set of principles around that is we need policies in place that require advanced notice of schedules.

And then, in the event of schedules changing at the last minute, which does happen, or on-call scheduling, workers just get extra compensation, and you can think of it, in turn, the sort of same spirit as extra compensation for overtime pay.

And that the idea behind that is just, employers will then have skin in the game when they make decisions that add chaos to workers' lives, and when that happens, workers will also get compensated to help defray the impact.

We also need to boost unionization. I think the decline in unionization is one of the largest factors in the stagnation of middle-class wages -- did I just go out again -- Oh, no, sorry. And the stagnation of middle-class wages over the last four-and-a-half decades; so, I think what we've seen is that labor law just has not kept up with massively increased employer aggressiveness in fighting unions.

So, a couple of principles there, we need, so people who want to form a union can do so free of intimidation and retaliation by their employers. So, one way to do that is to beef penalties for unfair labor practices. Another thing is that workers who do -- we need to make sure that workers who do join a union are able to successfully get to a first contract in a reasonable timeframe. So, one way to get at that is to put in mandatory mediation.

And the third thing is to ban so-called

right to work, which is work laws, state-level laws which just says that it prohibits private-sector unions from being able to charge union members the cost of the representation that those union members -- not members, but the people who are covered by the contract benefit from.

Another thing, these are two quick ones that I can just dispense with quickly. We need paycheck transparency, that's in another paper; I won't go into that here. And we need to, as Alan said, really limit the use of non-competes. We need to support joint employer standards, and so that's just when two or more employers control the conditions of work of a single worker.

So, they control wages, schedules, job duties, what have you. If that's the case they both need to be considered employers that is particularly important in the fissured workplace as the workplace becomes more fissured, it's sort of ripe for violation of Labor Standards when the lines of responsibility for complying with those labor standards become a lot murkier. So, it's really important to have businesses who control the conditions of work be counted as employers.

We need to ban mandatory arbitration of statutory labor and employment rights. We did a survey, EPI commissioned a survey last fall that found that 56 percent of private sector, non-unionized workers are operating -- working under a mandatory arbitration agreement, and that of those 41 percent have been -- were required to sign a Class Action Waiver as a condition of employment.

This dramatically cuts down on a key labor standards enforcement mechanism. For individual, non-unionized workers to be able to successfully pursue a claim against a company, they need a way to join together. Class-action claims, in particular, have been really important for combating race and gender discrimination, including sexual harassment.

It's just, what we need, this would have to be done at the federal level, but what we need to do is to amend the Fair Labor Standards Act to have it be a violation of that Act to ask an employee to sign any agreement that would require them to arbitrate labor and employment -- their labor and employment rights, or to sign a Class Action Waiver. I have two more I think, and then I will turn this over.

We need to ensure that immigrant workers have full rights, so there are some -- two groups of immigrant workers, unauthorized workers and temporary guest workers that create this kind of lawless zone in the labor market where these groups of workers have few rights.

So, what needs to be done there is in order to bring unauthorized workers out of the shadows, we need a path to citizenship for unauthorized workers, and we need to make sure that temporary guest workers have full labor mobility, full employment rights, and strong protections against being underpaid.

And then finally, we need to boost enforcement. Our labor standards are only as strong as their enforcement, enforcement for things like wage and hour laws, safety and health laws, is sort of woefully inadequate. We need to increase that, and we also need to increase penalties for violators, and increase protections against retaliation for people who make claims. And I think I got all 10, okay.

MR. SHAMBAUGH: Okay. Great! Thanks. I want to quickly, before I bring the rest our panelists, just to mention, there are two other proposals in the book that, if you haven't had a chance to read it since 9:00 a.m. this morning, are relevant to this panel.

One pushes a little further on non-competes, in some sense I think of it, as Alan saying, just get rid of them for people below the median wage, and there's one from Matt Marks that gets into some of the nuances you might need too, for that kind of half of the labor force above the median wage, and how you might want to reform non-compete use there.

And one from Ben Harris looking at wage transparency, as Heidi mentioned. Thinking about: if in some sense, and this is a segue to bring it to Bill; if fewer workers are being represented by unions, that leaves a very challenging information asymmetry at the bargaining table, where the firms have a lot more information about the wage process than an individual worker does.

And when that worker was being represented by a union, that wasn't as much of a problem, because the unions had a lot more information too; but if fewer workers are represented by unions, what might we need to do in terms of reforming institutions to make sure that bargaining process is a little bit more balanced.

But with that in mind, I'd like to turn to Bill for a second, and just ask: from, kind of, your perspective both as an economist, but also one who works for one of our larger labor organizations. Where do you see the problems of wage stagnation, and the steps that we need to take to address it?

MR. SPRIGGS: So, I think it's in all of the things that you just heard, this erosion in labor standards is broad. Of course, I would start with union density, because part of the political ability to erode them, has to do with the erosion of the power of labor unions.

So, not only is it that workers aren't represented in the economic sphere they aren't recognized in the political sphere, and so that changes the way we debate these things. The Supreme Court and its ruling that will come down on Janus, will have a lot to shape going forward how that plays out.

I think you cannot underestimate the size of that effect. In those states where right-to-work laws become a fact, we know that the politics in those states change. And so it isn't simply a correlation that low union density means less investment in K through 12 education, less generous unemployment benefits, less generous workers comp, less generous support for mothers with single families.

It goes on and on and on, that this becomes a war against workers on every front, including the ultimate, which is, if we haven't succeeded and making you feel subservient enough that you must work for a minimum wage that we dictate, we will lock you up, because those states also have the highest incarceration rates. So, I mean it runs the whole gamut, and then speaks to all of these, so there's a huge feedback loop to lower union density.

There's another challenge. In 2013 the college-bound seniors in the United States, 50 percent were non-White because -- well, White non-Hispanics. Since then, White non-Hispanics are the minority. So, it is no longer the case when we talk about low-wage workers, and new entrants to the labor market that there's this minority. And the challenges that are faced by non-White workers are huge, it feeds into monopsony, particularly for Black workers who are highly isolated, their job networks are very limited.

And when you mentioned about transparency in wages, there also wasn’t transparency in job opportunity. So, really you need to have an actually fully functioning low-wage labor market, in which people can actually see all the openings that are available, and all the wages.

This is not true today, and it feeds into monopsony, because of course a Black worker is very limited. They do face discrimination, discrimination is real. All those people who voted for Trump are not racists, but everyone who is racist voted for Trump, (laughter) so we need to be clear, there are a whole lot of them. There are a whole lot of them, and they are clear enough to affect the job mobility for low-wage workers, and that creates this kind of captive labor market.

So, that has to be fought against. The whole thing about your irregular jobs, irregular hours, has to be thought of as part of this non-compete, because what happens when I give you an irregular schedule, is I'm saying, you cannot have two part-time jobs, because how would you have the second part-time job. You don't even know what your hours are to go to the other employer.

So, we have to understand it from: is that is a non-compete clause, when employers refused to state clearly, what are your hours, and preventing you from even bargaining to get another part-time job.

So, this erosion is complete but the political capture is huge, and the fact that we can't even discuss these in every state as part of that capture. The fact that we can only discuss this in California, and New York, and Connecticut, speaks to how the political landscape has been changed away from being able to solve the problem.

So, I think these are in the right direction, but the final thing, which Heidi didn't get to talk about, but what is absolutely necessary, on the gamesmanship of employers. Employers they like to play this game of: all this new technology, we are on the cutting edge. No, you just figured out another way to cheat.

What you have to remember is, going back to the Romans, whenever there's a new technology, pornographers are always the first ones to take advantage of it because, you know, they are trying to get around whatever rules you had against pornography, it's the same thing with employers. So, this whole thing about: they are not employees, let me figure out and, you know, in you know smoke and mirrors, they are not an employee, the default has to be what the actual law is. If I employ you, you're an employee. That has to be the default.

It actually gets to being fair to our tax system, so that if the worker who now is being treated as employee, really wants to say: no, no, no, no, I'm really an independent contractor. Fine, take it up with the IRS, when you file your tax, you know, give verification that I paid my own social security tax, that I did all the other taxes, and everything else that an independent contractor -- a true independent contractor would do, take it up with the IRS, get your refund at that point. But at that point of engagement, you're an employee.

And this will level the playing field, this new tax code of course gives every reason to want to arbitrage, once again, on who's an independent contractor, because this new tax code gives an even bigger incentive for a worker to try and cheat on their taxes, to their own detriment, because they won't have access to unemployment insurance, they won't have access to workers comp. There are a whole host of other things that aren't going to happen.

MR. SHAMBAUGH: Great! Thanks. Cicely, I'd like to turn to you, and when we listen to both, or really all of the previous speakers, there are a lot of things that often touch pretty directly on restaurants, right? So, you know, Alan is talking about the no-poach agreement; that's often an area that comes up, discussions around minimum wage, in particular, often become, for some reason, most salient when people talk about them in the fast-food industry.

At the same time it feels like there's often a lot of agreement between, kind of, the Restaurant Association, and the firms there in terms of goals, whether it's flexibility, and hours in training, and kind of ladders for people to move up in employment. And so I guess I'm wondering, where you see areas of common ground in terms of policy, where you might see things that operate in a way beneficial to everyone here?

MS. SIMPSON: Sure. I appreciate you starting the question that way, so I think you guys are wondering: why am I here? Why am I on this panel? So, thank you for that question. I think it ties it all together. Before I answer it, though, let me tell you who America's restaurants are, because all of you have a favorite restaurant, right?

And as America's restaurants, we do, we open doors to everyone who comes in, and we do teach the fundamental skills that pave the way for a person's life, and for their career. We teach customer service, we teach a strong work ethic, we teach teamwork. And so as Americans restaurants we have a story to tell, so thank you for acknowledging that, Jay.

Whether you walk in our doors, and whether you come in for your first date, or your first job, or a family meal, we are proud to be part of the fabric of America and talk about that very mobility that Jay just mentioned.

So, if you think of America's restaurants: who are we? We are today's service sector economy, 90 percent of restaurants are small businesses, we employ less than 50 people, 90 percent employ less than 50 people in their restaurants. And if you think about that, that means we are in every community, we employ 15 million Americans this year, and guess what, we are the nation's second-largest private sector employer. That's who the restaurant industry is.

And so when you start talking about who we are, and why we are here on this panel, then certainly you'll understand that America's restaurants and today's service sector economy, we find ourselves in the midst of a lot of these policy debates.

We can find common ground with our fellow panelists here, and I know they are going to be probably surprised to hear me say that, but we can't talk about flexibility, because our employees, and we just did a survey of current and former employees last year, they tell us, that flexibility is the number-one reason why they come to our industry. So we can talk about second-chance opportunities.

Guess what? We employ more folks who've been incarcerated twice the average of any other service sector industry. So, that is common ground we can talk about, job training programs, we can talk about apprenticeship programs, we worked with the Obama administration to start the first-ever apprenticeship program for the actual hospitality sector.

These are the conversations that we are having. And, yes, they may differ somewhat from my fellow panelists, but I was encouraged today, as we were at lunch, and had a lunch meeting earlier before this, because we started talking about: do labor policies fit today's environment? What is happening in today's labor market? What's happening in restaurants, quite frankly, that we are starting to see? And we started to just hit on this one, right, when lunch ended.

And so, Jay, I would love the opportunity to contribute a policy paper to this, because I think there are several of us who are talking right as lunch ended up, what are the policies that fit today's environment?

If we are in a service-sector economy, the industrial economy is gone, and while I appreciate the point of view for a lot of folks who are here in the room, and so my fellow panelists, some of these policies fit an industrial economy, not a service sector economy.

The minimum wage, with all due respect, is a 1938 income support system for a non-portable workforce who worked in manufacturing and agriculture. If you look at our workforce, we have a guy who drives Uber during the day and works in restaurants at night. They have no desire to spend their entire career in an entire industry. Who they work, how they work, where they work, it's all fundamentally different. Those are who our employees are.

