THE BROOKINGS INSTITUTION

FROM BRIDGES TO EDUCATION:
BEST BETS FOR PUBLIC INVESTMENT

Washington, D.C.

Monday, January 9, 2017

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Part 1: Infrastructure

Keynote and Discussion:

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Panel:

DAVID WESSEL, Moderator
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Part 2: Human Capital

Paper:

KRISTIN BUTCHER
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GREGORY DUNCAN, Discussant
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Paper:

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Panel:

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Part 3: The Political Realities and Challenges of Public Investment

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P R O C E E D I N G S

MR. WESSEL: Good morning. I'm David Wessel. I'm Director of the Hutchins Center in Fiscal and Monetary Policy. The Hutchins Center was formed three years ago now -- this is actually our third anniversary -- to improve the quality of fiscal and monetary policy and public understanding of it. And I think that this is actually a very good embodiment of what we had in mind when we started the Hutchins Center with a generous give from Glenn Hutchins, a Brookings Trustee because we think that there's a role for research in shaping good economic policy and in helping the public better understanding it. And certainly infrastructure spending and investment in human capital are two of those things that are often reduced to bumper stickers, sometimes with no evidence whatsoever behind them.

I just want to say a word about the Hutchins Center. As of today we have done 44 events, today we will publish our 26th and 27th working papers, we've done 19 explainers, part of our public understanding, and we've produced one computer game, called the Fiscal Ship, a game that helps to educate people on the federal budget. There's going to be a laptop or an iPad set up outside if anybody wants to try it.

But today we have a very simple question, but unfortunately not such a simple answer. So, say you want to spend more money on public investment -- that seemed pretty popular during the presidential campaign -- where should you spend it to get the highest return and on what evidence? And so our attempt today is to begin with some discussion of the evidence and the arguments for public investment. Those of you who looked at the program know we're going to start with a keynote from Larry Summers, who among other accomplishments, is Co-Chairman of the Hutchins Center Advisory Committee, to be followed by a conversation with Ed Glaeser that I'll moderate. And then we have a panel of academics, who I'll introduce later, to talk a little bit more about the evidence on physical infrastructure. Then we'll turn to human capital. It was our belief that too often the conversation in Washington separates investments in physical capital and human capital and we attempt today to bring them together into one thing. The other thing we've tried very hard to do is avoid advocacy for one particular form of public investment based on the interests of the people who are promoting it. There's an entire industry that's dedicated to telling us that we ought to put all of our tax money into pre-K and another industry that's dedicated to no, we ought to put it all into roads and bridges.

So we hope today to shed some light on the evidence for this and the arguments and also the questions that remain to be answered. I think we would be foolish if we pretended that all the questions had answers.

Following the panel that I'll moderate we're fortunate to have Kristin Butcher from Wellesley College who will talk about the aspects of which transfer payments, particularly to low income families, can be considered investment. Then we'll break for lunch and we'll return with Sarah Turner who will talk about education and what we've learned about research in education and the efficacy of that over the last few years. There's been a lot of work done. And then we're going to move to a discussion -- I'll introduce the people later -- about the politics and practicalities. It's a long day. I appreciate everybody coming on time. We are on CSPAN and Huffington Post and the Brookings website, so be careful what you say (laughter), but not too careful. That applies to everybody except you, Larry, you don't have to be careful. (Laughter) There’s coffee outside, the bathrooms are in the back. My colleagues here at Brookings would appreciate it if when you get up if you take the papers on the floor and put them in the recycling in the back.

So, with that, Larry Summers. (Applause)

MR. SUMMERS: Thanks very much, David. I am glad to be here and to participate in this event on what I think are a very consequential set of subjects. If you are looking for either predictions as to what will happen in the next several months in Washington, or you're looking for politically feasible judgments about what could happen in Washington over the next several months, my talk is not the one you should pay attention to.

Instead I want to do four things this morning. First, talk in a broad way about why I think infrastructure is so important. Second, make what I think is the overwhelming case for a program of expanded investment in infrastructure maintenance. Third, make what I think is the more speculative, but still compelling case for a broader program of infrastructure improvement. And, fourth, remark on the important role of markets, prices, and the like in improving the ways in which we invest in infrastructure.

So, question one, why do I think infrastructure is so important and a compelling need in the United States right now? At one level there are a variety of studies which I suspect will be discussed in subsequent panels that make a case that the return on infrastructure investment as conventionally measured is relatively high, at least compared to the government borrowing rate, which for the long-term in real terms in the United States is now very, very close to zero. At a broader level there are a set of economic observations that would suggest, to me at least, that conventional measures of rates of return are likely to understate the benefits of at least many categories of infrastructure investment. We know that more open trade generates economic benefits that substantially exceed any calculation of conventional dead weight losses, perhaps because of the spur of efficiency from competition, perhaps because of the economies of scale from larger economic aggregates, perhaps from the greater facilitation of specialization. In the same way, we know in ways that are not predicted by at least the simple economic theories taught in basic courses, that levels of productivity are much higher in the presence of substantial agglomerations of people than they are in the absence of such agglomerations. Again, evidence that bringing people together yields benefits.

What does infrastructure do? Infrastructure permits, in substantial part, larger interchange and reduces effective distances, thereby facilitating trade and agglomeration. It would therefore be very surprising if the private benefits of infrastructure were not exceeded by the social benefits. I have wondered about this for many, many years since reading the work of Robert Fogel on the transcontinental railroad. The historians in general believe that the transcontinental railroad was central to the success of the American economy in the last third of the 19th century. That was the general view of historians. Fogel demonstrated that if you did a calculation and you said, well, transportation is X percent of GDP and the railroads are half as expensive as canals would have been and you multiply the two numbers together, the whole thing could only have been two or three percent of GDP, and therefore the whole thing was not ultimately very important and all the historians were wrong. Maybe. Or maybe Fogel didn't recognize and didn't take account of the various other trade-like benefits that were facilitated by the knitting together across the country that the infrastructure investment permitted. I suspect at least some of the latter.

Second reason why I believe infrastructure investment is so important at both an economic and a broader social level is that in a world where most things are increasingly mobile, private capital almost capital, ideas almost completely, private companies enormously, a nation's infrastructure is distinctively local and is distinctively defining of its strength. That means that in an economic sense an investment in infrastructure creates (inaudible) attracting mobile factors from abroad to the more attractive infrastructure rather than having benefits, a substantial part of which diffuse outside of our country. I also believe that at a time when we should -- if we learned anything from the last election, it is the importance of responsible nationalism, that the idea of a common infrastructure in which all American scan take pride in its quality is a potentially important constitutive element of our nation.

So I think are *a priori* considerations for believing that infrastructure is profoundly important.

Second, the case for maintenance it seems to me is overwhelming. The American society for civil engineers estimates that extra burdens on automobile owners because of poorly repaired roads in the State of Massachusetts are about $2.3 billion, which extrapolates to over $100 billion for the United States as a whole. Depending on just how you do the calculation it is between $.50 and $1 tax on gasoline that motorists pay each year in extra automobile repairs because of poorly repaired roads. It is inconceivable to me that fixing that is not an investment with an extraordinarily high rate of return. Now, I have no idea whether the American Society of Civil Engineers has made that estimate with precision, whether that estimate is right to within a factor or 2 or not, but if it is even close to right it surely makes a case for very substantial increases in maintenance investment.

The same point, and this is not something that will easily be quantified with a statistical estimate, was made for me years ago when I was Treasury Secretary and I, as was my habit at that time, every time I visited an American city went and visited a high school and gave a talk about the importance of financial education and education more generally. And I gave such a talk and it was, I thought at the time, a pretty good talk and a young teacher came up to me and said, Secretary Summers, that was a really interesting talk, but I'll tell you what I think the kids don't understand. I said, what's that, and she said well, you said that their education was the most important thing in the world, but the paint is chipping off the walls of all the classrooms in this school, and it isn't chipping off the walls at McDonalds, it isn't chipping off the walls at Walmart, it isn't chipping off the walls of almost any other place except at the school. So why should they think that this society regards their education as the most important thing in the world? And I'm not usually at a loss for words (laughter), but I had no effective answer. But what I do know is that there are 10,000 schools across America where the paint is chipping off the walls, and I do know that on somebody's estimate 20 percent of the chemistry labs in American high schools have HVAC systems that don't work so the kids get sick when they do the labs. Now that can't be right.

Now, here's another thought, fixing this is fiscal prudence. The evidence is -- you know, people have done these studies on delayed road construction, delayed road repair, and it's what you would think. Prevention is cheaper than cure. Waiting for the road bridge to collapse is much more expensive than buttressing the bridge before it collapses. Yet we have a set of measurement systems that measure with elaborate precision and require Congressional approval on a period basis every time we increase the value of the dollar debt of the country. But deferred maintenance is every bit as much a debt burden on the next generation. It is one that cumulates and compounds at a much higher rate and we have no mechanism for measuring it, let alone limiting it, let alone containing it.

So final reason why I think the case for more maintenance is compelling -- I'm going to go a little bit over time here, guy (laughter) -- and that is that all of the incentives for all of the actors are against maintenance. Nobody ever named a maintenance project, nobody ever got recognized for a maintenance project, nobody ever much got blamed for deferring maintenance during the time while they were in office. And so all of the incentives are to defer maintenance and also to defer pre-maintenance. I learned this when I was President of Harvard, where there were all these people running around saying Harvard should be more green and, you know, we should just be more green and we should make programs to be more green. And frankly as an economist I was not hugely impressed by this stuff, but then I learned a little more about it. And here's what it turned out happened in two-thirds of the buildings built at Harvard between 1990 and 2005 -- somebody was in charge of the project, they had a budget, they were overshooting their budget. In part they were overshooting their budget because they had underestimated things, in part they were overshooting their budget because the faculty wanted fancier laboratories or fancier offices or whatever. And so the budget was being overshot and so everybody was mad. And what did they do? They took out at the last moment the insulation plans in order to save money. Well, they did save money, they got in under budget. Of course, they paid $.20 a year in extra heating costs and air conditioning costs for every dollar they spent, so it was completely stupid in terms of the University's financial health, but the incentives there were overwhelming to do it. And if you don't think that's pervasive in infrastructure investment the public sector does across the country, I have a bridge that I would like to sell you. So I think the case is overwhelming that we should be spending substantially more in maintenance. How much? If you take that $100 billion a year in damage to automobiles it's hard for me to believe that there wouldn't be a pretty compelling case for spending half a percent of GDP more each year on maintenance, at least for the next decade, as we worked off a backlog.

Third, there's more. The Treasury did a study or commissioned a study -- I can't judge, again, the precise wisdom of the calculation -- and the study was done by infrastructure advocates, but it emphasized that there were 40 projects across the country that cumulatively would cost about $200 billion and would in present value have benefits of somewhere between $500 billion and $1.1 trillion. I can't evaluate each of the projects. Here's one I think I know a little bit about -- the air traffic control system of the United States. It is based on radar. I'll tell you three initials that have nothing to do with the air traffic control system of the United States of America, GPS. I've been banging on -- some of you have probably heard me say it -- about JFK Airport, LaGuardia, and how terrible they were and how this made a case for infrastructure investment, how it's terrible. Well, eventually what I figured would happen did happen, which was that the guy who is in charge, the guy from the Port Authority, called me to try to get me to stop. And he knew -- he's the sort of guy -- he knew that he wasn't going to get me to stop a good story unless he gave me a better story (laughter). And so he decided to tell me more than I knew about the air traffic control system. And he said, how does the air traffic system work when it gets really congested over the New York area? He said well, they do some of it on the screens, the radar screens, but there isn't actually enough capacity for all the green dots, and so there's another technology they use, thumbtacks, yellow stickies, and an oak bulletin board. This is the New York area air traffic control in what calls itself the greatest country in the world. That cannot make sense. The energy losses because we do not have a sensible national power grid transmission system do not make sense. The safety losses because we transport energy on trucks and trains rather than through pipelines do not make sense. It would not surprise me if there were substantial benefits to a sensibly designed national broadband program, though that is I think a less clear question.

I am familiar with all these analyses about how mass transit doesn't work and how high speed rail really isn't cost benefit given how spread out American cities are, I am. And in some cases I'm sure those analyses are right. On the other hand, it's hard to believe that we are not awfully grateful that people built a subway in Manhattan 100 year ago. Hard to believe that we're not awfully grateful that that happened. And it seems to me when we think about our obligations to posterity in a world where things become much, much more costly to do, we need to recognize the creation of those option values as a value.

So I think there is a strong case for a substantially more ambitious national infrastructure investment program, perhaps on the order of one percent of GDP each year going forward.

Finally, what about the role of the private sector, what about the role of prices? The case for user fees, the case for congestion tolls is, it seems to me, an overwhelming one to anyone who thinks about the economics. There is no reason why people who use infrastructure more heavily should not pay for it, there's no reason why we shouldn't create infrastructure to the point where it yields benefits that are not to the point where it is fully used at a zero price. And so part of any comprehensive approach to infrastructure seems to me has to be much more reliance on user fees. Part of any national strategy for addressing infrastructure has to be addressing the effectiveness with which we publicly invest. That goes to questions of efficiency in procurement, that goes to the enormously burdened systems of regulation. The bridge that some of you will know that connects Harvard Square with Boston is 362 feet long, it has been under construction now for -- repair, not construction, repair, for 5 years -- 5 years. As I gently suggested to the people in charge, yes, this was a complicated reconstruction project. It really was a complicated project that had many different aspects to it. On the other hand, World War II was a complicated project as well (laughter) and it had only taken three and a half years to win. And I noted that prior to the advent of more or less any technology, Julius Caesar had constructed a bridge across a 2000-foot span of the Rhine in 9 days. And so their five years didn't look very good. And it is for political scientists more than economists to figure out how to solve this problem, but it is an immensely important one.

Let me say, finally -- and perhaps Ed and I will have a chance to return to this -- that I see no merit in the idea that using tax credits for contractors to implement infrastructure investment will address any of these problems. I called it somewhat inelegantly on television yesterday a Potemkin village of nothing. And I think it is a singularly poor idea whose principal effect will be to enrich those who are the recipients of the credits, in many cases for projects that would have been undertaken anyway, rather than bring about a necessary infrastructure revival.

Thank you. (Applause)

MR. WESSEL: Thank you very much. Entertaining as always. I'm still trying to get my head around the Potemkin village of nothing. One of the disadvantages of no longer being a full-time reporter at the *Wall Street Journal* is I no longer get to take a Larry Summers' speech and turn it into a column and take credit for all his good ideas. Although I have noticed, Larry, that we seem to have reached a point of inflation, because I remember everything always had three points and today you're up to four. (Laughter) I guess that has to do with the quantity of good ideas or something.

But, Ed, let me turn --

MR. SUMMERS: For others to judge.

MR. WESSEL: Ed, let me turn to you. Ed Glaeser is one of Larry's colleagues at Harvard and has written quite a bit about this subject. I read a piece you wrote in *City Journal* a couple of months ago in which you said there were three popular propositions, one that the 21st century business needs the 21st century infrastructure, second, that infrastructure puts people to work, and third, that infrastructure should be a national responsibility financed by federal tax revenues. You said all three of those popular propositions were wrong.

MR. GLAESER: Did I say the first one was wrong? The first one was wrong too? Well, I was on a roll.

MR. WESSEL: Bad editing I guess. So the floor is yours. Is Larry right or not?

MR. GLAESER: Thank you. Yes.

MR. WESSEL: But?

MR. GLAESER: Yes, but just as America's infrastructure needs its full throated advocates it also needs its skeptics, because Americans are not going to get the infrastructure they deserve unless we both propose it and then critique it and then argue over it. And I think that's in some sense what my job is, although quite honestly I pretty much agreed with almost everything that Larry said.

So let me go through. And I think you may have missed the subtext of one of his comments, which is Harvard's economics department really needs a new HVAC system, and it's a great naming opportunity. (Laughter)

The first point that I want to make is that I do want to be a full throated advocate of a microeconomic rather than a macroeconomic approach to infrastructure. And the microeconomic approach is one that doesn't emphasize the sort of larger impact on economic growth, but rather looks at how many users they're going to be, what are the costs of the thing, what are we actually getting in terms of ancillary benefits. I think there are a couple of reasons, three to be precise, why the microeconomic approach has some real strengths, one of which is the magical thinking that can often come with this infrastructure is going to make -- insert your locality here -- Detroit great again, is that you get incredibly foolish things that would never have passed muster from a competent cost benefit analysis. So Detroit's people mover monorail is of course the poster child for unwise infrastructure investment and that never would have made sense if people were actually counting bodies and trying to figure things out.

Second thing, if you have a focus on jobs and macroeconomic effects it leads to infrastructure in the wrong place. The places that need more infrastructure are largely America's growing successful metropolitan areas, it's not West Virginia, it's not the rustbelt. Detroit was built for 1.85 million people; it now has less than half of that amount. It is not Detroit that needs new roads. It is San Francisco, it is New York.

Third, it pushes toward the wrong funding model. And here I agree completely with Larry, that the primary thing should be users should pay. It is an outrage that we expect voters and taxpayers in Montana to pay for the quite wealthy people who take New York's airports. And it also leads to misallocation of resources. But the more that we think of this as a national responsibility it pushes us against the model that says look, the real expectation is for most of this stuff -- drivers should pay for their own roads.

Now, second point is just on the user pay principle on this. I think it's very helpful if you have a user pay principle both in terms of project evaluation, right -- and in fact it leads towards better cost benefit analysis if we're expecting by and large users should pay. There are cases in which this is not appropriate. There will be cases will externalities, in which case we need to find out the right subsidy model. Clearly Larry is not a fan of tax credits, but we need something that comes in in terms of if we think that these projects are going to yield large externalities from this. If we have a case in which it isn't an issue so much of externalities, but rather the average cost is actually way higher than the marginal cost, as in the case of some rail systems, there are creative funding models. And I'm a big fan, for example, of Hong Kong's mass transit system, which funds itself not with higher user fees, but by building skyscrapers atop new subway stops and turns a tidy profit as a result. I'm not sure that I trust the New York MTA to be engaged in this business, but something that ties more closely to property tax revenues near the infrastructure to the benefits, like tax increment financing, is not crazy.

Third point, and again I'm echoing what he said, but one of the biggest reasons we want to have user fees is to appropriately ration the asset to the space. The right to drive on all of America's highways and streets was not written into the Bill of Rights after the Second Amendment. This is valuable space. There's no reason that it should be free for everyone. Singapore has GPS based congestion pricing that they're working on. There's no reason that America should not have exactly the same thing to ration our space. Matthew Turner, who will hopefully say something about The Fundamental Law of Highway Traffic, which is a wonderful paper that he wrote with Gilles Duranton, which shows that vehicle miles traveled increased roughly one for one with highway miles built. If you build it, they will drive it. And unless you actually use prices to ration you just get more and more drives on this space.

I should push slightly back about there are cases in which transportation yields things that look like agglomeration. There are also cases, as in the case of the highway system in which you end up de-agglomerating because of the transportation. So the work of Nathaniel Baum-Snow, for example, shows that each new highway that cut through a metropolitan core after World War II reduced the central city's population by about 18 percent relative to the rest of the metropolitan area.

Point number four, not only does infrastructure need to be paired with better incentives, it needs to be paired with the right institutions. So I want to also make myself a *persona non grata* in the Port Authority of New York and New Jersey on this, and I believe very strongly that just giving money to the Port Authority is foolish. In fact, it does the opposite of what we want to do, which is to get meaningful institutional reform. And I think almost surely in this case it means breaking up this (inaudible). It was a poster child for good government 100 years ago, it is no longer, and there's no reason why those airports can't be separate. In fact, it may well be the right answer to actually privatize some of those airports. Anyone who has flown recently from Heathrow to JFK may think that the privatized Heathrow example is working a lot better than the public example in New York. But that's not a uniform answer. And private provision is not some panacea either. We have a long history of private providers of transportation in this country subverting local governments and extracting the rents from it. So all of the cautions around tax credits and tax credit abuse are correct. So there is a role for PPPs, but it's a role that needs to be monitored, that needs to be thought through. Eduardo Engel's work on PPPs globally gives us a great picture of how PPPs can go drastically wrong in Sub Saharan Africa even though they work in Chile. And you can make your own decision about where you think the U.S. falls between the institutional quality of Chile, which is high, and Sub Saharan Africa in terms of our ability to manage PPPs property.

MR. WESSEL: You want to take a guess where we are?

MR. GLAESER: I leave that up to you, David. (Laughing) The institutional reform is also necessary when we think about Larry's comment about Larz Anderson Bridge. Larry's five years is actually misleading because there were another three years wasted in the planning process before you actually got to that. So in fact it's at least eight years is actually the right thing on it. Now, that's both about bureaucratic issues, but also about a planning process that reacted to perhaps the excesses of the Robert Moses era of mega projects in which we allowed a master building, like Julius Caesar, to go ahead and build bridges across New York and did things that looked very unattractive in some ways, but on the other hand, he got things done. And we responded to this by saying look, everyone has got a say at the table. If you want to argue about which bricks need to be brought in from Maine to make sure that this is historically correct, you have a right to sit at this table and we want to hear your voice. You don't get things done quickly. That's not how World War II was won, and we need to decide whether or not we can tolerate a little less community engagement if we're going to speed this up. Obviously, I've been quite vocal about this community engagement also making America's cities unaffordable by making it too difficult to permit ordinary house.

Finally, point number five. I think almost assuredly the highest returns are to maintenance, and this is an area in which almost assuredly this needs to be done with robust public financing. It's very, very hard to imagine that we're going to do this with -- at least with the current system, with user fees. I particularly like the model that the federal government gets more in the business of actually measuring and then tying highway trust fund payments to maintaining the quality of these roads. But maintenance is job one, it is the most important thing.

Now, there are new technologies where exciting things might happen. So autonomous vehicles make it possible to imagine autonomous vehicle lanes that are user fee financed that are incredible. So I think we shouldn't rule out big projects, but when I think about AV lanes or also autonomous vehicle truck lanes, dedicated trucks going on dedicated lanes, running the big corridors. There is no reason why you can't imagine that this is going to be entirely user fee financed.

Finally, I want to make a plea for the humble bus. Buses are the forgotten children of American transportation. And yet they are the transportation that is often best tied to America's urban poor, to a category of people we should not expect to necessarily pay for all of their transportation. There is an old line than 40 years of transportation economics at Harvard can be boiled down to 4 words, bus good, train bad. And that's partially because there's not a lot that you can do with a train in an urban setting that you can't do if you have a bus on a dedicated lane. And bus rapid transit has been a big success in much of the developing world. And when you think about it, part of the beauty of the bus is it's flexible. You can change the technology as the technology improves, you can make it autonomous, you can reroute the thing. It has this great ability of adaptability, which is highly attractive.

So let me just end by saying I really do agree with Larry, but I want to do so in as confrontational and as hostile a manner as I possibly can (laughter), so thanks for giving me the chance to do this.

MR. WESSEL: Thank you. Larry, let me ask you -- I want to ask two questions and I'm interested in what you think about what Ed said, but first two questions. Once upon a time, not very long ago, you and others advocated for more infrastructure spending as a good way to put people to work. That was then. We had a much higher unemployment rate than we have now, is that part of the argument no longer relevant?

MR. SUMMERS: Good question. So here's where I kind of come to think about this. You can't do large amounts of infrastructure on and off in a usefully counter cyclical way in any world that's remotely like the world of America today. The truth is that the Obama administration would have been delighted to have the whole $800 billion stimulus program be infrastructure investment, that the number that was chosen for infrastructure investment was the maximum number that the technocrats would accept putting in a budget as remotely feasible, and it was thanks to Herculean efforts by the Vice President, was just about achieved in terms of spending in two years. Otto Eckstein joined the Council of Economic Advisors in 1962 and was very impressed by the amount of countercyclical spending that seemed to be going on all over Washington as things were being built, but it was really a huge tribute to the new Keynesian economics. And then he asked a few questions and learned that it was the countercyclical spending from the 1958 recession that was just kicking in. So turning large amounts on and off in substantial projects is not a feasible thing. Turning some on and off, particularly in the maintenance area, is a feasible thing and should be an important policy tool.

There is also I think a legitimate argument, and I won't rehearse it in detail here, on the secular stagnation thesis suggesting that demand shortfalls may be a much more pervasive feature of economic life over the next 20 years than they have been over the last 20. And to that extent there is a case for a chronically more expansionary fiscal policy, which also relates to the fact that in a world with excess savings there will be chronically very low real interest rates. And so I think there is a demand side case as well for more infrastructure investment. I think what should very is less the quantity of infrastructure investment than the financing of the infrastructure investment. When things are strong there should be a gas tax in place, when things are not strong there is a stronger case for borrowing.

So I think the balance of the argument has moved over time and I think the demand side case is a more complicated one. But if Ed basically favors taking a 95-5 micro versus macro view of thinking about infrastructure I would probably take a more 70-30, 70 micro 30 macro view.

MR. WESSEL: And where we sit today, at the beginning of 2017, is this a time when we should borrow for infrastructure or finance it by tax increases or spending cuts?

MR. SUMMERS: I mean you can't really answer that question apart from the context of what's going on in the rest of the budget. If the only major thing we were doing was substantially increasing infrastructure investment, I would be comfortable financing at least a substantial part of it with debt because I believe the extra revenues that the supply side benefits of the infrastructure investment would generate would largely cover the debt burdens. In the context of what I wouldn't favor, but I think is likely to take place, which is trillions of dollars of tax cuts, I don't think there's room for trillions of dollars of unpaid for tax cuts and a very large infrastructure expansion all financed with borrowing.

Look, I think more generally -- I mean something that should be said is there is every reason in the world for a gasoline tax in the United States not to have been allowed to be cut in half in real terms over the last 30 years as the congestion increased, as motor vehicle burden on highways increased, as the salience of carbon emissions increased. We should be taking much less regulatory and much more price oriented approaches to encouraging energy efficiency than we are as a country and a higher gasoline tax would be an early -- and/or a carbon tax would be important steps in that direction.

MR. WESSEL: And how do we decide where user fees are appropriate or not? It seemed to me you mentioned two different situations. One is one where there are externalities, and so the society should pay for the stuff that the users don't pay for. I think that's pretty clear. But towards the end of your remarks you talked about buses and you said -- you implied I think that buses might not pay for themselves with fares, and there are clear distributional issues with user fees. I mean they're sometimes derided as "Lexus lanes" where only the rich people can drive in the low congestion lanes. So how do you deal with that second thing and how do you decide when it's appropriate and when not?

MR. GLAESER: Well, you know, there's an old line, I think it's associated with Marty Feldstein, which is I don't actually need to know where the policy ends up, I just need to know the right direction of it right now. And right now I feel pretty confident that we need more user fees rather than less. But let me be less trite than that.

The case for buses being subsidized is it's not a huge subsidy. It is targeted particularly to the poor. We already are doing it and almost surely should continue to do it. If we wanted to experiment with higher prices occasionally we can do that, but it seems risky on the bus front.

In terms of congestion pricing on highways, the overwhelming issue is not the economics. Economists are sort of, you know, overwhelmingly on board on the advantages of having time varying fees that try to ration the space. The overwhelming issue is the politics. And some politics of this is rational, as people who actually will be losers from this. There is a terrific paper by Jonathan Hall at the University of Toronto who actually shows a way that you can actually turn half of highway of a multilane highway into a priced highway and have you leave the same. So you actually do, for once in our lives, actually have a Pareto game, right, where actually everyone is held harmless. It's a very clever plan.

That being said, typically people raise absolute hell over putting any form of congestion pricing in, whether or not it's rational or not. And remember congestion pricing can be highly progressive in lots of ways. I mean there's a reason why Red Ken Livingstone imposed congestion pricing in London. He wasn't doing it because he was a fan of rich financiers, but he was doing it because he could tax the rich financiers driving and use it to subsidize buses. But the case where this is really doable is on new stuff. There's like an endowment effect that goes on with voters, which is if you show them a new highway that they've never seen before and say this one comes with a price, the shrug and say that's fine. If you take an existing highway that's always been free and slap a price on it, there's bloodshed in the street. So I think the case is whenever you get new highways, whenever you get new road capacity, price it, and whenever you get new technologies, like autonomous vehicles, establish the principle that autonomous vehicles are going to have GPS based congestion pricing from the get go. Justify it however you want, but get it into the system so that people -- you can justify it by safety, you can justify it anyway, but get it in there so we establish this principle and keep it there.

MR. WESSEL: Larry, one final question before I ask for a couple of quick questions from the audience. I've heard the story about this bridge over the Charles River before. I want to get a little specific. So if the Congress of the United States asks you, okay, we kind of agree that it's kind of ridiculous it takes us forever to do anything. Tom Friedman once observed that the Chinese can build a convention center in the time it takes to repair an escalator on the Washington Metro (laughter). What specifically do you want us to regulate differently? Environmental regulations, Davis-Bacon, zoning? What do you have in mind?

MR. SUMMERS: I will answer your question, but I will tell one more story first. (Laughter) It wasn't education for me -- another -- I had a really good LaGuardia story going for a while, which was that if you -- some of you will probably remember this -- which is if you go from the hallway where the shuttle flies into LaGuardia and you go to baggage claim, or where you would get a cab, there was an escalator, there was a sign on that escalator that was placed there on about October 20, 2014 that said escalator under repair, new escalator coming May 2015, implying that it was a six month project to fix an escalator. Just seemed like something out of Nehru's India. I couldn't quite believe it and I went to town with it and the ineffectuality of public sector and all of that stuff. I did learn in my conversation with the Port Authority that that terminal was 100 percent privately owned by Delta Airlines and that whatever my problem with that escalator was, was a 100 percent private sector problem. So I think it is a mistake to leap to the conclusion that the public sector always messes these things up.

Look, I think we have to have less promiscuously distributed veto power in this society. And that is basically a different balance between popular participation and the imperative of moving forward with projects. There probably needs to be less recourse to the judiciary with respect to decisions that are made by elected officials, and there probably needs to be more recognition that nongovernmental organizations which are often viewed as the idealistic voices of the people are often special interest groups as well, albeit ones not focused on the profit motive. I think the Davis-Bacon issues are quite separate from that.

MR. WESSEL: Do you want to take a position on Davis-Bacon?

MR. GLAESER: No. (Laughter)

MR. WESSEL: I'm going to take three questions; they're going to be short because we have to get back on time. There's a gentleman there in the back and then there's a woman here on the aisle, and a gentleman -- yes, him. These three right here.

MR. FREEDLANDER: Hi, George Freedlander. My concerns with all of this are a million, but I'll go to the two extreme ones. One is the problem at the federal level of project selection, which has never been solved sufficiently when you have a federal role. And then at the state and local level there's the problem of the political cycle, which is if I do things on the cheap for now I will get reelected. If I do what is really needed it will be too costly and I probably won't. And a lot of it all seems to come back to return on investment and nobody I don't think has figured out how you measure ROI on this.

MR. WESSEL: Okay. So your first point is project selection, right? Okay. Thanks. Behind you over there. Yes.

MR. RYBECK: Hi, Rick Rybeck. And thank you very much. I appreciated both of your comments about user fees. I'd be interested in your thoughts about what I call the invisible users. So there might be absentee land owners next to a new transit station or new highway interchange. They never use the highway; they never use the transit. They'll get a huge windfall in terms of increased land value from that infrastructure. Should they be paying in proportion to the benefit they receive?

MR. WESSEL: Okay. Anna, there's a woman here on the aisle.

MS. WERTHEIM: I'm Mitzi Wertheim. I come to this from a very different perspective, which is you need to educate the public. I mean if you want to make it politically work, and it's very complicated, they have to understand it. Academics do not write for non-experts; they write in a very small circle. And if you want to get support for making these major changes you need to write for non-expert. And anything that is a process I would suggest you get illustrators to help you do it.

We live in a much more complex world than when I was growing up. There are many more pieces. It's 1000 piece or a 10,000-piece puzzle and you always write about 3 pieces of it.

MR. WESSEL: There's a very insistent woman over here, so I don't --

I'm taking that the intensity of your hand raising means you have a very short question. (Laughter)

QUESTIONER: I think it's short and probative. On the subject of user fees and not all users are equal, I wonder how much Amazon pays to maintain the roads for which all of its product deliveries are based. It seems to me that warehouser out west will probably be using the roads in a state other than the one it's logging. I come from Wisconsin. Kimberly-Clark is a heavy user of the roads. So when you talk about user fees where is the corporate as opposed to the individual user? Where are they plugged in?

MR. WESSEL: Okay. So more questions we're going to have time to answer, so you get to pick which ones you want to respond to. Although, Mitzi, I want to say your indictment of economists is correct, but these two are not guilty of speaking only to their peers.

MR. GLAESER: Many of our colleagues think we should speak a little bit less to the general public and a little more to --

MS. WERTHEIM: But how do you get to the core?

MR. WESSEL: So, Larry, do you want to start?

MR. GLAESER: Larry, do you want to --

MR. SUMMERS: Companies pay user fees when they use the roads. And in fact the ideal schemes tend to cause trucks to pay disproportionately relative to cars and sort of nonlinear with the number of axels. And that would very much operate in the direction you're saying. We try to reach broad audiences; we don't always succeed.

MS. WERTHEIM: Yet, you're still (inaudible).

MR. GLAESER: I think maintenance is the answer to some of this, because if you focus on maintenance you're not going to do maintenance projects on things that nobody is using. The things you're going to naturally maintain are going to be the things that are extensively used. And so if you focus on maintenance I think it tends to drive somewhat better allocation systems.