And a gentleman earlier mentioned the new McKinsey study, if you haven't read it, I certainly would suggest that you do. It very much touches on some of these policies but it talks about the change of the workforce, and what's happening in the age of automation.

And actually the gentleman who just walked in, he mentioned the McKinsey study earlier today at lunch, I did read the study you and I did not get a chance to talk about that, but the pace of change that's coming is real. We are seeing it in our industry, we are talking about job training, we are talking about, what we do to prepare people for tomorrow, not just our jobs of today.

We do have labor shortages, and we started talking about, how do we update labor policies for today's societal needs? How do we talk about the service-sector economy and not the one that's past?

So, I would love the opportunity to further explore that with some of my fellow panelists who are going to be here later, because we believe America's restaurants, that's the conversation we are having, that's the conversation we want to have, and that's why we are here to participate in this panel today, and I appreciate the thoughtfulness behind it.

If you think of who works in the restaurant, we are proud of our industry. Our employees are proud to serve the folks that they work for, and we are proud to be part of the conversation, but we are proud even more importantly, to be the face of the service sector economy that's leading today's workforce. So, that’s why we are here.

MR. SHAMBAUGH: Great! Okay. Thank you.

MS. SIMPSON: Short answer.

MR. SHAMBAUGH: I've gotten a lot more note cards than I'm going to be able to ask to our panelists, especially, because I had some also, but flipping through quickly, there are some commonality here, that I'd like to kind of toss to the whole panel, to some extent, but Alan, maybe, starting with you, but on this same question for everyone. One of the things that comes up a lot, and Heidi you mentioned this, it is a question of state, versus local, versus federal policy here.

And both on the questions of: what can be enforced, and what could be passed. And so, Alan, you mentioned a little bit of action that's taking place at the federal level, and then some at the state, and I'm wondering if you could say a little bit about, on some of the issues you raised, how you see where the action needs to be, and does it need to be at one level or the other, could it be whoever wants to move. And so maybe you could just start here?

MR. KRUEGER: Sure. So, labor law, you know, has a complex history, and the employment-at-will system is a state common law system. We also have federal standards, and I think if you look at the federal law and labor law, point to the Civil Rights Act which had a major beneficial effect, even though it was fought in many, many quarters.

So, I think this is an area where you can see action on many different fronts. I highlighted before the role of the Justice Department and the courts. I think the guidance that DOJ and FTC issued in October of 2016 was exactly right on, and I'd like to see them vigilantly pursue that, and I hope that they are. Other actions can take place at the state level, or at the federal level.

So, I don't think it's either -- I don't think it's either or. I felt for a long time that the minimum wage, the system that we've had, which actually didn't apply to agriculture initially, so in that sense that it's not right that it's so -- that the system is that antiquated. We have a Federal floor, and then the states and cities can go above it. And you could argue: why don't we just have states and cities? Well, there's some competition across the regions, and we want to be kind of a national labor market.

But I've always thought that you got to get the balance right, and that if federal minimum wage goes up too high that could create more problems than it solves.

President Trump proposed $10 an hour minimum wage during the campaign; I don't recall him saying anything about that since he actually came to office.

So, that's an area where I think having a combination of a federal level, and then the states can go above it if it makes sense in their area; if that makes sense.

MR. SHAMBAUGH: Great! Heidi, I'm curious. So, you mentioned some of the things you thought could be done state versus federal, and how important is it to get that mix right then, on some of the policies you are talking about?

MS. SHIERHOLZ: So, because of this -- there's such extensive erosion that we've seen, it seems to me that in many of these cases would be great to have a federal standard, and then in states go higher, but in the case where we are not going to get movement at the federal level, states should just go, that we can start getting people covered, or continue getting people covered under things that can happen at the state level, because the politics work.

And it can lead to momentum that could eventually lead -- hopefully, will eventually lead to changes at the federal level. Of the things that I talked about, everything can happen at the state level except for there's -- it's hard to do anything to ban mandatory arbitration at the state level because the Federal Arbitration Act preempts state level action on that, and that is how it has been interpreted.

And the National Labor Relations Act can't -- it is unlike the Fair Labor Standards Act, for example, which sets a floor, but states can be more protective of workers, the National Labor Relations Act sets both for the floor and a ceiling, so states can't actually move there. But other than those two things, we can get action across the board, and I think that's just really, really important to just move.

MR. SHAMBAUGH: Bill, I just want to flip it in the other direction, which is, based on some of the things you were saying just before, how problematic though is it if we start to see the states move in wildly divergent directions, right? If you have different labor -- you know, really, really just different labor markets where, you know, non-competes are banned entirely in some, and used in widespread ways and others, or minimum wages that are radically different, or as you've mentioned, you know, rules about the likelihood of unions forming being radically different, things like this. How do you see that if you start to split things that way?

MR. SPRIGGS: So, I mean it's good for the workers for a small amount of time, as we have seen with Right to Work, eventually it erodes the ability of unions, period; so, now Michigan, a state which one would have never imagined to be a Right to Work, is a right-to-work state, so it just isn't sustainable.

We have a unified system, so eventually you get a race to the bottom. The point of innovation is a hope that we will learn from that innovation, and then we would copy it. And so we would see a state like California and Connecticut who have tried to implement paid family leave that, we would see other states say: Oh, look, it works, we have evidence it works, it's a good thing, so let's now do this on a bigger scale.

Unfortunately, we haven't seen the push to the top. The moment of crises in the Great Depression meant that lessons we learn from unemployment insurance, from workers' comp, from states trying to do some sort of old-age benefit. We saw those experiments then become national, the problem with this Great Recession is none of the experiments that states had done to push us up got implemented, the one exception was unemployment insurance where we did push states up, and now we've seen states have rapidly raced to the bottom.

So, that's an example where there is a need for these national standards, because we can see how quickly the unemployment insurance improvements eroded at states raced as fast as they could to the bottom.

MR. SHAMBAUGH: Great! And, Cicely, I'm curious, kind of on the flip side of that.

MS. SIMPSON: Sure.

MR. SHAMBAUGH: From the employer side of: if the labor laws do really fracture in some sense, right, you've also then got all these national restaurant chains, for example, things like that, where -- how does that present challenges for firms who are trying to have uniform policies but then are facing a fairly patchwork nature of labor laws?

MS. SIMPSON: Sure. So we hear from restaurateurs, we hear from employees, and I think you hit the nail on the head, Alan, it's a balanced approach, that's what we are hearing; $15 in New York City is not what fits Nashville, and it's not what fits Arizona. You do have to take into account the regionalization; the diversity of economy, the diversity of certainly the area you are talking about, the region, the economics there that are happening.

That all needs to go into the conversation of what the law should be, that's what we are hearing from our members and our employees. It's just a very different conversation depending on what part of the country you are in, and depending on where you are. And if you are an employer who's in a multi-jurisdiction operator, if you're in multi-states, or if you're in different areas, that becomes a real challenge because a one-size-fits-all approach doesn't work really well.

And so those are the conversations we are having is: what is a balanced approach to the conversation that takes those regionalities into effect at the state and local level, probably as opposed to Washington, but even in Washington as well?

Have you had those kinds of conversations with 90 percent small business? Also, some restaurant chains, but who come at this very differently depending on where they are located and how they operate.

MR. SHAMBAUGH: Great! Thanks. So, putting through -- Again, these are great questions. Thank you very much. There's another theme that that pops up here is, people are thinking about the ways in which the economy is different today, or at least is potentially changing over time, whether it's through automation, or things with technology, and AI, and things like this.

And so I'm curious, first to Alan and Heidi in a sense, in terms of your proposals how you see this. As the economy is evolving, how do you see that changing the types of proposals that you have in mind? And do they, in some sense, mean we need them more? Or, would they need to evolve over time as well?

MR. KRUEGER: I think my proposals are timeless (laughter) so, you know, who is in favor of lack of competition, unless you happen to, you know, be winning that competition and want to elbow out competitors. From the standpoint of the economy, I think, you know, antitrust policy has made sense for centuries.

The same with non-compete agreements no-poaching agreements, which are even really hard to justify within franchises because there, you're not losing the training that you provided to the company, it's just going to someone else in the company. So, you know, if you really support your workers you'd want to take advantage of that that capital rather than kind of exploit it.

But I think that the proposals that Eric and

I emphasize make more sense, given the changes that have taken place in the labor market today, given the rise of superstar firms, given the increase in concentration in markets, given the weakness of workers for alternatives, that only 7 percent of private sector workers are unionized, then it makes sense, I think, to have more of an effort to equal the playing field in terms of competition, and in terms of allowing a more equal, a more fair competition which those other institutions have supported.

MR. SHAMBAUGH: Yes, Heidi.

MS. SHIERHOLZ: The other thing that I would add to that is that the fissuring of the workplace matters to many of the things that I talked about, and so we have -- and you know, you used to walk into a hotel and you knew exactly that all the workers work for the name that's on the marquee of that hotel. And now there's contracting and subcontracting out of workers who are doing services that aren't directly related to the core competency of that hotel.

And so that means that some things are on this list that wouldn't be there if we -- or wouldn't be as prominent if that weren't happening, so one of the things that fissuring of the labor market means we have to really focus on, sorry, is misclassification. It's led to a big increase in workers being identified as classified as independent contractors when they really should be on payroll, so things like paycheck transparency, a thing that you brought up about having W-2 status be the default status.

Those kinds of things are really important; it makes joint-employer standards way more important. Yes, so those kinds of things, I think that's the other thing that we've really seen evolve in the labor market since the '80s that means we have to get standards in place that will help deal with it.

MR. SHAMBAUGH: So, Bill, along the same lines of, in a world with different technology, and automation, and things like this, do you think it changes the role that the unions are playing, or should be playing in the economy?

MR. SPRIGGS: Unions are vital to the

technological change. When you look at the auto industry which already did its automation, you see how the unions were the partner in making that happen, and making that happen in a way that could be negotiated, so that what the unions were able to do was to say okay we know this is going to happen, there are going to be some redundancies, they could negotiate how those redundancies would be resolved as the company change, and they could make sure that there was going to be a pool of money to train the workers for the transition. That already took place.

So, you know, when you look at the length of this from the mid-'70s to the mid-'90s you see the same number of people had auto jobs, which means the share of people in the auto industry were shrinking dramatically. So that technology already reduced their share of the employment, it didn't reduce employment because the unions got to negotiate about that.

So it's a necessary tool. People need to remember that there's a general equilibrium problem here that Walter Reuther raised when people talked to him about this whole process. When they said to Walter Reuther, I bet you don't like those robots because they don't pay union dues. He says, no, I don't like the robots because they don't buy cars. (Laughter)

So, you can automate all you want, but robots don't buy -- they don't go to restaurants, so you have to remember, if workers don't get raises with that productivity increase, which is what the auto workers negotiated, and if you don't figure out what's the transition for the workers, having unions at the table made that go smoothly.

Now, we've had a similar transition in the Federal workforce, there are virtually no office assistants left in the Federal workforce. I mean maybe if you are an assistant secretary, or the secretary you have, some administrative support, but nobody else has administrative support anymore.

We did away with that, we did it within a set of rules, and while FG can't negotiate like a private sector union, it didn't mean that the workers who were represented, and how would we deal with the redundancy, how would we have training for people to take on other tasks. So, you need a partner to make that happen, if you do it willy-nilly, you're going to run into lots of these, generally, equilibrium problems.

You know, a delivery truck, if people would rob a delivery driver, do you think they are going to have any compulsion about a robot, come on, (laughter). So, you have to think through these things, you have to have some other humans at the table.

MR. SHAMBAUGH: Okay. Great! So, I got flashed the five-minute sign more than a couple minutes ago, and so with that in mind, I want to just work down the panel, in this direction, just for a really quick answer. In some sense many of the questions here asked, what's the one thing you want to do?

And so, since people have already said what they'd like to do, instead what I'd like to just ask is: if you could -- say, there's one thing you actually think could get done in the near future, not necessarily a policy change, it could be a change by how businesses are operating, or a policy change that would help lift wage growth, in particular for, in some sense, a typical worker? Is there something that jumps to mind?

MS. SIMPSON: Yeah. For us that one thing, it will be very short, is the 800,000 jobs that are open in the restaurant industry right now, and the labor demand, and the problems in labor demand that you are seeing. I think we started the conversation earlier today and would love to continue that about what that means, and how that is the changing face of work, how that does affect labor demand, how it affects wages, that's the conversation and things we'd like to change for the conversation we'd welcome to have.

MR. SHAMBAUGH: Great! Alan?

MR. KRUEGER: It's not only a matter of jobs being open it's a matter of what they're paying. And we've seen employers resist raising wages, partly they got spoiled because the recession was so deep and they had a lot of applicants. I'd like to see the companies flourish, I think they'll flourish more if the economy overall flourishes as well.

I think if the Justice Department pursues some criminal actions on the wage-fixing cases on the no-poaching cases, which it's been dropping hints that it's going to do, I think that will send a very quick signal.

McDonald's has already dropped its no-poaching agreement, they haven't explained why. I suspect it was because Carl's Jr. got sued, and they saw that this is a practice which is at risk. I think company -- HR offices will be very concerned about the practices that they've been using, explicitly or implicitly, to restrain wage growth, and I think that will lead, in the short run, to a more rapid wage growth.

MR. SHAMBAUGH: Okay. Heidi?

MS. SHIERHOLZ: In my set of things there's not going to be any action soon on the federal level. We will and are seeing things at the State level, I think the biggest wins that have happened, and that will likely continue to happen, are on the minimum wage, on raising state overtime thresholds, and on state and local scheduling laws. So there's lots of optimism there.

Also, something I didn't talk about, but you mentioned, is we are all seeing a lot of good action at the state level on paid leave laws. So, it's another piece of that, yeah.

MR. SHAMBAUGH: Bill?

MR. SPRIGGS: Well, I think Heidi raised some things early on; people think the decline in unionization is because of shifts in the industrial structure. That's not true, union density has dropped in manufacturing, it has dropped in other sectors where density had been higher. So, this is not about shifting industries.

Canada, which has experienced similar

changes, has kept its union density mostly because, even though they started off with the same basic law, it was very much like our Wagner Act. They updated it in the ways in which Heidi mentioned. It increased penalties for unfair labor practices, it assured that your first contract would be mediated so you actually get a first contract, they do not have right-to-work laws in Canada, so that you can't free ride a union. You can free ride unions, but there's nowhere else in the United States that we agree that you get something for free. No one else agrees to that.

So, this share of unionization is not inevitable, we have simply, allowed the rules to erode the ability of American workers, compared to Canadian workers, to stay in unions. And you see, the level of inequality in the United States gave us a housing crisis which Canada did not have.

MR. SHAMBAUGH: All right, I think we'll probably not jump into the entire housing crisis; it's a good point for us to stop. I want to signal to our audience that we are going to do a very rapid change up here at the top, so we are not taking a break right here.

And so we are going to next hear a panel talking about a different side of this problem, which we've hinted at once or twice here, a question of: demand for workers and the overall state of the economy from a macro policy perspective. And so we are going to do a very quick change and welcome our panelists up, and these panelists off.

So, thanks very much to our panelists, for this first part. (Applause)

(Recess)

MS. MUI: Thank you, everybody, for sticking around for the second panel. Thank you, as well, to the Hamilton Project and the Brookings Institution for hosting this discussion, and obviously to the Council on Foreign Relations for this space. I am Ylan Mui of CNBC and I am here with Neel Kashkari, president of the Federal Reserve Bank of Minneapolis; and also with Jared Bernstein, a senior fellow at the Center for Budget and Policy Priorities.

And the theme of this discussion is can we boost wages with monetary and fiscal policy? Hoping our panelists will say that the answer is yes, because otherwise, what's the point of Washington? (Laughter) And for our audience, we also want to remind you that you do have notecards. If you want to ask a question just write it down and we'll be having some time at the end to have your questions answered by our panelists.

So, Jared, I would like to start with you because you have a paper out that looks at four proposals for both fiscal and monetary policy ways that they can directly boost wage growth. What are they?

MR. BERNSTEIN: Well, first of all let me just say that it's great to here with you, Ylan, who I've known for a long time, and I'm a huge admirer of Neel, so great to share the stage with him, as well. And thank you so much to Hamilton Project, Jay, Becca, everyone else; Ryan, extremely helpful in producing one of the chapters of the book as my paper.

So, gee, is Washington worth it? Now that's a tough question. (Laughter) But yes, my paper starts from the premise that, in fact, fiscal and monetary policy very much can be used to improve the wage story as Jay outlined it, the stagnation problem. And I start from the premise based on a set of facts that are readily available, that there has been a lot more slack in the job market than most people might recognize over the past 30 or 40 years. In fact, by standard measures, and we can argue about whether they're right or not, but I'm sure they're ballpark, the U.S. economy has been at full employment only about 30 percent of the time since 1980. And so that means that he rest of the time there's been too much slack in the job market. So, one, slack exists.

Two, the impact of slack in the job market is not distributionally neutral. It's particularly damaging to workers in the bottom half or even two-thirds of the pay scale. And I have, again, evidence in the chapter that makes that case.

And then finally, just responding to the core part of your question, is that, yes, we can utilize fiscal policy and monetary policy, I also speak about trade policy, to push back on this problem of job market slack to boost demand, so workers have more bargaining clout. Of course, in the last panel I think that word "bargaining power" came up a lot. Well, workers have a lot more bargaining power when the job market is tight enough that employers have to compete -- and Alan's work is relevant in this regard, as well, of course -- but that employers have to compete, have to bid wages up to get and keep the workers they need.

I can say more about what those policies are. I think when it comes to monetary policy we have somebody here who actually does that as his day job. I will say that what I focus on there is something that many monetary economists now are talking about more frequently, which is the idea of changing the inflation targeting regime to be more in sync with, I would argue, how the macroeconomy really works. That is the notion that unemployment and inflation are inversely correlated, or what economists think of as a Phillips curve, has been a very tough notion to defend with data for quite a long time now. And yet, it's still kind of the core workhorse of the way many monetary economists think about the economy. So I think that needs a major rethink.

I'm somewhat confident in say that because I'm not alone. There's agreement from people like Ben Bernanke and other stalwart monetary economists. Even Janet Yellen before she left the chair was saying perhaps inflation dynamics work differently than we think. So I suggest a couple of ideas that we can get into and Neel will be more equipped to speak to them, as well.

On the fiscal policy side, and I'll stop here with my initial comments, I think one of the most important things we can do is have some sort of direct job creation program. That is even as we close in on full employment there are pockets of the country, some pockets that are actually not just rural -- we're not just talking about rural America. There are pockets not too far from where we sit right now where folks aren't reached even by low unemployment rates. And I am convinced, and I've worked in this area of full employment for many decades now, that we will not achieve truly full employment without some sort of subsidized job program. And I argue that that exists -- that policy option exists on a continuum from subsidizing employers to direct job creation by the public sector.

I also suggest a financing mechanism in my paper called a Full Employment Fund, which is an ongoing set of resources that the federal government maintains so that resources can flow to those areas when needed and it can scale up and scale down along with the cycle.

Final comment, just because it involves Bob Rubin, who we wouldn't be here were it not for Bob because he's behind the Hamilton Project. So, you know, if you look back at the *New York Times* op-ed, I don't know, three or four months ago, there's an op-ed saying, you know, maybe we should do a subsidized job program. I think it's probably an important part of the American social policy that's missing, the economic policy, and that was by Bob.

And so, you know, Bob is a very established Democrat figure. He's not somebody who's coming at this from, you know, the far-out part of the distribution there. So I think that Bob's support of that is actually, I think, a very important political sign that this idea maybe has more legs than you might thing.

MS. MUI: Jared, one of the reasons why you suggest in your paper that the Fed should consider a different framework is because inflation has been so low and the Fed has had trouble reaching its 2 percent target.

President Kashkari, you were a voting member of the Fed's Open Market Committee last year. You dissented three times over exactly some of these concerns. Explain your rationale and whether that's changing in light of recent data.

MR. KASHKARI: Well, first of all, thanks, Ylan, for having me. And Bob and Jay and others, thanks for organizing this.

I dissented because I didn't see evidence that we were achieving our inflation target. So for five or six or even longer years, the Fed keeps saying inflation's around the corner, inflation's around the corner, and yet it hasn't emerged. And so I looked at that record and said, well, maybe this time is different or maybe we're repeating the same mistake again.

And when I look at -- ultimately, we're trying to assess slack in the labor market. And if you're trying to assess supply and demand in a market, start by looking at the price, and the price of labor is wages, wage growth. And wage growth has not been growing very quickly over the last five or six years. Unemployment rate falling from 10 percent at the peak of the Great Recession to 4.1 percent, we would have thought that that would have led to a lot more wage growth, but it hasn't. That told me there's probably still some slack in the labor market. And that's why

I said, well, let's just wait. Let's allow the inflation to come to us, reveal itself. We have time to react to it.

You know, the Fed has very powerful tools to lower inflation or to keep inflation expectations anchored. We can always raise rates. We have very limited tools to boost inflation expectations and to boost on the other side. So because of the asymmetry of our tools and our symmetric inflation target, it seemed pretty clear to me that we should allow the wage growth to build, the inflation to build, and then we can respond. And we would respond.

MS. MUI: So newly minted Fed Chairman Jay Powell said yesterday that he does expect wage growth to pick up and to run at a faster pace. Does that mean you're ready to hike in March?

MR. KASHKARI: Well, first of all, I don't like to make predictions personally because, you know, when the Board of Governors is fully staffed there are 7 governors and there are 12 Federal Reserve Bank presidents. If you have 19 people out there make random predictions about how many hikes, it leads to a lot of noise. And so I generally try to avoid that.

To me, I want to see wage growth continue to build. I want to see inflation move towards our 2 percent target. I want to see more evidence that the slack in the labor market is being used up. Those are going to be the key factors that I pay attention to in making my recommendation.

You know, if we look at the headline unemployment rate is 4.1 percent, which is quite low by historical standards. But that number basically broke as a useful measure in the Great Recession because so many Americans left the job market, so they're not captured in that 4.1 percent number. So a number that I pay more attention to is prime age labor force participation. How many workers between age 25 and 55 consider themselves in the job market, either they're looking for a job or they have a job? We still have not recovered to where we were before the Great Recession. There's still, just on that measure, roughly a million Americans who, in theory, should be available to work who are not in the labor force today. And if you look at Europe and you look at Canada and you look at Japan, their labor markets have recovered to where they were before the Great Recession. And so I don’t know why we have not yet recovered, but that tells me there may well still be more slack.

Now, other factors play. I agree, this is a complicated topic, but I want to see the wage growth.

MS. MUI: I guess this kind of gets to the broader point, though, which is we heard from the previous panel that there are myriad policies, regulations that could be holding back wage growth. Why should monetary policy be the tool that is used to target this problem? Is it too blunt of an instrument?

MR. KASHKARI: Well, I know Jared has a lot of good ideas in his paper, which we’ll turn to. One of my observations of the past couple years is that, and Jared talks about this in his paper, we don’t know where the natural rate of unemployment is. We really don't. We don't know what the output gap is. Right now some economists think the U.S. economy is running above potential, it's running hot. We don't know. I mean, we have to make estimates about this.

And so, in the last couple years, we've seen such strong job creation, far beyond our expectations. That is a really good thing and maybe that can continue. And so my reaction is a tight labor market is sending this price signal through the labor market to private sector businesses who are now bringing workers back in that previously they had not considered, meaning people with a criminal background, people how have had some substance abuse problems, people who may not have the training that they need. Businesses today are saying you know what? I'll give you a chance, I will train you.