I think the question of collateral rents, if I can call it that, is an interesting one. I'm told that the original mass transit systems were financed in part the way golf courses and ski areas are financed today. People develop them in anticipation of being able to sell the land nearby. This is an additional argument for property taxation, which is jurisdictions that do that will reap the benefits in higher property values as a consequence. But I think that is something that should be figured into a calculation.

MR. GLAESER: Absolutely. And I would even -- so the property tax would -- even more radically land taxing. So taxing based on the land nearby and the increment of value seems like the right way to handle the incidental beneficiaries.

I want to make a political point though about maintenance. So it's not just an issue that maintenance is the right answer a lot of the time, the politics is part of what is pulling away from maintenance. You get a lot of new press for a new project. So if you're a politician you like the new project open. You don't get a lot of press for maintaining the HVAC system in the school, even though it's probably more socially valuable. So one thing we can think about doing is, you know, trying to shine more light on maintenance efforts.

One of the roles I think that can be really positive for the Federal Department of Transportation is regularly publicizing maintenance efforts that are going and where maintenance efforts are not going on at the local level, and again, tying financing to it.

And, again, just to come back, because it was raised, Larry's point on the axels is exactly right. That in fact -- you know, I can remember once having a conversation with a public official who was a big advocate of public spending for infrastructure, and his line was look, I just want the guys to be able to ship through Chicago without sitting in traffic for an hour and a half. And I stared back and I said I want them to get that too, I just want them to pay for it. And that's really the point, that we all want a better infrastructure for America. We do in fact want a 21st century infrastructure for a 21st century America, regardless of what I said. But in fact what we want is it to be done wisely and we want most of the time the people who use it to pay for it.

MR. WESSEL: Thank you both. Larry?

MR. SUMMERS: What this conversation is making me realize is somebody should with some methodology for every city, every major city and every state, do a calculation of annual maintenance neglect and rank them. And if there was -- you know, it would be like the poverty line. It's not that the poverty line isn't questionable in a whole set of ways, but the fact that there is a poverty line focuses attention on poverty in a way that it never was focused on before there was a poverty line. If there was an annual deferred maintenance burden it would generate attention on this and people wouldn't want to be at the bottom of the list, people wouldn't want to be subject to the attack ads, and it would be something that somebody, entrepreneurial could start, like the Brookings Institution -- David (laughter) -- could start to --

MR. WESSEL: I got the message.

MR. SUMMERS: -- could start to generate --

MR. WESSEL: Ed's already got an app on his phone that does --

MR. GLAESER: I've got an app for that, yeah. And there are great new technologies, like Street Bump, which actually if you put this thing in the cup holder when you drive around the streets of Boston it will actually report to city government where there are potholes. So we've got stuff which can be combined with economic analysis to be a fantastic product for Brookings.

MR. WESSEL: Great, thank you. With that, please join me in thanking Larry and Ed. (Applause) And if I can get -- no break, you guys get up. Newsha, Matt, Dan, and Cliff, can you come up? Take the microphones off though first. Sit wherever you want.

Okay. We're a little behind schedule, so I'm going to talk fast. What we wanted to do was bring together some people who have actually done work in the area of infrastructure to talk about where there is evidence, where there is not evidence, where the things that government does makes sense, and where things don't make sense. Physical infrastructure is a rather broad term and so we have a panel that's one part water and three parts transportation.

Newsha Ajami is a Senior Research Associate at the Stanford Woods Institute for the Environment, the Director of Urban Water Policy at the Water in the West. Matthew Turner is a Professor of Economics at Brown who's written quite a bit about transportation, as Ed mentioned. Dan Wilson on my right is at the Federal Reserve Bank of San Francisco and speaks only for himself and not for Janet Yellen or anybody else at the Fed. And Cliff Winston is our colleague here at Brookings.

And what I've asked each of them to do is to say pretend we had a president of the United States who has a short attention span (laughter) and pretend that he ran for office saying I want to spend a lot more money on infrastructure, and pretend for a moment that maybe this tax credit thing was something that Peter Navarro thought up and will never resurface again, what would you tell them about how we ought to wisely spend the money and based on what evidence. And so I've asked each of them to give us the seven or eight-minute spiel that they'd give in the Oval Office and then we'll have some interaction. And it's putting a lot of pressure on the time to task them to keep to that thing, but I'm going to make you do it

So, Newsha, maybe I can start with you because we haven't talked about water at all and there's been quite a bit of focus on water lately, both the supply of but also the pipes through which it's delivered.

MS. AJAMI: So our nation's social and economic well-being obviously depends on access to clean water, but unfortunately water has been called a hidden infrastructure, partly because people really don't know where the water is coming from and where it goes. Their connection to their water is I open the tap, water comes out, I flush the toilet, water leaves. And they really don't have a very good understanding of what it takes for a water provider to bring the water to you and what it takes to clean it up and put it back to the environment. So this connect actually has led into lack of interest and enthusiasm to invest in the water sector as a whole.

So when it comes to water we talk about some interest in investing in new infrastructure or replacing the pipes, but the numbers that are on the table are very insignificant compared to what we really need to be done. A lot of the water system, the water infrastructure is 40 years or older. They are aging and they are reaching to the end of their lifetime. So we talk about investment, we talk about the money that's on the table, which is insignificant compared to what we need, then we need to be very smart in the way that we invest this money. And when it comes to smart investment I think one of the things that had been promoted a lot is doing asset management, trying to focus on the fact that the infrastructure that we have we can -- we have to be first of all -- I think Larry mentioned something very important which we don't do in water, we generally do -- we are very reactive to fix our water challenges, water problems -- the pipe breaks, everybody goes and tries to fix it -- rather than being proactive, understanding what the challenges are, where are the infrastructure needs and try to invest in those challenges or red zones, situations. Asset management is a great example for that, so a lot of the cities can use this kind of system to evaluate their assets to see where the -- how these systems are working, where is the smart investment within this set of assets that they have.

I'll give you a very good example. The Ross City Sanitation District in the Bay Area, they were having a lot of sanitary overflow issues. They were told that they have to fix this sanitary overflow challenge. They went to their users and said hey, we want to raise the rates to pay for this fix that we need to do to meet the environmental regulations. People did not vote for that rate increase. They went back and tried to rethink. They brought a company, they worked with them, they did some evaluation of their system, asset management, and then they identified what are the red zones, what are the break points that if they don't fix they are going to have a main break in their system. And they actually ended up doing a better job of fixing some of those. They went back to the public afterwards and the public was willing actually to pay for some of those investments that they have made because it was a smart investment. So that's like a very good example of doing asset management.

So when you go beyond that I think one of the things that in the water sector we are a little bit behind is that the sector is sort of shifting and moving, sort of having this paradigm shift, but we are as a government, we are not necessarily sort of reaching that point yet. Like 20 years ago energy sector was there, you know, they had the crisis, they dealt with it, they tried to change the way they managed energy, they changed the ways their policies have been set. We are sort of going through the same shift with water. The drought in California has been one of those issues because access to clean water, access to reliable water supplies have been sort of a critical issue for some of these communities. When you go back to Flint, Michigan, the same situation, you know, you have a water quality challenge, which again brings water back up to the public interest. So there have been some issues going on that people started getting more interested in what it takes to bring clean water to them.

So taking advantage of that opportunity, so we need to sort of think about how we can be smarter again and to use data to manage our system more effectively. There are so many technologies out there, smart meters, using the existing -- actually, not even getting to a smart meter, using the existing data that they collect on people, the amount of water the use, how did they respond to price change, how did they respond to sort of climate variability, how did they respond to different messaging. And try to understand if the demand for water is like changing, in what ways. So using this data to become smarter in the way we manage our water system. And then using that kind of information to see what kind of infrastructure do we really need in the future. So right now a lot of the water utilities think about, oh, big infrastructure, a big dam, big pipeline, big aqueduct to bring water from one location to the next. Maybe the next generation of our water system, our 21st century water system does not require another dam or another aqueduct to bring the water to us. Maybe we need to think more locally, maybe we can replace some of our infrastructure with doing some local projects, such as recycling, reused sort of green infrastructure. Another great example, it sort of has this broad umbrella because when you think about West coast, which has water scarcity issues, green infrastructure can help to enhance some of the water supply issues that we have. It captures the storm water and rain water without getting polluted and uses it for a future need. When you think about East coast -- actually DC is a great example of using green infrastructure to deal with some of their water quality issues. So there are some of these solutions that actually work for both sides of the coast and in the middle, and sort of addressed that issue.

One last thing I really would like for everyone to think about is the fact that I mean you think about water, there is like -- we have put it in different buckets. We have organizations that did the water supply, bring water to you. We have organizations that do waste water treatment, the collect the water, the clean it, and put it back to the environment. We have organizations that they will flood. And these are all different silos that we have created. So this fragmentation actually has caused a lot of inefficiencies in the system. The reality is this is all one water. The same water that we need to deal with floods we can actually be better in taking that water, storing it, reusing it. So when it comes to, you know, again going back to some of these local solutions that we can use, capturing some of the rain and flood water and reusing it. And then when you go back to recycling and reuse, what kind of like demand do we have for water and how that's going to impact the waste water stream and how we can use that waste water stream, which again remember, it's in the second silo, which is waste water treatment, and how can we connect that to our water supply, which is very important.

MR. WESSEL: And if the president said to you sounds good, but I've been hearing a lot of talk about user fees, should we finance the pipes in Flint, Michigan, the flood recycling on the West coast by charging more for water at the place at which it's used, or should I take advantage of the low interest rates that Larry talked about and have a giant national federal water infrastructure project like Eisenhower's highways?

MS. AJAMI: I think both. User fees are very important. We are having this conversation right now in California on some of these user fees. The reality is when you talk about water we are not necessarily recovering the cost of the investment that we need to make for the future. Actually this is a very important issue, which is for every $1 of revenue we have to invest $4 for capital investment to take uptake and future investment for our water infrastructure. So think about it. We are not necessarily paying the amount that we have to for the water infrastructure that we have. And it goes back to the public knowledge. I think public awareness is very important. There is a lot of resistance to our user fees, but as you sort of raise public awareness, try to make them understand, the reality is water is cheap. Think about how much you're paying for your water bill. I mean seriously, people are willing to pay $100 for their cell phones. Every family member in a household has a cell phone and every bill is about that much money. How much are you paying for your water? I mean in my house, single family home, four family members, almost about $100 for both water and waste water. That's nothing compared to what advantages that water brings to you, which is about health, well-being, you know, daily needs. We don't even think about it. But the reality is if the water doesn't come out of that tap, you don't value it.

But I think the quick closing remark on that is in the energy sector actually we had the same thing, but when we started in California we started having black outs and brown outs people realize, oh, I really do need this electricity to survive daily. And people were much more willing to think about what are the next options, do we need to have user fees. And actually we did have user fees in California, which that user fee actually -- key thing to realize is user fees are good if you can really show transparency in the way you're using them. If you can say I take this user fee and I invest it in X, Y, Z, very clearly, and collect data and you can go back to the public and say what you invested on. And the same thing for water. For the energy sector we had this public (inaudible) chart, we had these user fees. They were supposed to be invested in energy efficiency, in innovative energy infrastructure or renewable energy, and also low income communities, which you can help them to pay for some of the high costs of their electricity rates. And actually that really did have a big impact in our energy efficiency efforts in California, which has been very significant in actually understanding where our demand is going to be in the future. Demand management is the cheapest and least expensive way of dealing with future needs that we have for infrastructure. And those fees actually went some of these energy utilities to invest in some of those solutions.

MR. WESSEL: Okay. Thank you very much. Matthew Turner, let's turn to transportation.

MR. TURNER: Thank you. I have a friend who is a fisheries biologist, he thinks fish are really important. And I'm a transportation economist, I think transportation infrastructure is really important. So before I start let me try to give you a little perspective on this. Imagine taking all of the stuff that you buy in a year or that the government buys on your behalf and stacking it in a pile, and then stacking the money that you used to pay for that next to it. That stack of money would be GDP. If you think of assigning those dollars to the factors that made your pile of stuff, about half of the pile of stuff would go to labor, about half of it would be wages. If you think about assigning the fraction of that pile that goes to trucks and boats and trains, it would be about five percent. You can bring that five percent up probably to ten or fifteen percent if you start thinking about commuting costs and the time people spend in their cars, but it is sort of like the self-help books say, the important thing is people, not things.

So with that said, how do we think about how important transportation is? The problem with thinking about transportation as being a small sector is that we wonder -- as Larry said, if we reduce the cost of things can we somehow match up jobs and people and tools and buildings so that we can make ore from less, so that the world works better and we're all richer. That process is hard to observe and we should think about some examples. I think Ed's point that we want to be very careful about thinking which projects we fund is right because not every transportation project is going to have that sort of magic effect of letting us make more from less. So, examples, the Detroit example is classic. St. Louis -- the example of the public transit in Detroit is the classic example of this -- in St. Louis they turn the stop lights off at 6:00 o'clock on weekdays because nobody is using those roads. The problem in those places is that they have more infrastructure than we need. If we put more there it will not let people do things better. It's just going to be more of something that's not used. Another example, and this is something you see in the paper, let's build infrastructure to create economic growth. How might that work? So consider -- I want to think about another example, let's consider improving the I95 corridor which connects Providence, where I live, to New York. And we'll do that, we'll add a lane the whole way and it will mean that you can drive from Providence to New York 10 minutes faster. It will probably cost $10 billion, maybe $20 billion. Let's think about how that might create economic growth. How could that create economic growth? Suppose there is some company, which as a consequence of that reduction in time to New York chooses to locate in Providence instead of somewhere else? What that tells us is that company really doesn't care very much where it locates. If that company is viable only because it can get to New York in 2 hours and 50 minutes instead of 3 hours, it means that those people had some other thing that they could do that was almost exactly as good. And so spending that $10 billion to get to New York in 2 and 50 minutes instead of 3 hours doesn't give us a lot of that magic where we can combine people and tasks a lot better.

Now, if you look at the data on these kinds of things, it is really easy to find examples where that improvement in road connections from New York to Providence will cause some business that would otherwise have located in North Carolina to locate in Providence. That's not creating economic growth, that's not making us richer. That's just changing where production happens. And so when you look at transportation projects, the first effect that you should think of is not that it is creating economic growth, but it is shifting it around.

Now, if we think of transportation projects that way, and we want to apply careful cost benefit analysis (inaudible) project, what should we do? So, first, everything that's been said about maintenance is absolutely right. Maintenance is really good because it means your fixing stuff that gets used. So right away you're devoting your resources to things that are valuable. We have this reveal preference test. Lots of people want to use this stuff, so much so it's wearing out, let's spend money on that. What else could we do? The other thing we could do, right, if adding transportation infrastructure to a place shifts people and economic activity to that place, where do we want people? We want people in the places they want to go or where they're rich. So instead of building roads in places that are empty, where no one wants to be, or places that are poor, build them in Seattle, build them in San Francisco. If you live in Seattle statistically identical workers in Seattle make almost as much, twice as much money as that same worker in southern Texas. So build -- and this is a tough -- this is a heavy lift politically, and this is the opposite -- the stated intention of the stimulus infrastructure package was to build things in depressed places. Don't do that. Build them in places that are booming, right? Right? Because you expand the capacity of those places to house people and people will go there. And there we're not banking on the magic of this thing that's very hard to see and that I'm convinced is small, that infrastructure lets us combine things better and make more from less. We're banking on the fact that we know some places are better at making stuff than others. We can see that; that's easy to measure. That's a big effect. Let's get people living in the places that are good at giving people nice lives.

Okay. So little things besides that. Don't build a light rail if it needs a subsidy. Ed said that build buses. Every time I think that Providence wanted to spend, Providence is a little town and if we're completely honest it's out of the way and not very important. (Laughter) They wanted to spend $100 million to build a small light rail system. If you do the math on that on the basis of the projected ridership -- these are projections by the people who want to get paid to build the thing -- the taxpayer was going to be paying between $7 and $10 per rider after they collected the fares for every single person who got on that train. There's just no way to make that make sense. Buses are the way to go. So train bad, bus good.

Congestion pricing. Congestion pricing is also something that -- we all like that.

Last thing is the seas are rising, the seas are rising. We still have 40 or 50 years before it gets to be a crisis, but if we fight that most of the time we'll lose. Yes, Holland does it and we will be able to do it sometimes, but most of the time we will lose the battle against rising tides. The good thing is we've got 40 or 50 years to plan and 40 or 50 years to plan is a long time in the life of a building. So if we plan an orderly retreat it won't be a disaster. If we stand and fight, I think I know how that's going -- we're going to end up under water.

So another part of this thing to be thinking about is we want to build our infrastructure so that we can manage an orderly retreat from something that we can predict will happen on the coast.

MR. WESSEL: Where's Providence on the spectrum? Is it going to be shorefront property or is it going to be under water?