That's the power that I see of a tight labor market. It can't do everything, but I do think we should allow this to continue to run.

MR. BERNSTEIN: So let me weigh in on some of those points because I just want to amplify them, almost every one of them. Starting with this notion that if we don't know -- and we don't. By the way, Neil Irwin has a great piece in the *New York Times* on this point today about economists not knowing what the natural rate of unemployment is, that is the lowest rate consistent with stable inflation.

So if we don't know, we're kind of operating like this glass of water. I think that's a useful imagery in this case, where some people will tell you that the water's filled to the top and any more water will just lead to spillage, which in this analogy is inflation or higher interest rates; and others, particularly if you consider the employment ratio that we were just discussing, think that, no, there's still a little bit of room in that glass, so there's a bit more room to run, a little more room to pour.

And I think the idea that the Fed or that monetary policy is a blunt instrument, it's certainly not the only instrument, for one. So one thing, we just had a whole panel on that, we'll have another panel after this, so there are many more instruments.

But I think of the instrument very much as Neel just described it, which is it's not so much about the kind -- it's not about fiscal policy. It's not about direct job creation. It's not about the direct wage interventions that Heidi was talking about. It's not about union formation. It's really about allowing that glass of water to get full. It's not about hitting the brakes when there's still some room to cover out there.

And so, in a sense, it's an instrument that if applied incorrectly can prevent us from getting to where we need to go. And in that sense, it's a very powerful instrument.

MS. MUI: Picking up on the glass of water analogy, are policymakers too afraid of spilling the water? In other words, you know, we hear a lot from the Fed about the Fed will never go over really 2, 2.5 percent inflation because they're so worried that if inflation gets too high, then they'll have to raise rates so fast that it could actually cause more harm than good. Is the same thing true in the labor market where if we go too far below whatever that natural rate of unemployment might be, the economy will overheat so much that the Fed will end up doing more harm than good? How dangerous is the spillage?

MR. BERNSTEIN: Well, I think this -- I think Neel should be the one to mostly address that because he's sitting in a chair that has to struggle with that. I will say as someone who looks at these things very closely from the outside and throws the occasional spitball and gives the occasional hug, so both, I would say that certainly there are those who are -- that doesn't speak with one voice, it's not monolithic, but there are certainly those who are clearly too worried about overheating. And they're the ones who think they know what the natural rate and they think it might have been 6 or maybe 5-1/2. Whatever they think it is, they're wrong because they don't know.

I mean, even Jay Powell yesterday said it's in a range of something like 3-1/2 to something maybe north of 5. And if you read Alan Blinder this morning, who's a former vice chair of the Fed, he was saying, oh, I don't know, maybe between 2-1/2 and 7. And he said, which is saying the same as it's useless, we don't know. (Laughter)

And so --

SPEAKER: At CA we estimate it very precisely at somewhere between -2 and 10. (Laughter)

MR. BERNSTEIN: Right. Negative 2 sounds like slavery, so just be careful there, but, yes, I take your point. Yeah. And by the way, their chart, Jason, *et al.*'s chart, is in my chapter on this very point, so I poached -- talk about poaching -- I poached from them.

I think the thing that you want to be concerned about in this space is what they call de-anchored inflationary pressures, and that's the idea that people come to expect faster inflation. But let me stop there and kick it to Neel because I'd be interested in his take.

MR. KASHKARI: Well, you know, one of the first things I did when I joined the Minneapolis Fed two years ago is I went back through all of the economic cycles from the '60s on with my staff, looking at monetary policy, looking at what's happened in the real economy, what data were policymakers making decisions on, what led to these different outcomes. And my read of it is the unanchoring of inflation expectations in the '60s and '70s that everybody's worried about was really about political independence of the Fed. And it was about the fact that when inflation was high, instead of raising rates to bottle it up, the Central Bank cut rates to satisfy their political comrades. And that over a course of several years of that repeated bad policy led to an unanchoring of inflation expectations.

I have 100 percent confidence in Chairman Powell and every member of the FOMC that they are totally committed to Central Bank independence and totally committed to the dual mandate that Congress has given us. So I'm not worried about a repeat of the '70s because we will never let it happen. So I'm not worried about all of sudden we wake up and inflation expectations are back where they were in 1975. I just don't think that that's a -- it's a not zero possibility, but it's as close to zero as policymakers can ever achieve.

MS. MUI: But I guess what I'm saying is assuming that inflation remains relatively low and stable, you're saying the Fed should continue to push the unemployment rate as low as it can possibly go to sort of test the boundary of where --

MR. KASHKARI: I mean, I'm not say -- we have a symmetric 2 percent target, so right now, the way I define it, this is as close to a policy free lunch as there is. So we have a symmetric 2 percent target. We've been coming up short of our target for six or eight years. We say it's symmetric, so if we've been at 1-1/2 for the past 5 years, we should, in theory, be comfortable letting it go to 2-1/2 for the next 5 years.

And so if we allow people to continue to enter the job market, we allow wage growth to grow. By the way, the linkage from a tight labor market to wage growth is one linkage, which is imperfect. And then from wage growth to inflation is another linkage, which is also imperfect. So we've got two big bridges we need to cross before we get from a tight labor market to actual inflation. And we have a lot we don't know.

MS. MUI: So should the Fed wait for wage growth? And if so, what's the right number? What's our wage growth target?

MR. KASHKARI: Well, now we're getting into very details of the current policy environment, which I --

MR. BERNSTEIN: Well, wait, let me intervene.

MR. KASHKARI: Please, thank you.

(Laughter)

MS. MUI: Jared will save you.

MR. BERNSTEIN: I don't want to lose the thread, especially with a Fed president on the stage, it's easy to focus on current events, and we should, but I don't want to lose the thread. You know, Neel's talking about the importance of tight labor markets and I agree that the bridge between unemployment and wages has some holes in it. But I actually think, and I've run these numbers, I've done some statistical analysis, that bridge actually has less holes in it than the bridge between wage growth and price growth.

So we've seen, even though wage growth is growing slower than I'd expect at low unemployment, it is starting to respond. And there are really important nonlinearities out there, meaning when you go from 6-1/2 to 6 on the unemployment rate you don't see much action on wages. If we go from 4 percent to 3-1/2 percent this year, which I think we might, in part due to some fiscal stimulus that definitely has some recklessness embedded in it, but be that as it may, I think we're going to see the kind of tight labor market, and here's the point I wanted to get to, the kind of tight labor market that we haven't see enough of in the past 30 or 40 years.

I'm not arguing, and I'm quite clear about this in the very introduction to my chapter, that the main or the only reason why we've had all this wage stagnation is because the job market has been slack more than half the time, but I do know that it's part of the explanation. So this is not just a what's going to be happen next month, what's going to happen next quarter? I'm arguing for the Federal Reserve to embrace an inflation targeting regime that accounts for the fact that the job market has been slack for most of the past three of four decades.

MS. MUI: How do you shift to that kind of regime? I mean, it took I believe decades of debate before the Fed even adopted a 2 percent inflation target. How long a horizon are you looking at? And what are the practical challenges to moving to a new framework?

MR. BERNSTEIN: Well, there was a session at the Brookings Institution a few weeks ago where a bunch of macroeconomists, really monetary types, including Bernanke participated and some central bankers from other countries, as well, were wrestling with this question. And I think there was somewhat of a consensus that there needs to be a process wherein the Fed says over the next 6 to 12 months or so -- and I actually talk about this in my chapter and I suggest ways in which we could do this, that answer Ylan's question -- that over the next 6 to 12 months we engage in a process wherein we invite in experts and use our own expertise, which is very deep at the Federal Reserve, to figure out -- you know, to think about what would be the best way to move from the current regime to a regime that was more reflective of the kind of macroeconomic policies that Neel and I are talking about and the type that I write about in the book?

And so I suggest what's most important are really two things. One is that the process has a transparency and buy-in. And one way to do that is to not have a process that is structured to change the Federal Reserve's goals. Its fundamental mandate, the dual mandate, going into this process should be established as the mandate coming out of the process. So it's not a process designed to change the Fed's goals. It’s a process to change the Fed’s tools to enact those goals. And that I believe the Fed can do without legislation, by the way, so you want to sort of keep Congress not intervening too deeply in that side of the thing.

And then I think it’s really important not just to have economic elites at the table. This kind of representation -- and here my message is a little different than those people who were the Brookings event. I don’t think it should just be economic elites and Fed staff who does this or the kind of processors that we have here at the meeting today. I think it should also be representatives and advocates of low-wage workers and unions and folks who are really affected so fundamentally by these policies.

MS. MUI: I want to turn a little bit to the role and the potential for fiscal policy. And President Kashkari, you can put on your former Treasury official hat for this one perhaps. But in Jared’s paper he says that the traditional tools that Republicans reach for to boost wages, increase growth are tax cuts. The Democrats look to infrastructure spending as the primary mechanism. But those solutions aren't good enough. Why is that not enough?

MR. KASHKARI: Well, these are -- you know, when I was trying to -- sorry to bring you back to (inaudible) for just a second, I was trying to estimate with my staff what would a fiscal package have cost to achieve the job growth that we've seen over the past few years? And there are a wide range of estimates on it, everything from Cash for Clunkers, which was $1.4 million per job created, to something like $50,000 per job created with a median of around $200,000 per job; just a survey of different fiscal programs in recent history.

And our back-of-the-envelope math said that the job creation over the past couple years would have cost around a trillion dollars, ballpark it, if there was a fiscal package you were trying to put together. So one of the challenges for any fiscal policy program is to be at the scale to move the needle in the U.S. economy you're talking about a huge amount of money.

And that’s why I do think monetary policy has a role to play to get the overall economy strong, a tight labor market, and then you could probably bring some different fiscal ideas around the margins of that overall health economy. That’s how I would look at it.

MS. MUI: We got a $1.5 trillion tax cut. That’s more than a trillion for the Fed’s program, yeah.

MR. BERNSTEIN: You know, I think that’s the right way to look at it. I think that that calculus changes when you’re in a recession, and there your fiscal policy has to ramp up significantly. I have a soft spot for Cash for Clunkers, so I won’t debate that with you right now.

MR. KASHKARI: That wasn’t my number. I’m just reporting.

MR. BERNSTEIN: But anyway, I remember early meetings, maybe Jason does, too, where that came up. At any rate, so I actually can put a number on this. So in the chapter I argue for something called a Full

Employment Fund, which is a mandatory pot of resources that -- “mandatory” meaning it’s not discretionary; meaning that it’s there to be used, to ramp up. Discretionary is the stuff that we’re fighting about all the time in Washington. This is the appropriations that they argue about and vote about and never seem to -- you know, there’s the last-minute are we going to have a government shutdown? That’s all the stuff that you have to appropriate yearly. The mandatory is more on automatic.

So I think this needs to be mandatory because automatic is so key when you’re talking about responding to negative kinds of demand shocks or even the kind of geographical disparities I mentioned earlier. So I think a subsidized employment program that was funded by a Full Employment Fund; I said 10 billion in the chapter as a good amount to sort of start with.

Well, interestingly, there’s a plan that just came out after I finished my chapter by a guy named Indi Dutta-Gupta and a number of co-authors, four or five co-authors, I won't try to name them, and it's a really smart subsidized employment plan that shares a lot of what I was trying to think about, but they took it further with more details. And their thing was 16 billion a year, it sort of started there.

So I don't think we're talking about --

MR. KASHKARI: But I thought, I'm sorry, I thought in your plan you had -- the second part or the third part of your plan was $600 billion.

MR. BERNSTEIN: So, okay, yeah. (Laughter)

MS. MUI: The hidden 600 billion.

MR. BERNSTEIN: They didn't mention that. No, and I think I said this, there's a continuum from subsidies. (Laughter)

MS. MUI: You start with the 10, you end up with 6, right.

MR. BERNSTEIN: So the subsidized employment plan is at one end of the continuum and that is far less resource-intensive than them much more aggressive one that I mentioned in the story. We're actually releasing a paper by Darity, Paul, and Hamilton on this in a couple of weeks, and their plan is very ambitious. And yes, that’s basically the price of another Defense Department, but that basically wipes out unemployment. So that’s a very ambitious plan.

MS. MUI: Well, let me take it back to the wage component in particular and ask, broadly speaking, can you guys describe what we are seeing, first of all, in terms of wage growth? I mean, from our previous discussions it sounds like wage growth has been uneven depending on both geographic area and income level. Some income levels may be seeing plenty of wage growth and others being left behind. And then what does that mean for how you design and target both fiscal and monetary policy if you can?

MR. KASHKARI: Well, you know, Alan in the prior panel touched on this. When I go around my region in the Federal Reserve System, the 9th District, Minnesota, North and South Dakota, Montana, et cetera, I always ask businesses, what are your challenges? And they’re always saying we can’t find workers. So the next question I always ask is, are you raising wages? Usually the answer is no. And then I say, well, you're just whining. Right? You want more of something, but you're not willing to pay for it. That's called whining.

And then sometimes they'll say, well, we've tried to raise wages, but we can't. We can't raise wages because we can't pass them on to our customers. That to me is an expression of anchored inflation expectations. If everybody thinks you can't pass them on, then nobody even tries.

In one conversation I had in Grand Forks, North Dakota, they have around 2-1/2 percent unemployment. And the businesses were just saying, no, there's just no workers, there are no workers. And I asked them, I said, when was it not like this? How many years back would we have to go when you could find workers? They said, oh, 2009 we could find workers. (Laughter)

So businesses' perspective, if we're crawling out of a Great Recession and there's tons of people available, that's a healthy job market from businesses' perspective. (Laughter) And so, you know, I think we need to let the market work and allow people to find jobs and allow wages to grow, and businesses are going to do what's in their own self interest and they're going to pay up when it makes sense. And I think we should let the process continue.

MR. BERNSTEIN: Yeah, I mean, I think there's lots of different wage series. I track all of them I think. One of the things I do is I take a composite of five different wage series and that fell from -- and this is without inflation, so nominal wage growth year over year, you know, that was growing at 4 or 5 percent before the Great Recession. It tanked all the way down to below 2 and then it sort of stabilized at 2 percent.

And then a couple of years ago, as the unemployment rate started really falling, it slowly climbed up to 2-1/2 percent and it may be ticking up 2.6, 2.7, something like that. But, you know, if you just run a simple model and say what should it be based on how tight the job market is, it would be higher than that.

So I think that broadly speaking, wages have kind of accelerated from around 2 to somewhere between 2-1/2 and 3. But what I'm calling a nonlinear effect is going to have to kick in if we're going to see the sort of wage pressures we ought to expect and would be evidence of a job market working the way it should.

MS. MUI: A question -- do you have another comment?

MR. KASHKARI: Well, just one thing. Jared mentioned the nonlinear effect. This is a big point of debate on when the unemployment rate gets low, is there some nonlinearity in the Phillips curve, some nonlinearity in the wage process? I think it's entirely unclear.

MS. MUI: We might see a spike. Are we going to see a spike?

MR. KASHKARI: Well, that's what people are worried about. And when I hear about these calls for let's consider a different monetary framework, I don't think these alternative monetary frameworks eliminate the fears of nonlinearities. So, for example, imagine if we had gone to a -- if we went to a price level target. And in a price level target, let's say a 2 percent per year price level target, we make up for past misses in inflation on the downside.

Well, if we're worried about nonlinearities in the Phillips curve or the unemployment rate getting too low or asset prices getting too high at 1-1/2 percent inflation, wait till we're at 2-1/2 percent inflation under one of these price level targets. I think the same arguments that are causing the committee to raise rates now are going to be just as true in one of these alternative frameworks that people are talking about.

So this is really complicated stuff, but you have to look at what's motivating us now and it's these fears of nonlinearity that are motivating us now, and I don't know how to eliminate those fears.

MR. BERNSTEIN: I mean, to me it's not a fear, it's a hope. (Laughter) The idea that we haven't seen the sort of wage growth that we should, and we've heard good explanations from the earlier panel, you know, the non-competes, the poaching, the depressed union power, and all that. I think they're very good reasons, but I do think fundamentally, and you got at this, Neel, I mean, I think basically employers have, A, forgotten how to raise pay in response to a tight job market and have been able to maintain profitability without doing that. And if you go to sort of the higher level of the corporate sector it's a signal to your shareholders that you're failing them if you raise labor costs. And that's one of the reasons why the labor share in the economy has really tanked while profitability has continued to go up.

Historically, tight labor markets have ameliorated those trends. And I am starting to see some of that now and I hope to see more of it if the job market tightens further.

MR. KASHKARI: But one other thing that I'm paying a lot of attention to, and, again, I'm just revealing to you there's a lot of uncertainty when we're looking at these various signals that we're getting, Japan has a very, very, very tight labor market. They have very low wage growth. They have low inflation expectations. And so one would think that given Japan's pretty efficient economy and a very tight labor market, that would be leading the way to wage growth and leading to inflation, and it's not. And is it because inflation expectations have unanchored to the downside? Maybe. I don't know. These are complicated issues that I think we have to pay attention to what we're learning around the world to see what it means for the U.S.

MS. MUI: Turning now to the robots, there's a questions from the audience that asks how do you guys incorporate thinking about technological advances as you think about what the level of full employment is going to be in the future and what that means for both fiscal and monetary policy?

MR. BERNSTEIN: You know, I don't worry that much about technological unemployment. I don't worry about the robots taking lots of people's jobs away, especially in the near term, and that's the only term that I think economists can even semi-reliably tell you much about.

If artificial intelligence or robotics or if the pace at which technological change was displacing workers, so if the pact at which technology in the workplace was displacing workers, if that was accelerating we'd have to see productivity accelerating, and we haven't seen that. We'd have to see less impressive monthly job numbers, which continue to be strong. The unemployment rate continues to be low.

So technological unemployment is something that may be out there in the fog and I can't see it. I don't think at this stage, at least in the work that I've been doing, I don't think it's any reason or any explanation why we can't achieve chockful, super-tight labor markets.

MS. MUI: We've gotten a couple questions about productivity growth, which has been abnormally low. Describe the role of productivity growth in holding back wage growth and perhaps in low inflation, as well.

MR. KASHKARI: Well, I mean, productivity growth is ultimately the source of our growing economic pie and how it ends up getting shared between labor and capital. So we need more productivity growth and productivity growth has been low. It's not just a U.S. phenomenon.

Some of these things tend to be global, so productivity growth tends to a global phenomenon. It's been low basically in all advanced economies. Inflation also tends to be a global phenomenon. It's been low in most advanced economies.

And so getting productivity to grow faster, that is squarely -- I mean, that's the real economy. It's not monetary policy; can't do that, but we need it. I mean, if we want wages to grow we do need to have productivity growth.

MS. MUI: What do you think the policy --

MR. BERNSTEIN: Can I ask Neel a question? Let me ask Neel a question.

MR. KASHKARI: Wait, what’s going on here?

MS. MUI: We’re ganging up. (Laughter)

MR. BERNSTEIN: So, you know, I hear what you’re saying and I get where you’re coming from. I’ve always wondered, I don’t think there’s a lot of evidence for this, there’s a little bit of evidence for this. There’s not as much evidence for this as I wish there were and one has to always be mindful of a confirmation bias, you know, seeing something that’s not there because you want it to be there.

And so I’m very cautious about this, but I’ve written about the theoretical existence of something called the “full employment productivity multiplier.” And that is the idea that at full employment firms have to behave in ways, including investments, that they can avoid when there’s a slack labor market. So there’s a lot of pressure in the job market and there’s pressure on wages. In order to maintain their profit margins firms have to invest, in capital perhaps, in order to maintain profitability while facing higher labor costs. That’s a result of a pressure from a high-pressure job market.

And so one can imagine a story where an economy that’s been at full employment only 30 percent of the time is an economy with relatively slack productivity growth because that FEPM -- full employment productivity multiplier -- isn’t in play. Do you think there’s anything to that?

MR. KASHKARI: Well, I mean, we do hear anecdotally, the prior panel, the woman representing the restaurant industry, that they say, well, if you raise wages a lot at the low end, you’re going to see people turn to more automation. I think that that’s an expression of the same story that you’re talking about, so it doesn’t sound crazy.

MR. BERNSTEIN: Thank you. (Laughter) I’ll take it.

MS. MUI: But, Jared, quickly, what can fiscal policy do? What should fiscal policy be doing to improve productivity?

MR. BERNSTEIN: Oh, I think that’s pretty straightforward: investment in physical and human capital. I mean, I think the CBO, of course, sort of disagrees with me here and they know of what they speak. But I think that the productivity impacts of infrastructure investment, especially if you look at some of our deteriorating public capital, would be notable. The CBO doesn't say they're zero. It says they're really quite small. I think they might be bigger than that.

And then, of course, for the longer term, investments in human capital, I mean, we're one of the only countries that doesn't invest in little kids in terms of, say, quality preschool for those who can't afford it. Boy, that is really leaving, I think, serious productivity advantages that would be 30 years hence on the table.

MS. MUI: President Kashkari, I'm going to end with you here with a question from the audience, so you can blame them, which is asking that Janet Yellen was someone who was very focused on the labor markets as Fed chair; Jay Powell perhaps less so. It's said that the Fed has limited tools to combat distribution inequality. Do you think that Fed leadership now has shifted focus?

MR. KASHKARI: No, I don’t think so. At the Minneapolis Fed last year we launched a major new research initiative called the Opportunity Inclusive Growth Institute, trying to understand some of the structural factors behind these disparate labor market outcomes. Larry Katz is on our board of advisors, among many others. And both Janet Yellen and Jay Powell were both very supportive of us doing that. And so I think that -- I think Jay’s very interested in these issues, but I also think he’s got a big job as chairman of the Fed and needs to focus on what we’re going to do with the path of interest rates.

MS. MUI: That means four times this year, right? (Laughter) All right. President Kashkari, Jared Bernstein, thank you so much. Appreciate it.

MR. KASHKARI: Thank you.

MR. BERNSTEIN: Thank you.

(Recess)

MR. ALTMAN: Everybody we're going to

convene now. Our third and final panel. If I could ask you to take your seats and come on back in for those of you who are just outside. I'm Roger Altman and I have the pleasure of moderating this panel. We're blessed with a really great group of panelists.

I'm going to start to my immediate left with Abby Wozniak. Abby, your really, really great paper talks about, if I properly summarize it, the intersection of geography and education and labor market implications of that intersection. And the degree to which geography plays a big role in education access and the degree to which that role is having a negative effect on lifetime earnings. One of the things that really struck me about your paper is the degree to which young people increasingly access post-secondary education locally. So just a start, would you be good enough to summarize your paper, summarize your proposals and just let us set the table with that.

MS. WOZNIAK: Sure. So it is really exciting to be a part of this conversation this afternoon. You're exactly right, Roger, that a lot of what I focus on is the geographic aspect of the way in which wages and wage stagnation has unfolded. So the stagnation has, in part, been a place based problem. So we are interested in responding to the call from Hamilton in thinking of creative strategies to raise wages for workers. One thing, I think, has been implied here but not said as directly is that there really are only certain sets of workers for whom this has been a problem. Large sets of workers but there are some sets of workers who have not really experienced the stagnation in any sort of real way and, in fact, have seen dramatic growth. College educated workers tend to be in that group.