MR. TURNER: Providence is subject to periodic hurricanes and is only above water because of a massive sea wall.

MR. WESSEL: Another reason not to spend money on a light rail.

(Laughter)

MR. TURNER: That's right. The light rail system would surely be under water in 50 years. Another good reason not to build it.

MR. WESSEL: Dan?

MR. TURNER: Thanks.

MR. WESSEL: So, the president has called you in.

MR. WILSON: So the first thing I would tell the president is just to repeat what you mentioned before, that everything I'm about to say and everything I say today is my own view and does not represent the views of the Federal Reserve Bank of San Francisco or the Federal Reserve System.

So I would start by asking what do we mean, when we're trying to get the highest return on infrastructure spending, what exactly do we mean by the return? What kind of return? Are we talking about a return in terms of GDP or employment or something more hard to measure, like public safety or some other type of longer-run benefit? So I'm going to kind of focus my remarks on the macroeconomic returns. So thinking about GDP and employment.

And so here the horizon that we're talking about, the return, is really important. If we are trying to think of infrastructure spending as some kind of stimulus policy, you know, we're trying to -- this was a question you asked Larry -- trying to think of this as something that could stimulate the economy in the near term. I think the economic research is not very optimistic on that, especially in the current economic environment. And so I think the case for a longer-run positive strong return to GDP or employment from infrastructure spending is stronger, and I'll come back to that. But in terms of why the short-run impact I think would be likely to be quite low, there's three reasons.

So first, theoretical research over the last 5-10 years has pretty consistently come to the conclusion that the short-run economic multipliers, so the bang for the buck on government spending in general and not just infrastructure but any kind of government spending, tends to be much -- or would be expected to be much lower in expansions than in recessions. So this is basically because when you have massive government spending it tends to crowd out private sector activity. And when you have an expansion you're already at capacity constraints, and so that crowd out effect is going to be bigger. So the theory is sort of pretty clear, that the multiplier is going to be low and expansions on government spending in general, the empirical evidence that I've done in papers I've worked on and that I'm familiar from others, the empirical evidence on the short-run multiplier to government spending, and especially to infrastructure spending also suggest that it's low in expansion, so this is the short-run bang for the buck. So I did a paper a few years ago with a colleague of mine, a former colleague of mind, Savon LeDuc, for the MBER Macro Annual Conference, and we were looking at the dynamic path of GDP and employment in response to shocks to infrastructure spending. So we were looking specifically at the experience of states and how states get different amounts of federal funding for highways from the federal government. We want to exploit the variation across states to say when you get more do you do more, do you get more in terms of GDP or employment in the near-term and over the longer-term.

So what we found was that on average, you get a shock to federal highway grants to funding for projects, it led to an increase in state GDP immediately in the first one or two years after that shock, but then it faded away. And then you got this second round effect, like six to eight years later. So I'll come back to that kind of second round effect in a minute, but in terms of the near-term effect, so we found that that was there on average. But when we looked at whether that effect was different depending on whether the state was in a recession or expansion, we found that the effect was entirely from recessions. So basically if you're in expansion we found no effect on GDP or employment in the near-term from this shock to infrastructure spending. Again, that's aside from the longer run benefit or the medium run benefit that we did find.

So the third reason why you might expect the short run multiplier bang for the buck to be small from infrastructure spending is at least if you're thinking about employment infrastructure modern transportation projects tend to be not very labor intensive. So research I've done also work I've seen from others, including the GAL, has found that the labor share, the cost of labor in major transportation projects is small. So these tend not to be very useful as a jobs stimulus, at least in the short run. Now, I mentioned that we found that there was a bigger impact say six to eight years after some initial funding increase in infrastructure spending. So that effect, that kind of down the road effect, was quite sizeable and it didn't seem to matter whether sort of what the state of the economy was when the funding started. So there's a sort of stronger case to be made for infrastructure spending having these longer run or medium run benefits. And those benefits, that's true for employment and GDP because those benefits are basically a supply side shock. What happens is, in terms of kind of the macroeconomic theory, the thinking is that you have long time-to-build lags with infrastructure spending. So you have a lot of construction activity happening over many years, but there's no productivity benefit to the private sector until many years later, say on average six to eight years for a typical kind of transportation project. So when the public capital comes on line, you've been investing in this for several years and then finally you have new bridge, new highway, or whatever, that's when you get the supply side benefits, the productivity increase, the private sector in general becomes more productive because you have this improvement. And so that's certainly there and I would say that if that's the goal, if you're trying to get a high return in terms of these longer run or medium run economic benefits, then I think there's a strong case to be made.

So lastly I would just say that in terms of the -- if we're thinking about -- we're going to infrastructure spending, so if somebody says to me we're doing infrastructure spending no matter what, just tell me where's the highest returns. I guess one thing I would say is that putting the money through state and local governments to me seems like the appropriate way to go because -- and this is some other research I did about how whether state and local governments actually spend the money that they get from the federal government on transportation on transportation. So there's been concerns -- there were concerns in the 2009 Stimulus Act that the money the federal government was sending to the state and local government for transportation was not going to be spent on transportation, that it would be used to pay down debt, to be used to finance tax cuts or prevent tax increases, be spent on other things. So we found -- again, a paper I did with Savon LeDuc -- that the states actually did spend the money on transportation. And in fact it led to complementarities leading them to spend even more. So get $1 in transportation grants from the federal government, ended up spending even more than $1 over the next few years on transportation.

So states maintain these lists of projects that they would like -- essentially wish lists, so they're well positioned to spend that money that they get and it seems that empirically they do spend that money on transportation.

MR. WESSEL: So why should I believe that the federal government is incapable of ranking transportation projects in order of their value, long-term returns, but somehow state and local governments are enlightened and will not be influenced by politics and will do the stuff that's -- where it's better?

MR. WILSON: Well, I'd say that traditionally we have in our highway bills, we've paid for the nation's roads through federal highway grants to states, and so that system has been in place since the interstate highway system. So because of that system states maintain these lists, they try to identify projects they would like to work on and as they get funding they work on those projects. So it's just that I think we have an existing system in place to efficiently spend that money. So having the federal government choose projects --

MR. WESSEL: But you have confidence in the state and local governments making efficient choices?

MR. WILSON: As much confidence as the federal government making those choices.

MR. WESSEL: Fair enough. Cliff, your turn. Donald Trump just called.

MR. WINSTON: Okay. So I am going to mention five considerations to think about transportation infrastructure, and then after laying those out I'll turn to the project that will take those five considerations into account. And I'll be constructive actually to say this is a good thing that we ought to spend money on.

So the first one, and I'll make dense communications since we've covered all these things, I'll go very fast. First one is cost benefit. That's obviously critical in my world. I want the benefits to exceed cost, and this is a problem in transportation infrastructure, the system is not designed to do that. As we know money is allocated by formula. So the federal money goes in but it's obviously not necessarily going to those areas in the country that will generate the highest return. Everybody gets in on it and there's certainly no cost benefit consideration that goes there. Then once you go inside the state it gets even better because then the MPOs are going at it. And again, it's not just going to those parts of the state that would generate the highest return. Everybody gets in on it. And so you have those constraints immediately built into the system. And add on some other regulations on capital labor and really you're not going to expect the way the whole thing is designed that you're going to get many projects where benefits exceed costs.

That said, second consideration is that the thing has to be politically appealing and popular. As I said, this is a politically pervasive system and if I'm going to suggest a project, somebody is going to have to say what am I going to get out of it. And that's pretty much how it all works. And pointing to projects that get completed as opposed to maintained are good things that help you get elected because you could say this is what I've done for you, and especially with a really good project that generates a lot of benefits. You're wondering what that possibly is. You'll have to wait.

Third consideration is technology. A critical part of infrastructure in this country is it's not up to date with technology. There are many things that could be done, off the shelf technologies. Engineers are chomping at the bit, saying do this, do this, it will make it so much better, and it's not done because we have status quo bias. That's how things work. We do it this way, we're not going to change how we're going to do it. So I want to come up with something that's technologically new. It doesn't have to be super advanced, but it's something that we haven't done before, but there's a very high technology component to it. To sort of illustrate, here's something we can do that takes advantage of technology -- and by the way, after you see how cool this is let me mention a few other things.

Fourth consideration, which has been mentioned a lot, is the suboptimal pricing in investment. So again the system is not designed to be efficient, but in a very, very distortionary way, the prices are inefficient, below marginal cost, investment is not done based on benefit cost analysis, and that really skews where money goes. So in a sense you're defeating yourself. Often times you're not making the best use of capacity. I want, again, a project that's going to illustrate the importance of suboptimal pricing investment in creating so many of the distortions that we have now.

Quick footnote now. I want to talk a little bit about the macro and micro. There's the impression that there should be some sort of conflict, or at least there is a conflict. There shouldn't be. All the micro concerns about efficiency benefit cost analysis, so on and so forth, those should reinforce and be consistent with the macro perspective on how we pursue infrastructure. In other words, ask the following macro question, suppose I have a given amount of money, and I want to increase employment. What should I do? Subsidize output, subsidize capital, or subsidize labor? So I can hear your brains working, you're writing down a CES production function, you're taking derivatives, you're trying to get the input demands, and you're trying to see for what parameter values -- is it going to be that for the given amount of money I'm going to get more employment with subsidies to labor, subsidies to capital, subsidies to output. Whatever the answer is the distortions that we have in capital are going to really hurt the capital infrastructure subsidies to try to solve this macro problem. So my point is, if the macro and micro are consistent then macro will perform better and that's how we really want to sell trying to improve employment through capital subsidization, but by now, given how we do things, it's going to be the worst.

Final thing, privatization. When I mention the word privatization I do not mean public-private partnerships -- I do not like them -- I mean competition. That is what this is all about. You want to get good results, you want private entities to compete. You do not want them in partnership with government, then they get together. That's not competition. So I want to think about a way of exposing the importance of privatization.

All right. So those are my considerations. What's my project? I want two more minutes or I won't say it.

MR. WESSEL: Okay. (Laughter)

MR. WINSTON: I'm just kidding.

MR. WESSEL: You have two minutes and forty-seven second left. Don't waste them with one-liners.

MR. WINSTON: My project is heated runways at major airports along the East coast and the Midwest -- heated runways. And, since I'm spending money, let's heat up the tarmacs in the terminal areas too.

Now, what are these things? You think about them, they are exactly what I say. You've heard of heated driveways. Certain people actually heat their driveways, click these things on, the snow comes down, there's no snow accumulation on these things. Green Bay Packers football stadium, they have a heated field. They're not playing the ice bowl anymore. Here, runways are exactly the same thing. You a snow forecast coming, you crank the thing on, it crawls underneath, there will not be a single millimeter of snow accumulation. I mean it hits, it's going to melt. And so you're not going to have two feet of snow accumulating or one foot, or all you need in this part of the world, three inches (laughter), that's going to mess things up. That's it. Now, why is this good? Benefit cost, right. It's the delay savings are enormous. And that's right because when you have delays they turn into cancellations. So the cost to you as a traveler starts multiplying through because then you have to get your next flight. That can be hours, sometimes days. These are wealthy people, high value of time, you can just see things toting up. Cost to airlines -- remember their planes are stuck, their capital isn't moving anywhere, it's not where it should be out on the West coast or wherever. So you put all that together, you trade that off with up front capital costs, which aren't that much, operating cost which even are less, you're there. Politically, totally a winner. Who's going to be opposed to this? Technology, not the coolest thing in the world, because as I said, you know, all you know are one percent -- you know, all the one percenters, they have heated driveways. We could have done this decades ago. But it's still something that's new.

Pricing investment. What's our problem with runways? Weight based landing fees. Beyoncé, Jay Z, they come into see the outgoing President, the CEOs come in to see the new President, they're in private planes, they pay nothing. We commercial people have to pay a lot more. So that's putting a lot of pressure that our heated runways can address, but of course the distortions in pricing investment are adding to the problem.

Finally, last but not least, and this is the punch line of the whole thing, privatization. Reverse the question. The President says to me, well, this just seems kind of an obvious idea, why don't the public sector airports do this? What incentive do they have to do something like this? Seriously, why would a public sector airport, which certainly is not in the business of maximizing economic welfare -- you can blame the way the system is set up, you can blame the kind of managers that they have, they're not going to say we want to put these things in and save travelers time. It's going to cost us money and what are going to get for it, right, because the landing fees are regulated. They're going to get their weight based landing fees. Yeah, they get a little more through put, but let's face it, financially they're not that much better off and they'll say we'll get our money anyway. Consider the private sector. Suppose we privatized Logan, Hartford, Connecticut, Providence, Rhode Island, New Hampshire. You don't think one of those airports would say hey, let's put in a heated runway and we're going to charge people for it? Just think of the benefits they would get from doing something like that. I have no doubt if we privatized our airports initially as the markets works, someone would experiment with these things, they would realize yes, people realize the value of a heated runway, we're going to charge them for it. There are ways we can work this thing out. And lo and behold the others will say, we better do this too because it's killing us financially because people will come and use these guys there. The only reason not to consider this is if we truly have global warming and we're not going to get snow anymore. (Laughter) But, Mr. President, I really don't think this is a Chinese hoax. (Laughter)

MR. WESSEL: Thank you. Thank you, Cliff. (Applause)

Newsha, I want to ask you to respond to something that's been said a couple of times, which his let's not waste a lot of money in Flint, Michigan because basically those people would be more productive if they moved to Seattle. Is that something that -- how do I square that with your telling me that we have lead water pipes all over the country and we ought to spend money, maybe charge user fees where we can, to replace them, even in cities where we're losing population?

MS. AJAMI: First of all, it's really hard to move a community from one location to another unless you really have jobs ready for them and can move them there. If you don't have skills, you can't really move from one place to another. So that definitely is not going to work. But think about it this way, you have communities that are really in need and you have communities that are capable of covering the cost of the services they need to get. And there is enough option to try to kind of take some of the federal money maybe to invest in the communities that really do not have the means to deal with their water infrastructure challenges, and not necessarily send as much money to the communities that do have this kind of capacity, they can deal with their own challenges. And I know this might not be a very popular statement or, you know, I'm not necessarily an economist, so I'm just saying from a social perspective that might be a way to go.

One thing I want to mention though is one -- these systems that we have in place they have fixed costs associated with them. Maintenance and operation is a fixed cost, that even if you don't use a drop of water, that's maintenance and operations system has to go on. So it's very important to remember that the way there are already sort of the economics that's used to right now price water is the opposite of what we really need. For every drop of water you pay $1, imagine. Obviously you're not paying that much, but for every gallon you are paying about like $.40. You stop using that gallon, the person who is operating and maintaining that water infrastructure still needs to pay for that system. So connecting the revenue to the amount of water people use, it just doesn't work that way. One thing that the energy sector did that we are really talking about a lot right now in the water sector is sort of restructuring the rate the process, decoupling it. So trying to disconnect the costs --

MR. WESSEL: Right. So you say basically we should pay for water the way we pay for electricity. You pay some fixed costs against a variable cost.

MS. AJAMI: Yes.

MR. WESSEL: So the two things you would tell the President is, the economists may tell you to abandon these declining cities, but socially you think that's a bad idea and you're willing to subsidize Flint and let the people in San Francisco pay a little more for their water. And, secondly, if pricing transportation is bad and pricing energy is less than ideal, pricing water is even further from the ideal.

MS. AJAMI: Right.

MR. WESSEL: Okay.

MS. AJAMI: Can I actually add something?

MR. WESSEL: Please.

MS. AJAMI: I mean we talked about transportation this whole time and something that I want to mention is you want to build new roads, bridges, a new runway, think about water while you're doing it. Be smart in the way you invest your dollars. If you think about collecting some of the storm water that lands on that runway has a seated system --

MR. WESSEL: Perfect. You can --

MS. AJAMI: -- then you can all have two things.

MR. WESSEL: And if we have a smart power grid we can move it to San Francisco. If any of you guys want to weigh in on any of the things on transportation; I want to go to the audience. I don't have too much. Is there anything you want to add, Matt, or Dan? You like heated runways?

MR. WILSON: Sounds good to me. We don't need them in San Francisco.

MR. WINSTON: Yeah you do. Of course you do.

MS. AJAMI: I don't think so.

MR. WINSTON: No, you need people to come to San Francisco.

MR. WESSEL: See, in other words, what Cliff is telling you is if we get a half of inch of snow tonight in Washington, you may not get back to San Francisco, so you should be willing to pay for that.

MR. WILSON: That's fair.

MR. WESSEL: All right. Let me turn to the audience. There is a question very far in the back there, Brittany, please.

MS. GORDON: Hi, Tracy Gordon from the Urban Institute. The previous panel, and this one to a certain extent, have kind of punted on the question of politics, but of course the politics and economics of transportation infrastructure and other infrastructure are very, very important.