But for many individuals, access to college is kind of prevented through a variety of barriers and the ones I focus on, like you mentioned, are those that had to do with geography. So right now, it might be surprising to folks but as you mentioned, a high percentage of individuals, over 50 percent of individuals who are enrolled in a four year public institution are enrolled within 50 miles of their home. That number rises to north of 70 percent if you look at 100 miles.

So within a very short radius, you're capturing basically your market for higher education. If anything, those numbers have risen since 1990. So almost increasingly, American's who are attending higher education are doing so in places that are close to home. We've actually known for a couple of decades that proximity to college encourages college access. So that means that where you live is a factor in whether you're able to go to college. Right now, 58 percent of U.S. counties and that represents 14 percent of U.S. high school seniors, lack an in county degree granting institution. Even though as I've mentioned, we've known for quite a while that such proximity is a really important determinate of whether an individual attends college.

So the first part of my proposal suggests a really straightforward way to tackle this by building out the infrastructure that we are already have for federal financial aid. By enhancing Pell grants to overcome what is obvious from the data are significant barriers for individuals seeking to attend college at a modest to a long distance from their home. Specifically, I would suggest that Pell be boosted for Pell eligible families by up to $5000 per year for students who are attending a four year institution at a distance from their own home. In particular, I spell out in the proposal, a way to target this based on whether individuals have an in county higher education institution or not. Although, you might imagine that there would be other ways to target this for individuals who face, and I want to underscore this, geographic barriers to attending those two and four year institutions.

So the second part of my proposal looks at the other side of this. This is the kind of challenge to finding an optimal start in the labor market. Some of those challenges are, in fact, also geographic. So again, over the last several decades, workers have actually been moving less often over a long distance in spite of the ideal that we often have of ourselves as Americans, as a highly mobile and fluid society. That trend has actually been very pronounced and we've seen dramatic declines in the rates of geographic mobility over time.

The declines have been largest, not in proportionate terms but in absolute terms. The declines have been largest for young workers and that's because they started from such a high base. So in 1965, about 16 percent of individuals 20 to 24 moved over a long distance on an annual basis. That has declined to 8 percent now. So for young workers leaving college, they are facing greater barriers to locating in a new market then they have in the past. At the same time, the divergence that we have seen in incomes, has in some ways, been mirrored across markets. So it is more important than it was in the 60's or 70's to land in the right place. If you don't land in the right place, it's harder to adjust that after the fact.

So on the other end of college, I propose we free up some of the barriers that individuals are facing, by giving students who have loan obligations, longer time to enter repayment. So again, this is a simple way to build out infrastructure that we already have in the federal financial aid program. We're just going to allow individual's a longer grace period, I propose 12 months, to engage in that more complicated job search that these divergent patterns across cities and labor markets and the decline in migration are facing them with.

MR. ALTMAN: One quick question before we move on. This point about younger workers having lesser geographic mobility. It is a little counterintuitive. One can imagine that more settled workers, they have a family, they own a home perhaps, it is harder to move. Friction costs are much higher. Why do you think it is the case particularly among younger workers that mobility geographically speaking has declined.

MS. WOZNIAK: So I think this is reflecting a number of things that are happening in the labor market, not all of which are completely understood. And some other work that is actually pending but I promise there will be a public version soon. Some coauthors and I are seeing that the time that workers spend on any kind of new job is increasing. This surprises some folks because there is less switching. That is just drawing out the time that young workers are spending in their first time and that slows down, in general, all of this adjustment process that we typically expect for them.

MR. ALTMAN: Okay thanks Abby. So Fatih, you're next. Your paper, as I was saying to you outside, I found at least really includes some quite stunning data and I really want to take my hat off to you for the work you did in assembling that data, finding that data and presenting it the way you do. Your paper talks about, I would say, some of the whys associated with declining lifetime incomes. You point out, for example, which I have found really striking that what has really happened is lower entry level wages and that even though the rate of increase and wages on a career long basis hasn't deteriorated over the recent decades, it hasn't been high enough to allow the fall at the beginning that's occurred to be made up for over a career and therefore, lower lifetime earnings. So I don't mean to steal too much thunder here but could you just take that and expand it into a quick summary of your conclusions and then your dual proposal.

MR. GUVENEN: Sure. Thank you very much. It is a great pleasure to be here and Roger gave a great summary of one of the key points that we basically have learned from the data. So let me just preface that with how we got to lifetime incomes. We talk a lot about wage stagnation, it is very well known. But often times when we say wage stagnation, it is basically about year to year changes in some average measure of wages. But if you think about like many economic decisions that individuals make, marriage, divorce, buying a house, having kids, these are long term decisions. What determines a lot of that is the lifetime resources that individuals have.

One question we might have in mind is what is happening to lifetime wages. Here now we are comparing cohorts of workers that enter the U.S. labor market in different years. One reason we didn't talk about this too much until recently is we didn't really have the data to do it. You need to be able to track the same workers for long periods of time and you need a lot of cohorts of workers to be able to make statements about trends. Now recently we actually were able to do it and what we find is, if you look at the U.S. economy in the last 60 years, going back to the 1950s, and focus on workers that entered the U.S. economy and folks in the median are right in the middle. Separate men and women for a moment because they have different trends. When you look at men, new cohorts of men actually had seen robust gains in their lifetime incomes from the 1950s cohorts to the 1960s cohorts. But there is an inflection point. Around 1968, this is way back, 45 years ago, there is a turning point after which every subsequent cohort of man, the median lifetime income declined. It's a big decline. The 1973 cohort had roughly 10 to 19 percent lower lifetime income than their parents' generation.

So when you go one more level and say why, why do we see this. One theory that explains these patterns, together with the rising wage inequality, together with some other patterns we see like the women's employment rising is what I call the brain drawn model. The idea is ever worker has two attributes. You have cognitive skills, brain and you have physical power. We are paid in a way for this portfolio of these two skills. Now if you go back to the 1950s, brown was pretty valuable. You could get a good job in manufacturing, in mining, in transportation and so on and be paid a high wage. But over time for reasons that many of us know and has been talked about here, there has been a decline in the value of brown. Due to unions declining, due to trade, due to automation and so on. So what we are left with that there has been a big rise in the value of brain, of cognitive skills.

So workers who basically can get more

cognitive skills can raise their wages whereas brown is not something that can grow too much. So the median worker over time has seen this decline because the value of the physical skills have been declining during this time. So what is the solution, educate. We can help people go and learn skills, accumulate cognitive skills. But as it turns out, that's not as straightforward as it looks.

So one statistic we hear about a lot and rightly so is the rise in the college premium. If you look at college wages relative to high school wages, there was about a 40 to 45 percent premium in 1980 and today that is about 100 percent. So there is a large rise over this period. But if I want to educate a worker, I don't know where you'll end up within the distribution of wages for college workers. So you can ask a different question that, I think, is actually very important. You can say, what fraction of college graduates actually earn in the top 25 percent of the high school wage distribution. You go to school for four years, where do you end up. The number to me is very surprising. I hadn't seen this being reported before. It turns out, about 43 percent of college graduates, this is 1970, did not ear in the top quarter of the high school distribution. This is condition of full time working and full time wages. What is striking to me is even though the college premium rose dramatically, this fraction almost didn't change. So today still about 43 percent of college graduates don't earn in the top part of the income distribution of high school graduates.

What do we take away from this. Not all education is the same. Even if you go to college, you may end up having wages lower than high school wages. The distinction, I think, is the types of skills that you are being taught and there is some recent research by others that look at within the college distribution, why did some people see wages grow and some didn't. It turns out that a lot of the divergence is in college majors. About two-thirds of the rise of equality within the college graduates comes from which major you choose. Then you ask, why are some majors seeing a rise and others not. It actually turns out to go back to the first point I made, the brain and brown. It depends on what types of skills a major is teaching you.

So coming from here, the proposal basically, the first proposal that I want to make was to understand the types of skills that we need to teach to students. Not only in high school but also in community colleges and colleges. There are several concentrations here. One thing we want to understand are skills that are valuable today but also will be robust to automation and other types of disruptions in the future. And the proposal I'm specifically proposing is to have this data initiative at local labor market level where on the one side, we need to collect data on job openings within local labor markets but is classified by the different types of skills that is required for the job. And on the other hand, we want to basically collect data on the supply of skills. Just like Abby said, many students go to local schools, they work in local markets. We want to understand the composition of the labor force in terms of their portfolio of skills.

That can tell us several things. One, it can tell us about skill shortages. In the labor market, the industries vary across states. So in the local labor market, we might have an oversupply of certain skills. So on the one paper that we recently finished, we looked at three types of skills. Skills that are more math oriented, verbal and also social. It turns out that not only do all industry skills matter for which growth, what we find striking in the data is whether or not you match between your job and your skill portfolio in these three dimensions is a big determinate of wage growth. Not in your current job only but also in the long run.

So if you are mismatched in a job today for several years, that has a human capital (inaudible) effect. You don't like the job, it's not a good fit, you don’t learn the skills and will ten years later, there is a persistent effect of that. So the first one is trying to get around this problem basically.

One example of that is in Minnesota. There is a project called, Real Time Workforce Alignment Committee and they have a website called the real time talent project where they collect some of this data. The goal is to bring exactly together, the educators, businesses and government together to have this information flow between these different groups.

One correlated to that is I think the test that I talked about where we measure math, verbal and social skills. These tests are very easy to implement. They are computerized, they were actually developed by the Department of Defense in the 1960s but now it is being used by the Department of Education and so on, called ASFAB and variance of that. These initiatives can actually give these tests for free to employees. As there are more job openings around the locally, you could have a sense about the good matches of openings and which job you will be a good match for.

The second proposal which I'll briefly mention is about encouraging technical education and community college education by tuition subsidies. This has been talked about before. As you know in 2015, President Obama had America's College Promise Initiative that didn't fully materialize. The idea was to give free tuition to community college students. There are some issues and some one of them is downgrading the potential that if you subsidize community colleges but not colleges, you may have some students who would have gotten into a college and finish it and choose to go to a community college.

So this has to be done right and the way I'm proposing it is to give a backload of structure of tuition subsidies. So not free tuition but start with a tuition that is 80 percent of the full price in the first year, then go down to 50 percent and lower over time which gives an incentive for students to finish it. To basically further encourage students to go to college, you can actually give a graduation bonus. If you complete the degree, then you get some of the tuition back which will then double if you continue to go to college. So these are two ideas that I think could help both teaching the right skills and improving formation --

MR. ALTMAN: Thank you, it's a terrific paper. Larry, if I can turn to you. One of the things I want to try to expand this discussion into is whether is the degree to which education remains the solution in an age of accelerating technology. You've spoken a lot, written a lot about the race, so to speak, between education and technology. Of course, one worries that we somehow get our college completion rates up but technology overwhelms it. So would you just talk about that in light of the comments that have already been made on the panel.

MR. KATZ: So these are both really impressive papers that get at important issues. The way I would like to think of it is I also want to link up to what happened in the previous panels, thinking about these changes and bargaining power and the fissuring of the labor markets because I think all of these are important issues. The way I've tried to look at it in the data is sort of try to figure out how much of the rise of inequality and the slowdown in growth of median wages has been attributed to these changes and returns to education that Fatih has talked about. It is important.

I updated some of the stuff that Claudia Golden and I did in the race between education and technology a decade ago. You still find since 1980, about 60 percent of the growth of inequality is the rise and returns to college and the slowdown of educational attainment has been an important point. Even though today's younger generation is more educated than any that ever came before it, it is getting more educated at a much slower rate. So people of my cohort have on average about two years more schooling than their parents. And at a return to schooling of like 10 percent a year, that is sort of a 20 percent wage boost. Someone who is 30 today has about a half a year more schooling than their parents. So that one and a half year fewer relative to 100 years of U.S. cohorts before that, starts people on a whole relative to where they're doing. Many of the people left behind, people from SES families are continuing to grow but many of them in these more isolated communities that Abby talks about are definitely being left behind.