So I have two pet ideas that I wanted to put forward to the panel and I wonder how you would react to them. The first is this concept that mayors don't run on infrastructure. I've never really understood, because if the value of infrastructure is reflected in property, as Ed Glaeser mentioned with these skyscrapers above transportation in Hong Kong, then mayors should be out there saying look, you know, I'm doing deferred maintenance, isn't that great, it should be increasing property values and homeowners should be chomping at the bit to reward them at the ballot box. So I don't understand why there isn't more disclosure and perhaps the federal government could do something to lean on state and local governments to do that.

So there was an accounting rule, GASB 34, that came out a couple of years ago that state and local governments were opposed to. And perhaps the federal government could provide some kind of coordinating mechanism for those kinds of disclosures. So I would love your reactions to that.

And then, secondly, this idea of veto power being distributed. That's certainly true in local government, you have a lot of political fragmentation. You often have to get approvals not just from local boards of concerned citizens, which I think was sort of the tenor of the comment earlier, but actual counties and cities and special districts that overlap. So why can't the federal government require local governments to kind of get all their ducks in a row before awarding say TIFIA funds or other kinds of discretionary money?

MR. WESSEL: Thank you. Over here. Brittany, why don't you come over on this side?

QUESTIONER: Hi, Steven Hendrickson. So it seems like the theme from this panel and the discussion earlier is that we need a big increase in infrastructure investment, but the reasons that it's publicly popular aren't actually good reasons to invest in infrastructure and the real important long-term reasons aren't necessarily that important to the public. So going back to David's premise that you're informing the President-elect on, how to sell a large infrastructure investment, is it better to try to leverage what the public seems to care about and do it in sort of a good governance sort of way? Or do you need to educate the public on why we need to make long-term strategic investments that for some reason don't seem -- the pothole argument doesn't seem to kind of resonate with people the way that jobs and sort of jump starting the GDP do.

MR. WESSEL: I think we're going to talk more about politics later. There's a gentleman right here and, Brittany, the guy in the back.

QUESTIONER: Henry Hetger, retired government. The situation like at Lake Mead, the question with Ms. Ajami over here has been becoming critical in the effect that the water level has dropped to the point where not only is the question of sufficient water supply for the area, but also to power electricity generation. It has never been as low as it has been. Recent rains have occurred, but I don't know how affected Lake Mead is. Is there a possibility it could be converted to a cistern, put a giant roof over it or portions of it, and then the evaporation rate would be greatly decreased and the water supply would be more constant?

MR. WESSEL: The guy in the back.

MR. LANE: Just on the --

MR. WESSEL: Tell us who you are please.

MR. LANE: Charles Lane, *Washington Post*. One thing nobody in either panel has yet discussed, although I'm sure they have thoughts about, is the idea of an infrastructure bank, a federal infrastructure bank. And given all the questions that have been raised about the efficiency of financing and choosing projects, if anyone has a thought on that I'd be curious.

MR. WESSEL: Thanks. I think just to respond to one question about leveraging what the public believes, just a warning, that when you tell the public that something is going to create a lot of jobs and it doesn't -- NAFTA -- you end with long-term costs. So that's just my two cents.

Infrastructure bank anyone? Or you want to take something else?

MR. WILSON: Can I just follow up on that?

MR. WESSEL: Yes.

MR. WILSON: Because I think that addresses like the first two questions about the politics of it and the timing. You know, this is what I was saying before, the short-run effects seem to be small. So it is going to be damaging in terms of the long run politics to try to sell infrastructure as a near-term stimulus. And I think that gets to some of these -- like Tracy's questions about politics that a mayor or a governor or a president trying to sell the public in an infrastructure plan now, the political economy problem is that the benefits may not come for many years in the future, and that person is out of office by that point. So they have to be very -- so maybe this gets to the second question, that you need to educate the public of what is the point of this, what is the benefit of this to be able to sell them on something where the person selling them is not necessarily going to be in office to take credit when the benefits happen.

MR. WESSEL: But it seems to me the deferred maintenance thing is a really frustrating one. All of us who live in Washington, DC are very aware the cost of the deferred maintenance in the Washington Metro doesn't lead any of us to want to give more money to the Washington Metro. And nobody ever was willing to pay for an escalator that didn't break. It's very hard to illustrate to people the values of that. So it seems to me that does take extraordinary foresight and leadership of politicians who tend to be rather short-term.

MR. TURNER: I think the guiding principle is one that both Ed and Larry spoke to, I think it's important to connect the cost of services with the price. So you want people not to get stuff, you want people to pay to use things, something that reflects the cost of providing the service. And to the extent that you make funding mechanisms complicated and not transparent, it makes it harder for that to happen. So I think the rule should be to make funding mechanisms simple and transparent, and as people propose institutions and funding mechanisms that are broke, that those are things that you should look at with suspicion because it makes it harder to untangle the relationship between what people are willing to pay for a service and what it actually costs.

MR. WINSTON: So I'm going to say two things. One, I want to get my point of my presentation across, because I'm now concerned that people missed the point. I listed some basic considerations to justify a project that are all met. There are hardly any things like this. And my punch line was there's no way the public sector would ever do anything like this. So there's no way I'm going to say that we should increase infrastructure spending, not in this political system. This is the whole point, the system is so inefficient, it is so riddled with status quo bias everywhere you go along the line that it is not serious to think about reforming this in an efficient way. This is not an accident that it's this way, this has built up for decades. And there are very powerful interests along the lines as well as just status quo bias to do it. Now, you know, something like an infrastructure bank, this is the kind of thing that's sort of thrown out, you know, what about this, what about that. What problem are you trying to solve as opposed to what problem are you going to continue to feed into? An infrastructure bank is just going to be more of the same. We're not going to be improving efficiency with this thing. In other words, in terms of where the resources are allocated or how the operations are run in terms of pricing them better, or how new technology is put in. None of that is going to happen. This is what we are dealing with.

Fortunately, and this now is back a month ago, we had a program on autonomous vehicles, the private sector is coming through with innovations that are going to improve the performance of the infrastructure. In the process they really may expose the vast inefficiencies of the public sector and the things that they could have done but haven't done. But we will see. But fortunately that is where things are moving and that is where we can see improvement. But we will never see them, at least in my lifetime, in the public sector. And all these sort of simple things are just not addressing the fundamental problem.

MS. AJAMI: Can I add something?

MR. WESSEL: Please. Last word, but short.

MS. AJAMI: Yes. Infrastructure bank. I talk a little about going back, so actually here -- last year we started having this WIFIA, which is similar to TIFIA, which is supposed to work for water. And the lowest margin for the communities to get access to this money was $5 million. There are a lot of innovative water projects out there, such as recycling and reuse, on site reuse, or this storm water project, green infrastructure. That they never fit that $5 million limit. So you never even get to that threshold ever to be able to access this. So it doesn't matter if they say infrastructure bank, green bank, WIFIA, anything that we put out. We need to be more forward looking in the way these are set up. We need to think about what is it that we need in the future and how do we need to set up these financial system or mechanisms that would address our 21st century problem rather than trying to solve a 20th century problem, which we don't have as much anymore or we don't want to even do anymore of that.

MR. WESSEL: I think one thing that comes through all your presentations is that we should be careful that we are solving -- we have solutions to the problems we have. And if we have trouble raising money, that's something the federal government does well. If we have trouble having highest return projects, that's something the public center doesn't do well. If we have a shortage of jobs, we know that macroeconomic policy can do something about it. But building infrastructure that takes 20 years to build is probably not going to have a short-term return. So I think if there's one thing that comes through all your things, as you said, Newsha, is make sure that the solution you have fits the problem at hand.

With that I'm going to dismiss this panel and invite my colleague, Louise Sheiner, up here to move us to human capital investment, both private and public. I encourage you to stay for that and then we'll have -- if you stay for that you get a free lunch. (Applause)

(Recess)

MS. SHEINER: Okay. So, now we are going to turn to a different kind of investment. And we wanted to combine these things, when we think about what -- if this is a very good environment for trying to undertake investments that raise productivity growth that will raise future living standards. You know, everybody thinks investment means roads and bridges, and we think that investment, it can be much broader. We want to also think about human capital.

And in fact, this next session thinking about human capital in a way that it's traditionally not viewed as investment. And so, we are going to have a session later on education, education people think: oh, of course, you know, we've got bridges and we've education, those are both human capital. This one is about: well, maybe some of the things that we think of as just spending to help people out, you know, maybe if they go to low-income families, they actually might have quite powerful effects on the future.

And so, that’s what we are going to explore here. So this is thinking about transfers to low-income families, and what impact might they have. And what does the research say about the impact that they have on future living standards on growth and productivity?

So, I'm going to invite Kristin Butcher to come to come up, and review the evidence for us. And then Greg Duncan will come and respond, and then we'll have a discussion. Thank you so much.

MS. BUTCHER: Thank you. I'm Kristin Butcher, and I'm going to be talking about: Assessing the long-run benefits of transfers to low-income families. As we just heard, we are used to thinking about government investments in infrastructure, maybe even in research, as something where there are upfront costs. There is a nice picture of the big dig for my back of the woods in Boston. It looks costly. But then maybe having long-term benefits in terms of increasing productive capacity and helping workers to get to their jobs, and goods to get to market.

There's a picture looking a lot more productive capacity, like. But we are really not used to thinking about transfers to low-income families in that way, mostly we think: I'm here to tell you children are cute, and their suffering is acutely painful to watch. And so we think of the transfers as something that maybe ensures current consumption. Make sure it doesn't get too low, and make sure that that suffering is not too cute.

But, could these be thought of as investments in human capital? Do transfers to low-income families actually change the productive capacities that the children in those families attain when they become adults? And in this way, are they then viewed, like those investments, as something that has an upfront cost, but there may be a long-term benefit, and perhaps even the benefit is greater than those costs.

So, these are certain domains of investment that we might -- or transfers that we might think about, and think about what's the scope for these to be actual investment. So, cash, obviously, provides more resources, and maybe that helps buffer families from financial strain, and the all the related stresses there. Things like food and nutrition programs, the biggest one of which would be the SNAP Program, the Supplemental Nutrition Assistance Program. Perhaps that ensures good nutrition at critical points in development and, of course, it provides more resources, more generally.

And then we also might think about health insurance, that ensures, or potentially ensures access to health care, and those things can either prevent or treat ailments as they arise, and of course it provides more resources.

And then, finally, housing is the other domain that I'll talk about. That might ensure a safer environment, no lead paint, no asbestos in the walls, which we know can lead to long-term health consequences. And it might change -- allow families to live in a better neighborhood, and of course that provides more resources for families.

So, there's a growing body of research that shows that there's a link between these early life environments and later outcomes, and so people tend to break this down into different periods, the *in utero* period, which is characterized by the fetal origins hypothesis, which I'll talk about a little bit more. The neonatal period may be particularly critical for the development of some different types of capacities. Or just a place where there might be sensitivities, and therefore those developments might malleable, those capacities might be malleable at those points; and then early childhood and later childhood.

And research has tied these things to different types of capacities that seem to be developed at each of these points. So, the fundamental neurological architecture that we all carry around with us seems to be developed quite early. Things that are insults to the fetus quite early in development seem to show up fairly profoundly later in life. Cognitive skills have been shown to be malleable pretty early in childhood, and then non-cognitive skills seem to have some malleability even a bit later through adolescent development.

I just pulled out a quote that illustrates the plasticity of human development. I must have been cold when I was doing this, because it's all about sweat glands, and basically this is from Dave Barker who is the father of the Fetal Origins Hypothesis, and it basically illustrates that we are all born with approximately the same number of sweat glands, and in that zero to three age, if you are in a warm climate you develop the capacity to use them more. If you are in a cold climate, you don't. And then ever after, if you go somewhere hotter you are going to be better off, because you can cool yourself down, if you were raised in that hotter environment.

So, people think that there are many other capacities of human development that might malleable in this way. And there's starting to be a very large body of literature that ties certain stimuli at different points in development to these later-in-life capacities. So, there's as huge literature that's reviewed extremely well in that Almond and Currie piece, about the fetal origins hypothesis, and it goes through different types of stimuli; nutritional insults that might happen, infectious disease, and maternal stress.

And all of these, I don't have time to go into the details, although I love the details. But all of these are sort of melted on a really rigorous platform of trying to find out when there's a group that is a treatment group and a control group. So, you are not just saying: Is it bad for your mom to be in an earthquake when she's pregnant with you? I think we all think, yeah, I don't need to be that convinced.

But then trying to find a group that is really, really similar, that just has not undergone that same stimuli. This body of research is large-growing and very compelling, that there something that happens. There is evidence that even later in life, again, using these rigorous sort platforms that there's a connection between what happens early in life, and later.

And it is, of course, plausible that poverty can affect nutrition, disease and stress in ways that could be deleterious *in utero* and in later time periods in childhood. But the big question of course is: can transfers actually, meaningfully alter these environments in a way that can affect these long-term capacities? And then the follow-on question of that is of course: Are those benefits that accrue down the line, greater than the cost of that upfront investment?

So, why might transfers not help these long-term prospects? Well, the transfers, of course, would just not be large enough to meaningfully affect the childhood environment. And parents might undo the transfer in some way. So, they might reduce their labor supply, and if you give somebody a dollar they might work a dollar less. Then of course it depends entirely what they use that time doing.

So, if they use that time talking and reading to their children, then that might actually be a benefit; but if you look at the thing in the short term it's going to look like it didn’t do very much, because the total resources available to the household are going to remain relatively unchanged. I'm talking theoretically at the moment. There's a large and vast empirical literature that tries to look at all of these links.

So, lots and lots and lots of research; economists are obsessed with two questions. Are in-kind transfers the same as cash? That depends entirely on what the family would have done if they had cash. So, if you give a child a vaccine, then if the family was going to give that child a vaccine anyway, you’ve just handed them the cost of that vaccine as cash, and it's all very fungible. If they wouldn’t have done that, then you’ve fundamentally changed something.

And then there's also corresponding the vast literature on what are the labor supply effects of transfers. As there's a quote in economics, it's usually unattributed, and it says, "How do you summarize economics? People respond to incentives; the rest is commentary." But then, there's also a question of: how much do they respond? And if you are interested I will refer you to these volumes that I was going to -- I think in the interest of time I'll skip that.

Here is just one example of why we might think that there are some big labor supply effects, and other effects. So this is a picture across that horizontal axis. There's family income measured as a percent of the poverty line, and on the vertical axis is the share of children who are covered by health insurance.

And the different colors correspond to the different years. So the pink line at the bottom is 1987, and up at the top in the teal, I believe that is, we've got 2012. And what we see is that with the expansions, and Medicaid, and the state children's insurance program, we are doing away with that enormous dip that happened right around the poverty line in 1987. It doesn’t take somebody who is like an incentives mastermind to think that maybe families who are approaching that cut-off point and we are worried about being able to cover their children with health insurance, it might have had some labor or supply effects.

And indeed the literature that exploits that variation across states and over time, finds that low-income women are more likely to work when their children are not going to be -- being insured as they do that.

So, the other scenario, potentially, in the poverty trap, is not only are these sort of concurring offsetting effects, but maybe it's the case that low-income families, the parents build more capacity through working, to learn on the job, and if you are not working then you should have kept it that way, and then potentially even worse, maybe there's an intergenerational transmission of welfare dependency.

We are starting to see some really interesting results coming out of the Scandinavian countries; all social scientists are pining for the (inaudible) these days, because those countries have this incredibly rich data that are linked across generations and across massive administrative datasets that really allow us to get into this scenario. Here is some evidence that when the family of origin has access to disability insurance. In this case, if the later generation is more likely to participate in that. And it's based on random assignments to judges who are adjudicating those cases. So, it's pretty good evidence that it's actually causal.

Now, what are the challenges to us understanding the long-term effects of the safety net that we have? There are two sources of those challenges. One is data, and one is that correlation is not causation, which I think is in my economist licenses, that I have to mention that whenever I can.

On the data front, if we want to see the long-term impacts across the range of these domains, we are going to have to wait until people are age 25 to look at completed education, something, you know, completed fertility, age 35 to 40 perhaps, peak earnings, something in the 45 to 50 range. You get the idea. You are going to have to wait a long time to see whether these things manifest as having benefits across a wide range of domains.

So, if you just look at this brief data of our big kinds of programs, only two of those that are up there are older than I am, and so, hopefully we'll have to look for a while to see the impact on mortality. And then the other issue is that even if we had a wonderful dataset that connected what was happening to you when you were young to what your later-in-life outcomes are, we need to worry: why did you get that?

It's not enough to say, you got a transfer when you were young, and therefore now, you know, you are doing better or worse, because we don't know why the people got that transfer, and we really need to know -- we need to have some way of saying: Is this person doing better than they otherwise would have? And that's where we need the; you know, micro economist toolkit which really consists these things, of randomized control trials, flip a coin you get it, or you don't.