So one big component, that explains maybe a quarter of the slow down and productivity growth directly and probably has indirect effects through innovation. It is a big part of the growth of inequality. You're still left with a lot of action for the stuff that was talked about before. So other work Fatih has done has separated out these person effects, persistent things like education and wages from what firm and this fissuring who works with whom. You get about a third of the action coming from these other factors so they are quite important. If you just looked in the 2000s, they're actually more important. Much of the slowdown in education was in the 80s and the 90s. So we need to think about both improving the education but also creating a more competitive labor market and giving clout to more educated workers. Both of those are really important as well as having tight labor markets, as Jared did.

Just a couple of comments on the specific policies. I think I fully agree with Fatih that we want to encourage going further in schooling but what you do in schooling really matters and that there could be really big improvements from better linkage of labor market information about skills in demand with what is taken in college. We have increasing evidence from random assignment studies, particularly of sectoral employment training programs or community colleges and local non-profits and four year schools, work with an industry to find both the sects of things where they're having trouble finding workers today as well as the sets of skills that you think might grow in the future.

One interesting thing that fits with this sort of match, mismatch and growth is in these randomized control trials that MDRC and public private venture have done. They were finding 30, 40 percent wage impacts a few years out and they actually seem to be growing in the latest data from the work advance one where one has it four years out. And it very much fits as people are getting into occupations where they're starting low down that have a lot of growth. Whether it is IT, whether it's in the healthcare sector. So improving these matches early in the career, may have a much more durable impact on wages than past training programs. If you both look at where you can get a job today as well as skills that might grow and similar things through some internship programs.

But a key issue about these high return programs is they do a lot of screening up front which gets exactly to Abby's issue. People who do not have the good high school education, the early college, are not getting accessible. We need to combine the things to get people preparation from more isolated communities and disadvantaged backgrounds. Some of that are the types of things Abby has talked about, about increasing access to college going. Some of it may be something along the lines that Jared talked about that is combining some sort of subsidized job initially where an employer doesn't want to hire to get you some initial skills to demonstrate you can show up to work on a repeated basis and get through these initial screens to get in there. There may be a combination of this sort of short term subsidized employment with access to stronger training programs.

The final point I want to make is the two other key issues is I don't think it's enough to just create a financial incentive to move your location and to throw money at financial aid. Even with all these incentives, I think there are institutional factors. If the institution is offering stuff that isn't linked to the market and it is really low quality and we've really invested in the last 20 years increasingly in voucher like public funding through Pell grants. A lot of it has been taken off with cut backs and state funding for institutions that are higher quality. A lot of that among the college graduates is not just field of major but going to low quality of institutions. The extreme case being for profit colleges but many strapped community colleges and four year schools.

I think we need to combine any financial aid project at the individual level with greater funding through states for institutions. David Deming's recent work with Chris Walters shows that is more effective in increasing education than the very flexible vouchers. We also need to think about Abby's issues. Couldn't we build more four year public research universities which we did in the period where Fatih is looking at high wage growth rapidly in the 50s and 60s but haven't for decades. A lot of evidence suggests getting those schools that have very high return.

When I was growing up in California, the population increased from about 10 to 20 million. The number of UC campuses increased from 4 to 8 between the time I was born and when I turned 18. In the last 40 years since then, they've added one UC campus but the population of California has doubled again. That has shown up throughout the nation. That can't be the right strategy. If we think about infrastructure and building human capital as well as physical capital, building more research universities in some of these areas closer to people that could then become the hubs of economic activity innovation, seems to be something very much we need to complement the direct voucher approach.

Finally, we can improve the efficiency of the types of policies that Fatih and Abby did using a little behavioral economics. There is a lot of lack of understanding through the complexity of financial aid forms or something that says, four years out you're going to get an incentive that you might want to both advertise this, experiment with the best ways of writing information and provide some shorter term performance based incentives. Four years out taking a better field is not that salient to a lot of 18 year olds.

MR. ALTMAN: I must say, I thought it was fascinating in your paper, Abby, as Larry just said. You could conclude that if you suddenly woke up in the morning and you were governor of one of those states where access to post-secondary education is not close at hand generally, which tend to be rural places. One thing you could do to really improve the lot of your state would be to figure out a way to establish another or more than one more, institution of higher education. There happens to be one university in Wyoming, at least that I'm aware of, so all of the sudden you establish another one. Probably difficult to do and expensive but you would really have a major impact on your state and living standards in your state.

MS. WOZNIAK: I think that's right. I'd be curious to know and Larry may know, if there has been an evaluation of the impact of UC Morsehead.

MR. KATZ: I would love to see one. What we do know historically from the work of Enrico and Moretti, is places that have got land grant universities have been much more resilient to economic shocks than other areas in that they create new industry.

MS. WOZNIAK: Yeah absolutely.

MR. ALTMAN: So Julie, if I can turn to you. So you represent maybe the most important corporate foundation in the United States, certainly around the world. And it is also a stamens from a company which has been at the center of so many debates on wages and incomes. So how does your foundation think about these issues and what do you think philanthropy in general is doing or not doing in terms of making a difference on these issues.

MS. GEHRKI: Thanks. I'm really pleased to be here. I think some of the work we're doing is really experimenting with some of the pieces that my fellow panelists have talked about today. Our model of philanthropy is interesting because it is very much rooted in the fact that I sit with the world's largest private employer. So how can we leverage the business to make change and then think about our philanthropy as strengthening systems more holistically.

When Walmart made a commitment about three years ago of $2.7 billion investment in education, wages and training, we also, through the Foundation and philanthropy, said we'd invest $100 million in creating really the sector based pathways to opportunity. And thinking about how retail and the service sector can be pathways to economic growth. So that is what our philanthropy has been thinking about and we've learned a couple of things. We work with a number of foundations on this. Different ones in different pieces.

So there is one set that I think is really important that is about how do, for the people Larry mentioned, that are often screened out of programs. Opportunity of people with records get into the labor force. Retail and service sector jobs can be a real asset for, they are many people's first job. Sometimes when I speak I have people raise their hands of people who started in retail and it is usually a huge number. I get stopped in planes all the time. My first job was in retail, here are all the things I learned. So we should take advantage of that.

There are efforts, 100,000 Opportunities, which is about opportunities, various places where employers are coming together, often supported by philanthropy to hire and prove that this is a thoughtful workforce to engage. But you can't stop at the hire. You've got to have retention and upscaling as part of that. Frankly, as much as we've done and know in this space, there is not a huge amount known about frontline retention. So we've been funding research, really thinking about what that is. When you look at who is in the frontline of the service sector, the National Skills Coalition did some work, 62 percent have low literacy rates. 74 percent have low numeracy rates so you've got to be investing in skills.

I have a frontline opportunity to see some of what Walmart has been doing over the last two years. One of the things, we have a pathways program that starts day one and is basic retail math and various pieces. In addition, the company has built 200 what they call, Walmart Academies, around the country. They tend to be within 100 miles of all the stores. They are training grounds for our frontline managers. You go there universally for about two weeks, it is on the clock training. There is curriculum on leadership, on management. You spend about half of the time in the classroom which also includes things like virtual reality and iPad training. You spend about half the time on the floor observing best practices. 250,000 people have gone through that in the past year so it is designed for working learners. It is designed to gain skill on the job. We announced last week that people who can complete that have up to 19 college credits for completing that.

So that gets to the next point. You design really relevant training, you figure out what works. We're seeing retention gains from people who go there but even more importantly, retention gains of those who report to people who have gone through these. So you start proving the business case of investing in frontline human capital. And then you build pathways to next steps. That often is into college, into credentialing programs. Making sure those are tied to in demand skills and designed for working learners. We often, I still have the concept of, most people in education are 18 to 24. That's not the case. Over 58 percent of people in college are working and more than a third are over the age of 25. But the system is not typically built for them so how do we think and really figure out the right ways to do competency education, to think about scheduling the right blended, online and in person models that work for working learners. Ways that they can acquire skills that are remedial skills without exhausting their Pell grants before they start getting credit bearing classes.

All these pieces have to come together. Places like Chipotle are doing really interesting work where they've brought a platform called Guild that does coaching and mentoring for the students. They have a partner in Belview University which they selected because they are serving adult learners with low debt rates, high success rates. It is really they learn on an Chipotle P&L. So it's relevant, they apply it tomorrow. Those are the kinds of models that we're seeing have great success rates.

Finally, we are entering a period that is going to be incredibly dynamic for skills. World Economic Forum recently said 65 percent of those entering primary schools will have jobs that don't exist today. We've got to be ready to be nimble in this space. The research doesn't look that compelling that we're good at it today. So Gallup working with the Lumina Foundation did some research and I think it's 95 percent of chief academic officers think they're preparing their graduates for the workforce. Less than a third of hiring managers think the people they hire with degrees are prepared for the workforce. That gap has got to close. That's not just on educational institutions, that's on employers to engage, to be more transparent about what they're going to need in the future. Most of our data and most of our discussions in labor look backwards at what has happened. How do particularly employers, become more transparent about where they think they're going and collaborate with the educational institutions to make that very clear in the partnerships like Larry mentioned. AT&T is a company who has done that through their Workforce 2020 Initiative. They've said, these are the jobs we'll have. That's 100,000 of you who are going to need different skills. Here are programs we have subsidized to help you move that way.

So I think all of this comes together to say philanthropy can help experiment, we can really figure out what's working, we can get better data into this space. In our specific place, we think a lot about what leverage I have to talk to our competitors and others because often they'll take a meeting from a Walmart Foundation person. So how does that work to really knit together government programs, educational and training institutions and employers to really build nimble successful models for the future.

MR. ALTMAN: Thank you, that was really good. Portia, if I can turn to you, finally. I'm just sensitive to make sure we get in some time for some questions. You and I were talking a little bit just before the panel started and what I really want to ask you is a version of what Julie said. How corporate America looks at this lifetime incomes challenge and in connection between that and education and skills training. But I do want to sharpen my question by saying as I said to you on the side, for better or worse, and there are many days when it is definitely worse, I work with large corporations a lot and I work with chief executives a lot. If somebody said to me, how much discussion have you heard about these issues we're talking about today over the past two years, just me personally spending a lot of time doing what I do. The answer would be almost none. Now my experience may not be representative at all but just take that and speak to it if you would.

MS. WU: Thanks Roger and thanks to the Hamilton Project for having me. Maybe the difference is being at a tech company, I'm at Microsoft, we're very sensitive to the broader dialogue about concerns, about AI and automation and what that is doing to jobs. We also find ourselves, as with other employers, in an incredibly tightknit labor market. For many tech companies in particular, there is a huge crunch and a very competitive drive in terms of technical IT skills in particular. So if you look at the situation our company has faced, we have 37,000 high schools across our country. Only 4300 of them offer an AP computer science class. In 2016, we had 600,000 computer science jobs open, we had 40,000 people graduate from U.S. universities with a computer science degree. Lots of them go to places like finance or somewhere else.

So there is this constant deficit in terms of sufficient investments and digital skills and degrees. I think we all understand that that's not a K-12 problem, it's not a post-secondary problem, it's a lifelong problem at this point. I hear a lot and maybe it's because I talked to other workforce people. I think corporate American is really understanding, there is this lifelong learning imperative. We know our businesses will change. Technology will transform them whether those businesses or retail or hospitality or healthcare and we know a lot of our workers will need to shift to other kinds of jobs. I think people are really worried and many businesses very much want to help people make that transition. So there is a lot that needs to be done.

I do think some of the recommendations in the panelists papers are very important. I would also say I think a lot of education is moving to online. Talking about new college, California has contemplated community college is going to be all online, potentially. So really thinking about that and then an initiative Microsoft has been really involved in is rural broadband access. It is not just a college attainment issue but it's homework. I don't know about you but my 8 year's old don't get paper homework anymore, it is all online. So to think about in a household where you don't have access, 24 million American's in rural America don't have highspeed internet. So that's a huge gap compiled with other geographic isolation. That is a huge problem.

I wanted to get back to something that Fatih and others have said about the data. I think this is an important role that corporate America has to play and I think Microsoft is a little bit unique in this sense because LinkedIn is part of our corporate family. It is really interesting to be able to look at that data and we all say we want to know the jobs that are being created. But it can also help us understand a much more in depth way in addition to government data. Government data lags and it is much less robust and fast. We can also see the skills people had and the jobs they had five years ago.

For example, you look at some of the reports that LinkedIn has done, they can say look at the top five roles form data scientists to sales development reprehensive and customer success manager. Some of those are highly technical roles and many people come from software development into those roles. But others, people were customer service people. They were administrative assistants five years ago before they moved into those jobs. I think understanding the same things others here have said, how do you better use information data technology to help hone in on what those skills are and people understand what a good fit might be for them and make sure they have the resources and access and equality of access here is incredibly important to widen gaps we have already. Demographic gaps, race and gender gaps, economic opportunity gaps, to make sure people can access that training they need and move into those new roles.

I think it is interesting and I'm worried that you're saying you're not hearing that a lot from other corporations. I think it is an incredibly important present conversation. I feel like the tight labor market is actually helping it. I worry that if we have another downturn, people will shelve it again when we need to be pressing for it on this run.

MS. ALTMAN: It might well be that my own set of experiences isn't that representative. We have some good questions from the audience. Curiously, several of them seem to be written by the same person who is very thoughtful. I think it was Jason. Let me start with this, one thing we haven't discussed.

In the book, which Jay and his colleagues produced so successfully, there is a reference to the degree to which a substantial majority of states have now implemented statewide universal Pre-K. I want to ask a multifaceted question to anybody who would like to take this on. First of all, do we have a sense of how effective those programs are and I'm sure they vary a lot from state to state. That would be inevitable. In other words, if we're actually doing a better job, that is a question, in terms of universal Pre-K, to what degree can we even guess as to the impact that may have from a lifetime earnings point of view. Secondly, how do we even measure that and how important is it. Who would like to answer that.

MS. WOZNIAK: I can say we have a guess and Jason will be angry because the exact numbers will escape me. CEA put out a report on early childhood investments that contain those estimates and you can still find it on the Obama CEA archives. I think the bottom line is, in general these are incredibly high return investments. You're right that there is some variation across states and the particulars of the programs. I think what is even more encouraging than that is that the farther back into childhood you push these investments, the higher return they are. So nurse home visiting programs are types of programs where we can intervene just when children are coming home from the hospital for the first time.

Incredibly low cost programs with very, very high returns over an individual's lifetime. As Fatih was mentioning, there is always a place where it takes a very long time to get the data because you need these children to get to adulthood and spend some time in the labor market before we can observe what is happening. That makes it always a little bit of a guess as to what cohorts from 20 years ago are going to have to say about today. But I think the bottom line is those are great programs. By enlarge, they are extremely cost effective and it is encouraging to see states adopt them.

MR. ALTMAN: Okay here is the next one. I actually have a series of questions that touch on this. We've talked inevitably since we're here in Washington, on what the federal government can do. Expand Pell grants et cetera. Abby you talked about forgiveness in terms of student loans for young people who travel long distances to go to school and certain other things. If we had to give an agenda, and this question concerns states in (inaudible) so let me focus on states for a minute. Agenda to states, this is what we would like you to do within the context of what is feasible. In the context of this discussion here, what would that agenda look like. Secondly, can we name a couple of states that are really doing a good job on this. Larry, would you like to talk about that?

MR. KATZ: Okay. There is K-12 and early education where, I think, Massachusetts if it were a separate country would come up way up in the distribution of the international test scores. I think there has been a bipartisan expansion of resources and reduction and barriers where Pre-K is much higher trained teachers than usual. I think that gives a high quality to the program and is also invested a lot in vocational types of high schools that have serious academic preparation. If Massachusetts were a separate country, it would look very good on a lot of those international dimensions. I know it very well.

The thing I would point out, that's an example, is the incredible work that Raj Chetti and his colleagues have done about the geography of upward mobility in the U.S. So the best places, parts of Massachusetts, California and places in Iowa, have as much upward mobility for low income people as Scandinavia or Canada which is the model of everything. Where as many parts of the U.S. look like a disaster. They are relative to many other places. It is highly correlated with these indicators of school quality and investment early education. It is also very strongly correlated with segregation of where people live by income. The work I've done on moving to opportunity shows very high returns not only in early childhood education but also in getting people out of very dangerous neighborhoods to areas with higher quality school. If we use Bob Greenstein that has made a proposal in the past, if we used our current $40 billion of support for low income housing the federal government more effectively to help people move to areas with better opportunities for their kids, that would have very large potential impacts.

State local governments even within their existing budget, public housing authorities could do a much better job of trying to make salient and trying to help people who have housing assistance move to areas using the sorts of maps that Raj Chetti and others have been putting together that have higher upward mobility opportunities for their kids. They could invest more in early education and they should be investing more in sort of allowing experiments on the cheaper sort of nudges towards making more salient what school quality is when you search for housing. Or when I worker goes to unemployment insurance or the employment office, making more salient broader geographic range of jobs. So I think there is a lot, even without a large federal investment, that there may be some low hanging fruit that a lot of state and local governments could experiment with that would both benefit them and we would learn a lot from.

MS. WU: Can I add on to that. We talked about K-12 and obviously computer science is a huge priority for us. But also thinking about career pathways, education and partnership with community colleges and I failed to mention registered apprenticeship and apprenticeship models. Some states are doing a great job, Colorado and some others are trying to invest in youth apprenticeships. It's a tool, not just for people of college age. I think we have to recognize some of these tools. We need to have better tools for other kinds of returning adult learners.

MS. GUVENEN: I wanted to add something to what was said. The outcomes kind of being related to segregation which is actually another trend. If you look at the last 30 years, we see increasing geographic segregation and we see basically families spreading across zip codes. So if you look at singles or married couples without children, you don’t see too much segregation. If you look at married households with children, you actually see segregation across school districts. One thing that is different about the U.S. compared to many European countries and the rest of the world, is this very local nature of public financing for schooling which might be actually perpetuating some of the inequality and some of the poverty. So I don't have a proposal about what can be done about that but I think in this context, it is something that we should be very much aware of. If your parents are wealthy, they can afford a house in a nice neighborhood, the schools are good and you end up being the same.

MR. ALTMAN: Okay I want to follow that up with a question that is here which is addressed to you. Your profound data on lifetime incomes, what do you think that data implies, especially if this trend continues, for the effectiveness of our social safety net or what should happen to our social safety net?

MR. GUVENEN: That's a very good question. Actually, when I was listening to Abby's presentation and also the mobility across states. I was wondering, actually, the extent to which some of that could be driven by the declines of incomes. In the sense that the lower your income is, you rely more on informal insurance networks. One conversation I've had over the years, some people in Minnesota who moved to a particular city like Fresno, California. I said, why did you move to Fresno. They said, oh I know somebody there. There is one person I know there and that is enough for me to make the move.

If you look at the entry level wage, the median man at age 25 today makes about $25,000. This number was about $35,000 40 years back which is mind boggling. Because the U.S. economy has grown a lot, real wages have grown but not the wages of young people.

In terms of the social safety net, I think that can be indirect effects. For example, what we know is one benefit of unemployment insurance is it allows you to search longer which then allows you to find a better match. The extent to which mismatch effects long ground wages that can actually improve because unemployment is always higher for the youth. Occupational switching also involves unemployment. So one particular one which, I think, is unemployment insurance, could help workers search in a less (inaudible) way and they'll find a better match to their skills. That is one angle that is very important.

If you look at workers, high school graduates between the ages of 20 and 30, they switch between five and six occupations. High school graduate, you don't have too many specific skills so you sample different things and in the process, you learn about yourself and you learn about the jobs. If when you switch from one job to another, you need to search for a job than you are less likely to do that. I think that is one angle to be important for encouraging more experimentation for young people in the labor market.

MR. ALTMAN: Let me close this panel with a question that I hope more than one of you will address. On Monday, I was in Silicon Valley and I went to see a company that everybody in this room has heard of. This particular facility that I went to had about 25,000 employees. I was talking to one of the senior people there who said to me that the average age of their workforce in this particular facility was about 27. I said, how can that be. He said, well about half the people you see here did not complete college, they came here before doing that. Now this is a pretty exciting company and has a pretty good future. Do we think history will judge that they made the right decision? No, I'm not going to finish college, I'm going to work there. Just assume it's a really good company.

MS. GEHRKI: I think what we're seeing is a move to competency based choices. That has the potential to be a really positive thing. Because some of the barriers to access disappear if we start valuing that you learned problem solving by navigating a bus schedule. It is not as much about where I learned it in the classroom then it is about. That takes a new system, it takes thoughtful assessments, it takes really credentials that are meaningful. I think that we want to make sure that the outcomes of this are right. But I think that we will see a rise, particularly as lifelong learning becomes more important and this continual retooling is essential. You'll see more people get the equivalent of a college education but over time as needed.

MR. KATZ: I would answer in two ways. Almost certainly they made the correct decision because they're winners, they've got good jobs. Was Lebron James reasonable not to go to college given what his outside opportunities were? But most people who drop out of college don’t do so to work for top tech companies and they are probably making a mistake. In fact, the investment of staying there longer has a very high return. Of course, if you have an absolutely fantastic outside option, it is probably worthwhile to take it and you would probably have insurance of going back --

MR. ALTMAN: Although I would imagine that the average annual earnings of that workforce, you'd be surprised at how low it is.

MR. KATZ: Okay so they may not be.

MR. ALTMAN: I don't know what the number is but I'd think you'd be surprised.

MR. KATZ: Right. So it could be, I don't have full information. If you told me they were leaving college to make $200,000 a year, I would say sure. If you told me they were leaving college to make $30,000 I think it's a terrible decision.

MS. WOZNIAK: So I'll answer the question with a question which is that some of the other work I've done has looked at whether the gap we see in geographic mobility between college graduates and those without a college degree is a causal relationship. I would argue that the work I've done shows that it is. There is something about going to college. It turns out, based on some tests we do, that it's not because you have to move to go to college. As we saw in the other data, a lot of people don't move that far to go to college.

Traditional college is giving you something that is pretty different. I would argue it is a completely different set of skills than the skills you use daily on your job. The question that I have about going to a competency based model is how much of the other things that we see happening in college graduates and college graduate families are kind of those secondary benefits of college versus are they coming directly from skill or from income.

MR. KATZ: I think the key, if you look at the labor market data, is really something Fatih said and is really work that David Deming and others have done, is the really big returns in the labor market are not the brain brown model isn't exactly right. It's this interaction of social interactive communication team schools with that. Having a bunch of social skills and not having any competency doesn't get you anything. It gets you some very low wage jobs. But having really good competency and not being able to interact or communicate stuff isn't that valuable. In fact, the pure return to cognitive test scores is flattened out over the last 20 years. What is really gone up is what we wants as a liberal arts major who knows how to code, or a computer scientists who has actually read some Proust.

MS. GEHRKI: But there are people who do that without colleges.

MR. KATZ: Right I'm saying the focus just on the competency stuff without the liberal arts education of college would be a loser.

MR. ATLMAN: I hope that proverbial person enjoyed Proust more than I did. I wanted to thank this wonderful panel for being with us today. I also want to thank Jay and Ryan and Kristen and all the members of the Hamilton Project staff for carrying this off today. Very well done. Thank you.

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CERTIFICATE OF NOTARY PUBLIC

I, Carleton J. Anderson, III do hereby certify that the forgoing electronic file when originally transmitted was reduced to text at my direction; that said transcript is a true record of the proceedings therein referenced; that I am neither counsel for, related to, nor employed by any of the parties to the action in which these proceedings were taken; and, furthermore, that I am neither a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

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