Differences and differences where we are leveraging the fact that a lot of times these policies get rolled out over different geographies over time, and we can say: Hey, the people in this state can stand in for what would have happened to these people had they not gotten access to this program. And I won't talk about regression just continuity of design.

Okay. In the two minutes and four seconds I have left, I'll talk about these very recent research papers that are going back to the dawn of our current social safety net, and saying: what do we know about the impacts that these have had on the children at the times of long-term capacities? And interestingly in the last year, there have been papers that have come out across all of these four different domains.

All of these are based on a really rigorous research design where there's plausible treatment and control groups, so you can say, and you can plausibly say, that this effect of the program. So, this paper by Aizer et al. reaches back to the mother's pension program, in 1911 to 1935, they looked at people who applied for this program, so these are all people who declared themselves to be in need. These are people, the eligibility was basically, you had to be low-income, and a window, or having been abandoned by your husband, and you had children.

And they look, many years later, at the people who received it, and the people who were initially screened as being eligible, but then for some reason along the way, it was discovered they had more resources and so they were not eligible. And they make comparisons. And you can see that across a large number of domains, they find that these people who received this, compared to close matches, who did not, are doing better in a lot of domains.

Diane Schanzenbach is here in the audience, there's a lovely paper by her and Hillary Hoynes and Doug Almond, that looks at the initial roll out of Food Stamps and SNAP, that was done county by county, and they can look at people who were in counties, and got higher fraction for their zero to five years covered by food stamp accessibility that the program was available, compare that to people who have less time covered. And they find that people who had more that critical period of that zero to five sensitive period, and that zero to five years, had improved healthy in terms of metabolic syndrome, and improved economic self-sufficiency.

There are two new papers on health insurance, one of them leveraging those expansions that we saw the graph about in the 1980s and '90s, comparing across people who are in states that did and didn't expand, and they've liked that to IRS records. And they found that Medicaid eligibility for children increased income and payroll taxes paid, decreased EITC receipt, reduced mortality by age 28, which is obviously not exactly when we think most people are going to be dying. Still it's noteworthy; and raised the likelihood of going to any college by age 22 for women.

And they are able to do a cost-benefit analysis that suggests that the government is going to recoup about 56 percent of every dollar spent by the time these people reach 60. I'll skip over this one, but this is another one that looks at the very beginning of the Medicaid program in the 1960s, so we can see people who are a little bit older, and again we see dramatic impacts and as evidence that there's an actual payoff to the government of a 2 to 7 percent return on investment.

And finally, housing, there's one long-term study that the follow-up to the Moving to Opportunity Study. The Moving to Opportunity Study randomize people into three different groups: a control group that had business as usual, a group that Section 8 vouchers, and were allowed to take those to find their own housing. And a group that was told you can have a Section 8 voucher but you have to move to a low-poverty neighborhood, and then had some counseling in order to do that.

Following these folks up now, which you know, some of them are in young adulthood. The researchers have found that the people who were under 13, when they were randomly assigned, have quite striking beneficial outcomes. And interestingly the people who were over 13 do not seem to have these kinds of outcomes. Again, here we are able to do a best benefit analysis that if a child had two young children, the increase and the earnings and the taxes from those earnings, are going to pay for the program in the long run.

So, in conclusion, the research from this sort of dawn of the social safety net programs, is just starting to come out, it's using really rigorous methods to try to distinguish between correlation and causation. And it really meshes quite nicely with this other literature that’s growing, about why the early childhood period might in fact be so sensitive and so important to invest in.

And we are not always able to say. You know, a really tightly-specified cost-benefit analysis, do the benefits -- are the benefits greater than the cost? Sometimes the best we can do is just to ask the question: If the person got this, are they doing better? And so we are a long way from really understanding kind of a dose response and being able to rank all of these in terms of what is exactly the most productive, but those things that, indeed, are able to do a cost-benefit analysis seem to show pretty striking returns.

Of course this is always open to the critique: that was then, this is now. Would we get the same benefits if we increased investments in that way, and I will just leave you with saying that in my neighborhood, in Massachusetts, there's no evidence that parents think for their own children that were at flat of the curve in (inaudible) of investing in childhood. (Laughter) Thank you. (Applause)

MR. DUNCAN: I'm Greg Duncan of the University of California, Irvine. I'm visiting this year at the Russell Sage Foundation in New York City. And it's a pleasure to be here. I don't have a big league comments about the paper, just some suggestions. So let me get started.

The paper makes this pint, and Kristin did, too. When we think about transfers we are obsessed with labor supply, right? This is not about labor supply; labor supply is really a second order of concern in this paper. It is about; to what extent the transfers have impacts, years and even decades ahead, on the children growing up into families that are receiving the transfers. And Kristin highlighted the growing evidence from neurobiology about the importance of early life experience; *in utero* as well as the first few years of life.

The paper finds in the empirical studies, long-lasting impacts of the growing number of these different programs. And to paraphrase studies of the long-term effects of cash transfers, food stamps, and so forth, show remarkably consistent evidence of improved long-term health and attainment. So, my comments are as the following. I wanted to say, it looks like there's something here.

It looks like the timing of when the transfer is first received, it appears to matter a lot, with older you're doing better. If timing matters then there are some tricky policy implications, and I want to talk about those. And then finally, I'm not quite as sold as Kristin is about the robustness of the literature, but we'll talk about that.

So, first two points. It looks like something is there, and what's there seems to indicate that when the transfer is received it appears to matter a lot. She talked about the paper by Hillary Hoynes, and Diane Schanzenbach, and Doug Almond. A map of the United States, this is my candidate best map ever of the United States. It's not red and green -- It's not red and blue, it's green. And it is this paper, the choice to take advantage of the way in which the Food Stamp Program rolled out in the 1960s and the 1970; right?

Usually when a program rolls out, it comes at the same time nationally, or at least it comes in entire state. In the case of food stamps, it was county-specific. So the dark-green shows counties that adopted food stamps later in this 20-year period, the lighter-green earlier. And you see a lot of states, especially in the south, Appalachia, where counties behave very differently within the same state; right?

So you could literally have kids born on the same day, living in the same state, a few miles apart, where one was in a county that had food stamps well before the baby was conceived, and another might be in a neighboring county where food stamps didn’t begin until the child was age 3 or age 5 or age 7; right? So, we were able to take advantage of the timing of when that food stamp was rolled out. With respect to the birth date to -- and then look 20, 30, 40 years later to try to see whether the timing to that rollout seemed to correlate with health and economic self-sufficiency.

This paper enables you to track year-by-year, according to the time when food stamps were introduced in the county. So, this is oriented toward exactly that. On the left hand side, you have kids who were conceived in counties where food stamps was already there, and then as you move to the right, food stamps began later and later with respect to the birth year.

So, just to set things, this is an index of metabolic syndrome. It's bad to have metabolic syndrome, it's very predictive of cardiovascular problems. So, higher scores are bad and this is just taking the kids who are early middle childhood, almost adolescence, ads the comparison group, right?

So, let's consider their scores to be zero, the reference group, and we want to see to what extent you had metabolic syndrome rates that were either higher or lower relative to this group of kids who were in counties for food stamps, were introduced in their childhood. This is a standardized scale, so the minus 0.5 at the beginning is half-a-standard deviation lower on this metabolic syndrome, and so forth.

So, what does the line look like? It's a very dramatic graded relationship between the ages at which food stamps was received relative to a birth year. So, way off to the left, kids who were in counties that already had food stamps years before they were conceived had 0.4 standard deviations lower levels of metabolic syndrome 30 years later, and then as you get closer and closer to the birth year that starts to increase, and then at early childhood it increases more,

So the later the introduction of food stamps, the worse off the child was 40 years later in terms of health. The worst off the child was in terms of economic self-sufficiency, which was the other thing that was looked at, right? So, this is pretty dramatic evidence about the potential importance of transfers early in life, and it's really mirrored by a number of other studies that Kristin reviews, where the evidence seems to point to benefits when the income was received relatively early in life compared to later in life.

If you look back to the negative income tax experiments there was evidence to that effects, where they were achievements effects, not universally across sites, but by and large impacts of the negative income tax payments to kids tend to be larger the younger the children were. The welfare to work experience in 1990s, the same thing, it tended to be a positive impact when the kids were just making the (inaudible) from school, there were even some negative impacts, when welfare boosted work and family income when kids were older.

The same result with Chetty. Kristin talked about that. Positive impacts of having this opportunity to move to the Section 8 voucher when the kids was under 13, but if the child was older than 13, are actually negative impacts, and then health insurance the same thing. So, there's a fairly consistent literature pointing to the importance of the timing of the transfer with respect to the child's age.

Why should early receipt matter most? Kristin talked about the really interesting bioethical evidence to that effect. But if you think about it, it's a much broader set of things as well, early childhood, the family is all important, schools having kicked in, neighborhood effects haven't kicked in. Careers are in the younger stages, income, family income is the lowest. And finally, early on, the parents are most overwhelmed and at least mature, or at least able to handle the burdens of parenting.

So, when there is this assistance early on in life, for a variety of reasons, you can imagine these impacts being larger. So, if that’s the case, then there are some policy conundrums, right? WIC is directed toward young kids, but by and large we really don’t differentiate our transfer programs according to the age of the children.

If we really think that transfers benefit families with young kids more than they do older kids, maybe we should either add a supplementary to the income tax credit in the case where families have young kids, or think about just taking the existing pot of money for the ITC, and reallocating it so that families get larger benefits when they have young kids, and relatively smaller benefits when they don’t.

And in Section 8, you know, the evidence is for positive impacts when the kids are under 13 years old, but the coefficients are actually just as negative, right, as the positive coefficients were when the kids were older than 13; right? So, do you set up a Section 8 housing voucher so that it only provides eligibility for families when you’ve got young kids, some of the families with young kids have kids who are older than 13, too. Right? So we really need to think about how policy needs to address this problem that there seems to be benefits more positive than early years.

And then I also took issue a bit with the strength of Kristin's conclusion, about the remarkably consistent evidence. If you just take Section 8, for example, Raj Chetty did find these uniformly positive results, but uniformly negative results for the kids who are older than 13. MTO was an experiment that involved families living just in public housing, in very high-poverty neighborhoods, it's not the universal Section 8 program at all.

And indeed there's another evaluation of the broader Section 8 program in Chicago. Brian Jacob that doesn't find benefits; a little bit at younger ages but not very much, and nothing at older ages. So, I'll be a little bit more circumspect in the scope of the conclusions. And then I've got some other comments that I'll provide to Kristin. So, that's it. Thank you very much. (Applause)

MS. SHEINER: Thank you very much. I just wanted to tell everybody. So we actually had two papers written for this conference, by Kristin and by Sarah Turner. And they are both available on our website, if you want to get them. And they both have a really wonderful discussion of all the evidence and sources of many studies. So, if you want to learn more, that's a great place to go. Thanks, very much.

So, part of the reason we did this conference it's just, it seems to be -- I'm not an expert in this field at all, but just casually that the evidence are just getting more and more compelling, that a lot these programs really -- oops, sorry -- do have a long term affects and that we should think of them as having a large investment component. Do you think, is that basically right? Are we there yet?

MS. BUTCHER: I think my takeaway is that I would still stand by the argument there's a remarkable consistency with the known biological evidence of these early interventions, and across these things that are evaluating the roll out of the dawn of the safety net, that there are these long-term impacts. And so I do think that that evidence is quite significant and quite consistent. I would just answer your question about the Jacob's et al. paper, the MTO is really important and it's not just about housing, it's about changing people's neighborhoods.

And so it probably closer to basic science than it is: this is how you roll out policy, because as you've said, what do you do with families who have a 13-year-old and a 2-year old? That's hard for policymakers, but I think does tell us the environment changes a lot, and the evidence from the Jacob et al. paper, is that people didn't change their environment. And that might be because it's quite hard to find a place to live in a very different neighborhood, and so I think as policymakers and thinking about policies, you do want to think about what would families do if you just gave them cash? And then if you want to change their behavior even more you have to think about what are the places where they wouldn't be able to do the same thing with cash?

So, health insurance, it's hard to buy health insurance in private market. If you give people health insurance, you are probably doing something other than just giving them cash. Teaching people about the importance of the environment and how you move to a different environment or how you improve the environment, that's probably going to give you something different from cash; that perspective, yeah.

MR. DUNCAN: Yeah. Well, I'm a believer, to the extent that I've invested the last four years of my life in trying to set up an RCT that would -- Okay. I'll talk louder. Trying to set up an experiment that when old mothers, poor mothers who had just given birth into two groups, either getting $4,000 a year for three years, or not, and then it's a collaboration with the neuroscientist who tried to see to what extent kids' brains are getting wired up differently as a result of cash transfers.

You know, we can also add to the list that Kristin talked about. We spend $100 billion a year, almost, on our child allowance. It's embedded in our tax system as child exemption, right. The child tax credit, the additional child tax credit; you add it up and it's $96 billion, right. It's paid annually instead of monthly. It's paid in recognition of the fact that families with kids have greater needs for income. And yet families who have no taxable income get nothing. Right?

So, if we really think about a more reasonable approach, it will be more along the lines of the universal child allowance, where, you don't condition it on taxable income. And we are hoping that our RCT will be funded if people have ideas for the final $4 million, we'd appreciate that. But I do think the strength of the evidence that Kristin reviews is such that that weight of evidence is probably in favor of thinking that these cash transfer programs do have a component that's benefiting kids, perhaps in the long term.

MS. SHEINER: So let's think about going beyond some of these cash programs, and think about the universal basic income, or something. So, you think about those, and a lot of people say that's a real waste, because you are going to be giving money to everybody with kids, or every family to make sure there's some minimum. And a lot of people don't need it. But then you'd start -- but then you do have -- you don't have to worry so much about any labor supply effects.

So, when you look at the research that you are doing, it seems like it was mostly the income that mattered. How do we think about whether or not the programs will be even more effective if we didn't worry about labor supply disincentives?

MS. BUTCHER: Yep. That's a good question. (Laughter) I think that mostly the labor supply disincentives are something that we shouldn't worry about that much when we are looking at these programs for low-income children.

MS. SHEINER: We should, or we shouldn't?

MS. BUTCHER: We should not. I think we should try to make sure that they have the basic things that they need and be willing to say sometimes there are labor supply effects, but the evidence does suggest that those labor supply effects are set, the investments that we are trying to make.

MR. DUNCAN: Well, yeah. And we need to worry about the cumulative effects of marginal tax rates growing higher and higher. On average, marginal tax rates are about 33 cents on the dollar, I think, for the transfer programs that we have out there. So there can be disincentives, and we want to make sure that when we do put in place a whole set of programs that they don't end up very high marginal tax rates, and very substantial labor market disincentives.

MS. SHEINER: So, do you think that -- So there's huge political emphasis on work, right. We are also always thinking about getting people to work as the sort of primary. Do you think that there's just too much emphasis? I mean, it used to be as you pointed out, that the idea of giving these subsidies to mothers so that they didn’t have to work, and actually could stay home with their kids.

So do you think that the politics of sort of gotten it wrong, and are they ever wrong, because they don't think about the importance of these early years. Is that something that’s made its way into the sort of public consciousness? Or do you think not yet?

MS. BUTCHER: Well, I think there are different people who are react in different ways, some people are quite capable of going off and getting a job, but mostly we see from what we've seen from welfare reform, that children don’t do better if the parents just get a job, and that total resources stay exactly the same. There needs to be some supplementation there.

Again, what are the long-term consequences of that? Do families really learn on the job and have their wages grow over time? I don’t think we know the answer to that, but I'm somewhat suspicious?

MR. DUNCAN: It's such a difficult thing to orient a political discussion away from labor supply toward anything else. Throughout the welfare reform debates of the 1990s, I was trying with a bunch of other people to provide research and arguments about consequences for kids, right? And back in the welfare reform days there were diametrically oppose predictions about what welfare reform would do for kids, right? There was Daniel Patrick Moynihan was saying, we are putting children to the sword. Would they be sleeping on grates?

And then other people would say, well, you're -- but the parents are working, it's going to be a positive kind of role model, is it going to be a good thing for kids. But despite those predictions there was absolutely no content in the debate over welfare reform that was focused on kids at all. It was all focused on labor supply.

And if we think about a few years ago when we were debating cutting food stamps, I predict this time when we think about the safety net changes we are going to be making in light of tax cuts, all the rhetoric is going to be around hammocks, and lazy parents, and nothing is going to be about potential consequences for kids.

MS. SHEINER: So, I think what you're going to hear in that debate, too, is what you always hear. It's like the war on poverty has been a complete failure, right? That is hasn't got rid of poverty, that poverty is just as high as it ever was. So, how do we take this evidence that, you know, these things have long-running important effects, and you sort of counter that: the war on poverty has been a failure?

MS. BUTCHER: I don't think that there's evidence that the war on poverty has been a failure. If you take into account what happens after you do the transfers, which I think is point of the transfers, then poverty has grown quite a lot. And so I think that would be a misreading of the evidence to say, there has been no effect on poverty.

But I think that, I'll just echo what Greg said, I anticipate the debate will all be about the labor supply effects, and I think my reading of the evidence would say, it should be about what do children need at critical times of the development in order to fundamentally affect their capacities as adults. And I think we have evidence that we are running a great risk if we let them not have the things that they need as they develop.

MR. DUNCAN: During the Welfare Reform Debate, there really wasn't that much evidence that could be debated, right; about impacts on kinds. And I think what Kristin's paper shows is just the last 5 to 10 years. Right? There's really been an explosion, of a very interesting, very careful studies evaluating the impact of these various programs that is really starting to put on the table pretty strong evidence with regard to the impacts on kids for later-life outcomes. Now we can choose to ignore that information, but at least it's there, and it's much stronger than it used to be.

MS. SHEINER: So, I was going to ask you if you had to, if you were going to increase spending, you know, what might you choose? But I think also, let's think of it the other way. Which is: what are the things we should be most worried about, about being cut going forward if we are going to be worried about the long-term impact on kids? Is there any way? So, I know that the evidence is quite there to sort of, say, well the bang for the buck is biggest in Medicaid or in housing. How do we -- Is there anything there to think about in terms of ranking?

MS. BUTCHER: Well, I would think health insurance. Healthy insurance is tricky because you don’t expect immediate impacts on health, right. Health is stock, not a flow. And you have to have something go wrong with you that health care could have either prevented or ameliorated before you are going to see the effects of health insurance. But these longer-term studies do seem to show that expanding Medicaid, in fact, had a first order of fact that allowed children to have more medical care, and a better coverage.

And that these long-term impacts say that that had a big impact on both their health and their productive capacity. And those are things that it's quite hard for families to buy on their own even if you were to give them cash.

MR. DUNCAN: So there's health, and there's everything else; and I think everything else can kind of be lumped together in terms of what's happening to the aggregate resources that are being made available to low-income families and kids.

MS. SHEINER: So it doesn’t matter so much; because we just care about the total?

MR. DUNCAN: Right.

MS. SHEINER: Do we have time for a few questions from the audience? Can you bring the mics? Can you stand up and hit the gentleman in the purple tie? State where you're from, please?

SPEAKER: Paul Ennevan Independent Consultant. A question to Kristin, and anybody else: Any specific reason you didn’t include Head Start, and the comparison of Head Start as a baseline with Todd experiment if you additional $10 million.

MS. BUTCHER: I guess the reason I didn't include it, was because I thought that it has been really well covered in other places. And that these other programs had had relatively less coverage.

MR. FRIEDLANDER: George Friedlander. A suggestion that has a question, I'll make it real quick. A lot of the work being done on technological change, and its implications for the wage side as opposed to labor side, talks about income support as a part of the solution. So that drags all of this into the more modern era. And I'd love to hear your response to that.

MS. SHEINER: Kristin? I want to take this question, too, with that one.

MS. SCHANZENBACH: I'm Diane Schanzenbach. A question mostly for Greg Duncan: You seem to be more willing that I seem to be willing to redirect some of the current safety investments from older children to younger children. So I want to ask you, or push you to think a little bit about how we think about short-term impacts, versus the long-term impacts. I think that's based on long-term impacts. But I think there are some really important short-term impacts.

For example, you know, if a 15-year-old isn't getting enough to eat, he might do other things that are socially problematic, in a way that a 2-year-old wouldn't. So how do we think about those?

MS. SHEINER: Any of those questions, yeah.

MR. DUNCAN: Okay. Even for short-term impacts, especially achievement, school achievement, right, and to some extent like social behavior. The evidence is still fairly -- in the way that we package assistance, right; welfare for example, we lump together ash programs with incentives that change labor supply, right? And one of the things that as discovered in the 1990s was when you -- both increased work and income, you had these positive impacts for the younger kids, right?

And you had negative impacts for the older kids in part because with the parents working the kids were stuck -- the teenage kids were stuck caring for their younger siblings. And that interfered with school work and so forth, right? And you've got with, you know, Doug right, these problematic differences between benefits, depending on the age. So, I'm not saying eliminate, when you redistribute the RTC, right? I'm not saying cut it out completely, but it seems to me the preponderance of the evidence suggests waiting at somewhat more toward payment with the young kids make sense.

MS. BUTCHER: I don't think we answered the question about changes in technology. I think that, you know, we are in a brave, new era where the UberBots may be coming for us all. And to the extent that it's harder for people to get a job in the low-wage labor market I think these are going to be even more salient issues, about how we support --

MS. SCHANZENBACH: The other point is the concern about the return (inaudible no mic) must be even more important --

MR. WESSEL: I think the measure of a good panel is that it could go on forever. The problem we have is that this room is committed at the end of our program this afternoon. So we can't go over too long. So, first of all I want to thank Kristin, and Greg for fitting more information into the time we allotted and then that I thought was humanly possible. So, extremely efficient; and I appreciate that. So, please join me in thanking them. (Applause)

All right. So, we have a challenge. We have about -- We have half an hour for lunch, there are sandwiches in the room on the other side of the aisle here, (Inaudible) in paper plates, and some sandwiches. There are some tables in there, you are free to take the sandwiches to the tables there, if you can find as seat. You are free to bring the sandwiches in here. There's are drinks in the back of --

SPEAKER: In the hallway.

MR. WESSEL: In the hallway, I hear. And so we are going to reconvene at 1:15, so please eat fast.

(Recess)

MS. SHEINER: Okay. We're going to move on to the next part of our program. So now we're going to talk about education, which is at least more commonly thought of as an investment in human capital and shouldn't be as controversial, and something that we'll obviously hear a lot about politically in the coming months and years. And so we welcome Sarah Turner, who again has written a paper for us on education policy that is posted on our website from the University of Virginia. So thank you very much.

Sarah?

MS. TURNER: Okay, let me get started as everybody's coming in to sit down and make sure. First, we need to really thank David and Louise and Kerry, who have just put together a really wonderful program and they've been good at nudging people to do what they should on time.

So I want to just start out with some general comments and then turn to specifics.

So first off, education is an excellent investment, both for individuals and for society. I think we can -- I want to make this case in terms of an efficiency argument. Failure to close the gaps which are really big and growing and educational attainment is likely to both hinder economic growth and also increase the burden on taxpayers over the long term.

And I think there are just two big takeaways from this. First, money matters enormously in education, but that's a necessary, not a sufficient condition. And then secondly, funding really needs to be matched to a commitment to accountability, and in the education space, innovation. And the federal government has a big role here.

Okay. That said, the title of this event includes, I believe, From Bridges to Education. And it's worth noting why education is different, and arguably a good bit more complicated than the challenge of building a bridge. The economics of building a bridge is tough enough in terms of the allocated problem in terms of who pays it. How do we do it at the lowest cost? But there are blueprints. There's an engineering solution to building a bridge or building an airport.

Education is more difficult in that we're still trying to uncover the underlying technological process, that is what we should do with different populations of students. We're learning a lot but these are really hard problems. And again, it's worth making that distinction.

Another sort of opening point is just about every big volume on education starts with some bit of a narrative about falling behind. It is certainly true that the U.S. lags other countries in terms of test score growth and changes in college completion. But it's also worth putting a more optimistic note on the table. That is, over the last couple of decades we've actually seen some growth in test scores in the early grades. That said, they've been stagnant in the middle grades. We've seen some reductions in high school dropout rates. In the most recent decade, we've seen increases in college enrollment rates. We've also seen increases in college completion rates. That said, those gains are not spread evenly across the population, and we should be increasingly concerned about the degree of inequality.

What's more is, I think we're going to talk as we go along in this, we know a great deal more about what works and actually what doesn't than we did two decades ago. I'm sorry Russ Whitehurst isn't here. Some of this owes a big debt to the founding of the Institute of Education Sciences in 2002. But there's a sort of hopeful note here. We've made some progress. There's a lot more to do.

Two messages. We want to use evidence to shape policy. We also need to innovate in this space. My assignment, what are high return investments and priorities for federal education policy? I decided to make that a little bit narrower. There are two bookends here that are really important. Pre-K, talk to Diane. She'll answer any questions about pre-K. And also, and I think the sometimes forgotten piece of graduate education in funding the sciences. But we've got to set some boundaries here. And indeed, I'm going to set even a better boundary here. I'm going to do something that economists are pretty good at. Dick Murnane and I have colluded on this enterprise. We are going to exercise some division of labor here. I'm going to concentrate on the post-secondary margin, which is really my comparative advantage. He's going to concentrate on K-12. That said, we have a lot to discuss in this sphere.

And I think within K-12 you can think about three buckets -- school accountability, school choice mechanisms, teacher preparation. We're going to hit on those I think through the course of this 40 minutes. I'm going to talk in terms of the post-secondary sphere, in terms of student financial aid, college choice, and then the supply side of higher education.

I want to say just a quick moment about the federal role in education policy here because it deserves some comment. So overall, we spend about $1.2 trillion on education each year. The federal role is actually about a quarter of that. Okay? And in that quarter, about $100 million are equally divided between, roughly, elementary secondary and K-12, and then there's another $100 million or so that's off budget in terms of student loans.

So you might ask, what are the big missions of the federal government in the education sphere? I'm going to hit three here. The first is addressing credit constraints. Credit constraints are one of those market failures that economists love to teach about in introductory classes, and they really matter in education. There's a good reason to think that individuals cannot fully finance worthwhile investments in education. There is a compelling government role in this area.

Second is what I'm going to call a limited, but certainly not zero role of the federal government in regulation or auditing the use of its funds. Okay, preventing the worst outcomes.

Third, and this is where I think hopefully we'll have more discussion, is that the federal government really has an advantage in funding research, innovation, and development. These are innovations that when we discover something that works in one area, we can spread them around to other communities. Many of these things need to be done at scale, and it is only -- and the federal government is actually well-positioned, not necessarily to execute these experiments but to at least seed them.

The next sort of preliminary I want to put on the table is just a reminder here of really the degree of inequality, the challenge that we're facing in educational attainment. And as Kristin noted, these things start early. The gaps start actually very early before kids enroll in school, but they continue on. So here are what I'm going to call the entrenched elementary/secondary achievement gaps. The blue bars are the comparisons of the quintiles by education. The red bars reflect the black-white difference. These are very -- I'll skip the precise characterization. You should think about these in terms of grade level of achievement. They are very meaningful in terms of grade levels of achievement. And what is striking here is how large the economic gap is actually relative to the race gap. So if you look back 50 years ago, the race gap would have actually been larger than the economic gap.

But things get actually worse as we go on to college enrollment. So these -- the left-hand panel is enrollment by family income. The lowest quartile on the bottom, the highest quartile to the right. The right-hand panel is enrollment; the left-hand panel is completion. The dark dashed line is essentially the behavior of those students who are making college-going choices in the Eighties. The lighter blue line is the students who were making college choices at the beginning of the 21st Century. And the takeaways from these, even if you're in the back, are first off, there's a positive gradient. Second, the gaps have widened and they widened really quite markedly over time. So we've got about a 30 percentage point difference in enrollment rates. There's not much more you're going to push up that enrollment rate in the top quartile, and only about a 10 percentage point increase at the bottom which really meaningful again is the increase at the top of this distribution between the top and the bottom.

Now, one might rightly note that these are not adjusted for differences in achievement on entry. Again, if you do this additional calculation you'd still see very large gaps and they've increased over time. So on the order of about 16 percentage points in college completion.

So that's the preliminary. That's the problem we need to address. And as I say, I'm seeding some territory that we'll come back to on K-12, but I want to talk about higher education. And higher education may actually get some front billing here in the DC policy environment given that the Elementary and Secondary Education Act was just reauthorized. What's on the table is reauthorization of the Higher Education Act, which somehow or another Congress hasn't quite gotten to yet. And within this rubric are the big programs, the Title IV financial aid programs which you probably know as Stafford or Direct Student Loans and Pell Grants, but the other sort of key topics that I want to touch on are the college choice problems and essentially the supply side problem.

Okay. Federal Aid. Grant Aid. We've got two slides on student aid here. Again, I think we have really compelling evidence at this juncture from Sue Donarski, from work that I've done on the GI Bill. The transparent grant aid can have a very positive effect on collegiate attainment. We have actually grant aid on the table right now, or effectively grant aid, in the form of the Pell Grant, which we spend about $30.6 billion per year on, and also implicitly the tuition tax credits, which amount to another 18.2 billion. If you look back in 2010 at the sort of peak enrollment period post Great Recession, those numbers total to about $60 billion. The bad news is that even though these programs have two features that one might really like in a student aid program, that is they're portable, so in effect they're a little bit like vouchers. Secondly, their means tested.

The problem is they're not very transparent. And because they're not very transparent, particularly the tuition tax credits, they're not having necessarily the impact that we would like to see on student enrollment, and more importantly, helping students to finance really worthwhile collegiate investments. And I think I'll draw your attention to two issues here. First, the tuition tax credits suffer from the problem of really a total lack of salience. They don't matter to you if your parents don't get paid another 18 months from when you apply to college, or you're not going to see that in terms of your tax benefit, and again, at that point you may have lost interest, or it's not going to affect your decision. And indeed, that comes through very clearly in the research literature. Many students don't even know about them.

The Pell Grant is actually a bit of a challenge here because it serves such a broad umbrella of students that it's not very well targeted. I want to draw your attention -- so the Pell Grant generosity has actually increased a bit in the last decade.

I want you to draw your attention to the column on the right here, which is the proportion of students who are independent. That is likely over the age of 24. They have young children of their now. Now, one of the challenges is designing an aid system that meets the needs of this population who are likely responding to near-term economic shocks, as well as the needs of students who are recent high school graduates. And the system of needs analysis that we have doesn't accomplish either objective very well. And so given that I'm running out on time we'll come back to this, but there are excellent recommendations by a Brookings, I believe, supported panel called "Rethinking Pell Grants" that would serve to essentially divide the resources with separate needs analysis systems between a Pell Grant adult program and a Pell Grant young program.

Loans. Everybody's favorite question here. I'm going to just simply note that there's nobody -- anyone who has read a newspaper in the last 10 years knows that there has been much attention with headlines like a generation hobbled by the soaring cost of college. Contrary to what some newspapers would have you believe, the number of undergraduate students who are drowning in six figures of debt is more like one in 30 rather than the median or the mode. So there's a point of just getting the numbers right that are important.

Also, there's a really important study that I believe was presented last year by Adam Looney and Constantine Yannelis here that looks at what is a real increase in default rates, which has occurred over about the last eight years to increasing to about 10.1 percent from about 5 percent, and they ask why? And there are two big factors that are at play here. The first has to do with the changing student population, a shift. That is the students who are most likely to struggle are these older, if you will, nontraditional borrowers. And second, a shift in the type of institutions that those students are attending.

So when you take out the compositional changes, the loan issue is different than it has often been characterized. So this brings us to the question, there are real questions as to whether some of the students struggling are really being buried because they may be enrolled in a college that had weak returns in expectation. The worst example of this would be those institutions that have turned out to be downright fraudulent and there's a question of can we help those students avoid those choices? Which is a college choice problem. And then there's a question of what do we do with students struggling in repayment.

Given that I think I'm nearly at negative time here, I am just going to hit one point here on my list which is one of the most popular policies from both sides of this aisle has been discussion of income-based repayment, and there has unfortunately been little attention to how this program actually affects the liabilities of the federal government. A recent GAO report notes that the liability has now increased to about $74 billion, which is about triple what it was estimated to be. Essentially what you're doing is you're trading an insurance mechanism for more moral hazard and adverse selection. The primary beneficiaries are going to not be those who have borrowed a little bit and really are struggling with small amounts of debt but turn out to be those who are getting forgiveness for graduate borrowing.

I think I'll come back to this. Can I have two minutes and then I'll -- two. Okay. So we'll come back to this.

College choice. There's much to do here. But this is a case where we need R&D sponsored by the federal government. Again, there are two groups of students who are not very well guided at this point, particularly the older nontraditional students who don't have access to either peers who are going to college or traditional guidance mechanisms. There are, I think, very interesting experiments we can do there.

Supply side. Again, resources matter enormously, and if you see what's going on at public institutions, resources per student have declined markedly. These are constant dollar. And the issue here is how can we encourage greater state funding? We see increased stratification. This is an issue to address. But really the challenge, you know, resources are what they are but are there ways for the federal government to support productivity enhancing innovations? Again, are there consolidations that can be supported? And again, literally, the billion-dollar question is, can technology change education productivity in the higher ed space?

Main takeaway. Again, we've got a role of accountability, addressing market failures. I want to just end on this final note which is we're doing better. We're learning a lot about how markets work in education. But there's room for more investment here. And just as a relative point, the spending on research on education is about $279 million a year, which is about 102 times or the spending on NIH is about 102 times greater as is spending on NASA, about 43 times greater. So there's room for more investment here, and I think there are many high-return projects to think about.

Let me turn this over to Professor Murnane who is going to take on the K-12 side, I believe.

(Applause)

MR. MURNANE: Sarah has written, you know, a thoughtful, valuable paper. I agree with the role she sees for federal education policy. And as she mentioned, we agreed that I would focus on recent research, how recent research informs the design of federal activities in three areas -- accountability, teacher policy, and school choice.

Just a few words on context. Inequality in educational outcomes among the 50 states, each of which has its own education system, is very high. This is evident in the results of the National Assessment of Educational Progress. Low quality schools are associated with low rates of intergenerational mobility, as Raj Chetty and his colleagues have shown. This is worrisome because the promise of upward mobility provides a lot of the glue that has held our pluralistic democracy together. So improving education, especially in states with low quality state systems, and especially children from low income families, should be a goal of federal education policies.

So what are the policy tools? Well, as Sarah writes in her paper, funding and regulation are the primary set of tools. Now, the federal government has attached strings to aid, and this has affected the actions of states and school districts. There's good research on that. But as reaction in some states to the Obama administration tying post-Great Recession education funding to adoption of the Common Core has shown, regulations are not very popular. For instance, such incentives to alter behavior. The Every Student Success Act that moves the design of accountability systems firmly to the states, there's still a regulatory role and still very much up for grabs all the details of these federal regulations will look like. I'll come back to that.

So turning to the first of service buckets, accountability. Very important, as Sarah emphasizes. It's also very difficult to get accountability right. A litmus test of that would be whether the accountability system encourages skilled teachers to work in high poverty schools. That's a test that most accountability systems will fail.

Now, what are our federal roles in this regard? I see four. One is the auditing function. Strong support for National Assessment of Educational Progress is absolutely critical. Also, another opportunity would be offer cost-sharing to states to participate in international testing programs such as PISA and TIMSS. Three American states participated in the 2012 PISA assessment system for 15-year-olds. Now, all these dates by reports (inaudible) percent proficiency on their own state tests show they're all doing about the same. But in fact, on the PISA test, one of the states had average scores way above the OECD average. One had scores way below the OECD average. So again, that's the importance of this auditing function and helping states to benchmark how they're actually doing. So that's the second.

Second, signal openness to innovation and accountability systems so it's a spark innovation in school design. Currently, all state accountability systems are based primarily on student math and reading scores. Now, the skills that are measured, math and reading scores, are clearly important and they matter, but there are at least four well-done research studies showing long-term effects of interventions designed to improve the lives of low-income children that did not affect test scores. One of these is moving to opportunity. As we heard earlier, very positive effects if the movement took place before the age of 13; no effects on test scores. So that suggests the importance of thinking of accountability in a broader sense. The great availability of data on college, on crime, on labor market participation wages suggests the possibility of designing much more creative accountability systems, and I think encouragement of that would be valuable, particularly encouragement of innovation in the design of education for our teenagers. If you look at the innate scores, you see as Sarah mentioned improvement in scores of 9-year-olds, no improvement in scores of 13- to 17-year-olds, and very large gaps by race, ethnicity, and income. So we really need to find new ways of designing education for teenagers. Some of those ways to try include more connections to the world of work.

So I think the feds can signal an openness to accountability systems that would support innovation in these areas. Examples of things that have been tried with some success, small high schools of choice New York City, early college high schools, National Guard Challenge, some urban charter schools.

Third, support collaborations of states to work on the design of new educational options for teenagers. It would be great particularly if states with weak systems collaborate with those with stronger systems who want to fund them, and finally, of course, fund research on the consequences of innovative accountability systems. We would hope to see significant variation among the states.

On teacher policy, you've got all over the place the research that shows what every parent knows, teachers matter and there's a big variation in teacher quality. What is much less attention, however, is very good research findings from (inaudible) is showing that the performance of novice teachers and the rate at which they improve their performance depends on the skills of their grade-level colleagues and the quality of the environment allowing them as adults to learn. So that's critically important. And you think about accountability systems. In other words, where a novice teacher is placed is going to have a big impact on how well she fares on accountability.

Now, we don't unfortunately know very much about how to design systems that provide both accountability, the combination of accountability and support, so that's an area where we really need to do more research. Of course, this is what school district central offices are supposed to do, provide this combination. Very few know how to do that. So I think there's really need for research in that area. Another area related to that in which I think research could be promising is looking at how charter management organizations are trying to design that same combination of supports and accountability for the school in their network. Some initial results are somewhat promising, but again, there has not been a systematic research program.

School choice. Clearly potentially valuable widespread support, but the thing that has not been talked about that is critically important is what might be called peer group influences. And I want to quote a brief quote from a recent National Bureau of Economic Research working paper. "Exposure to a disruptive peer in classes of 25 during elementary school reduces earnings at age 26 by three to four percent. We estimate the differential exposure to children linked to domestic violence explains five to six percent of the rich-poor earnings gap in our data." So you can clearly understand in any system of competition competing for students, what kind of students do you want to avoid? Students who are likely to have those kind of deep-seated behavioral problems that come from domestic violence at home, perhaps from domestic violence that their families observed in Central America before they came to the United States. So that does not mean the choice is not a good idea but it does mean that enormous attention needs to be paid to where those children go to school and the consequences for them and for the children who are in school with them.

Now, laws and regulations governing charter schools vary enormously from state to state. There is very little systematic knowledge about the extent to which these regulations affect which children go where and how that affects outcomes. I think that's a very promising area for research.

On vouchers, another area of school choice, there are lessons I think from observing Chile. The country of Chile has had national K-12 educational vouchers since 1981. Up through 2007, the value of a voucher did not depend on the family income, nor was there very much accountability for private schools. While this has been well studied, the main consequences of this are two -- three. Stagnant achievement, growing gaps by income, and increasing isolation of low income kids in particular schools.

In 2008, Chile dramatically changed its educational voucher system. The vouchers for kids are now worth 50 percent more than those for kids from affluent families. A school receives a concentration bonus if it serves a large percentage of poor kids and the significant accountability of all schools that accept vouchers. That has led to substantial improvements in math and reading achievement and closing of gaps between low income kids.

So again, if people ask you what do you think of vouchers, is it a good thing or not, the only sensible response is to say I've got about 10 questions for you about how this voucher system is going to work. The details matter enormously.

So to sum up, the audit function is clearly very important to the federal government. Second, be sure that the rules governing regulations don't hinder innovation, particularly in design of education for teenagers. Support research, especially in the consequences of state and local initiatives in these areas of accountability, teacher policy, and school choice. In all of these areas there is a great deal to be learned and about the consequences of details of these policies for the distribution of student achievement. Thank you.

(Applause)

MS. SHEINER: Those presentations were both so interesting. Talk about putting a lot of material in in a few minutes. It was really great. I have so many questions we're not going to get to most of them probably.

Let me start -- let me step back and just ask a sort of very broad question which is what is the major problem to be addressed in education right now? Do we think it's like the whole system isn't doing a good job of educating children? Or is it really, you know, it's doing pretty well for most kids but really poorly at the bottom? Kind of just broadly, both of you.

MR. MURNANE: Well, why don't I talk about the K-12?

MS. SHEINER: There you go.

MR. MURNANE: Again, there's not one system; there are 50 systems and they look fundamentally different. And they have very different outcomes. And those outcomes matter, as Raj Chetty and his colleagues have shown. And the federal government spends less than 10 percent of the money. It has some leeway with regulations. They're not very popular. So the problem is there isn't one system.

MS. TURNER: And I think in higher education you're talking about a diversity of over 4,000 institutions, and they are very, very different in terms of the students they serve, their focal mission. I do think that in terms of picking one issue it is the success of low and actually moderate income students and their capacity to both make good college choices, to finance those college choices, and then ultimately to complete.

MS. SHEINER: And staying on this kind of big picture, so some people would say, look, you know, you noted in your paper that real per capital spending in the K-12 area has almost doubled in 30 years but you say the results have been modest. So, if someone says, well, why are we going to spend more? Every time we spend more we don't do very well, and maybe you guys aren't advocating actually spending more primarily. So, you know, one, are you advocating spending more on education? And two, how do you respond to that criticism that like more money just doesn't seem to matter?

MR. MURNANE: Just a couple of things. First of all, there's been new work. Karibo Jackson and Rucker Johnson have a very nice paper in the Quarterly Journal of Economics where they show the impact of funding on student outcomes is greater than previously thought. Diane Janson-Beck and her colleagues have a second paper that shows the same thing. I think a key piece of it is that over time, while the U.S. has not gotten great at accountability, it's very different than it was in 1965 when the Secondary Education Act was first passed. It doesn't mean that all money is used well by any means, but I think we're beyond the point to say money doesn't matter. Of course, with Title I, again, it goes to 14,000 school districts. That doesn't make any sense at all if you're thinking about having an impact on the lives of poor children.

MS. SHEINER: That it goes so broadly you're saying?

MR. MURNANE: Probably. And that's a political reality that doesn't make sense.

MS. TURNER: I think in higher education, you know, again, averages are deceiving here, and there's no question that money matters. It depends on who you are as to whether resources have increased or not. If you're a student at one of the most elite universities in the country, resources per student have increased. If you're a student who is attending a community college or an open access four-year institution, it's likely that given reductions in state funding that resources per student have decreased.

So again, there's a lot of heterogeneity, and I think we've come around to see that on whole, resources really do matter. At the same time, that's a necessary but not a sufficient condition for education success, and there is room in both K-12 and in higher education for innovations that essentially increase productivity. That is, improve student learning without changing the cost.

MS. SHEINER: So let's talk a little bit about school start. Start with the K-12, and actually, I have a factual question I was going to ask Sarah from her paper, too, but both of you mentioned it. So the Every Student Succeed Act has already been enacted but a lot of the regs have not been promulgated yet. So what is the scope for the next administration? How much leeway do they have to change education? And in particular, to think about charters and vouchers? What are the facts on that?

MR. MURNANE: I think a lot will depend on how the president-elect uses the bully pulpit. That would be one thing. But again, I think the effects through -- well, for example, there are these very detailed issues. The language in the ESSA about the allocation of spending across schools in the same district and a big fight about how do you count teacher salaries? Salaries in schools that serve primarily middle-class kids are higher because teachers are much more experienced. Well, there's a big fight about that. I think in the area of research, I don't think they have much leeway over charter schools except perhaps to encourage more attention to these regulations through research. The fact we always hear about the CREDO study that on average charter schools aren't any better, but to my knowledge there has not been a systematic look at these by states. And the regulations on charter schools vary enormously in terms of whom they serve and what outcomes they must show, and whether if they do a poor job, whether they're eliminated or not.

MS. TURNER: So let me just jump in here. I mean, I think we're on the same page entirely and, you know, this notion that we have 50 state experiments going on and then within that about 14,000 school districts. And we have an increasing body of evidence on matters like school choice, the charger programs, as well as vouchers. It's good evidence but it's honestly a little bit mixed in various forms, and it is not the kind of evidence that I think -- certainly, I don't think Dick or I would be comfortable in suggesting that any piece of it is so definitive that it should suggest a specific set of federal regs on charter vouchers or teacher compensation for that matter.

We are learning a lot. There's room to learn more. It's imperative to collect data, to assess it carefully, but the evidence actually doesn't, I think, support strong federal policies in this area beyond this important, what I'm going to call an audit function, and also this function of making sure that there's really the worst kinds of fraud and poor performance don't persist at the bottom of the distribution.

MR. MURNANE: One other comment. After the ESSA was passed in 1965 that provided Title I, the first significant federal funding for compensatory education, the Department of Education, with the support of the administration, used the withholding of Title I funds as the stick to get southern school districts to comply with the Civil Rights Act and effectively to desegregate schools. Now, it was not popular at all, of course, but it did have -- it did achieve its objective. But again, that's the question of whether the federal government is willing to use its regulatory power, because 10 percent is not a lot, a big percentage, but on the margin it's significant dollars, but it does take a pretty heavy hand.

MS. SHEINER: Okay. I have more questions. Let's move on.

Let me ask about teachers, which I thought there was a lot of really interesting stuff in your paper and in your discussion about teachers, particularly this idea that like within three years of a teacher's career you basically know if they're a fabulous teacher or a horrible teacher, and maybe you don't know where they are in the middle, but sort of like the tales show up. And one thing I was wondering, you did mention, if teachers are, basically, you know, there are people who are going to be great teachers and people who are going to be horrible teachers, then some of these pay-for-performance or schemes, like how could they even be expected to have an impact? How much of it is that teachers aren't trying hard enough or don't have enough incentive to try? Or how much is it just like there are some people who are wonderful at this and other people who should not be teachers. Now, you mentioned that there is like evidence that within the first three years you actually can maybe create good teachers.

MR. MURNANE: I have a couple things. First of all, newer work shows that in the right setting with the right support, teachers improve well beyond the first couple of years, and the newer work is quite good. But only in those settings.

Now, I think this pay-for-performance, that's the current name. The old name was merit pay. Mathematica has done a very large scale, $13 million study funded by IES of the effects of a variety of teacher performance plans. My interpretation of that evidence is almost on effect, except in most cases most teachers got extra money. In those cases, of course, they were quite popular. Not a very powerful strategy, I think, but I would distinguish that from a situation of providing extra money to work in difficult situations. Combat pay will not do the job if there's not support to actually do the job, but if the job has particularly a longer school day, a longer school year and it's quite demanding, some extra pay for that can make sense. In subject areas you're having difficult, extra money for that, but that's very different than the performance-based pay.

MS. SHEINER: Let me ask you about some things you didn't mention. So one of the things that people normally think about when you're trying to buy a house and choose where to send your kids you look at class size. And I know there was some controversy over whether or not class size matters. That's clearly something where you could spend money on. What is the current thinking on the importance of class size to achievement?

MR. MURNANE: Well, I think the best -- in the Raj Chetty reanalysis of the Tennessee Star experiment shows that having smaller class sizes in kindergarten makes a substantial difference, particularly in schools serving high concentrations of low income kids of color. I think as you get to higher grades the research is not nearly as clear cut.

MS. TURNER: I think there's also this question of markets and implementation matter enormously in this, so the Tennessee class size experiment is very different than the rollout of reduced class size in California which, again, the incentives were to reduce class size effectively independent of other educational considerations. So actually, a kid is probably a little bit better off in a slightly larger class than a class that combines across grade level. Again, you want to be careful in terms of how you do these rollouts so that you don't end up having the more affluent districts effectively buying the very experienced teachers from the low income districts. So again, design matters, implementation matters enormously in how these policies are put into play.

MS. SHEINER: Let's move on to higher ed quickly and then I'll get to some audience questions.

So you talk a lot about school choice and that's a really big problem; people are not going to the right schools. Is that like really low-hanging fruit? Is that something that would be very difficult to change or something that you think might be actually not that difficult and could really have a big effect?

MS. TURNER: Well, it's something that can really have a big effect. It is very data dependent to do it well. It also is very differentiated. So done correctly, you want students informed in ways that are very personalized, that take into consideration their geography, their achievement, and their local market options. And again, I think it's very important for students to understand net price. So the difference between the posted tuition and financial aid. Similarly, students need to understand meaningful differences about how effective different colleges and universities are. You're not going to find a student who says that they don't want to go to a very good college. All students say they want to go to a really good college. The problem is that students often can't distinguish between institutions based on their graduation rate, so their resources per student.

MS. SHEINER: You mentioned -- oh, do you want to --

MR. MURNANE: Not on that. I want to come back to the class size when you're done if we could.

MS. SHEINER: Okay. I'll ask one question. I'll let you come back and then we'll go to the audience.

So the last question from me is going to be about -- so one of the things you mentioned, again, looking for things that are easy and could have sort of a big bang for the buck is closing some of the really terrible places. Is there a federal role both in closing and in sort of supporting the states and localities in making sure that there's enough maybe community college seats available for these students to go to so you that you don't just end up having people not have a place to go at all?

MS. TURNER: So, you know, again, I think that there is, you know, the human cost of institutions where, you know, my favorite, you know, there are institutions out there where the on-time completion rate is actually less than the default rate. That should be probably a clear indication that an institution isn't functioning as intended and is probably not using Title IV aid well. I think it is imperative not to let these institutions go on too long in this situation. The accreditation mechanism is nominally supposed to address this. I think it is wholly ineffective and probably wasteful in the administrative time it takes. You know, it's a lot of paperwork burden and is not identifying the poorly performing institutions.

MS. SHEINER: Okay. Do you want to --

MR. MURNANE: We should probably go on. Thank you.

MS. SHEINER: Questions? Why don't you go right to that lady over there?

MS. RISER: Hi. My name is Mindy Riser. I've done work for the Department of Education.

I'm curious what you think of some of the work that IES has sponsored, the What Works Clearinghouse. Has that really made a difference? Has it impacted choices? And also, the role of the regional educational labs. Where is that going, and what has been its success rate?

MR. MURNANE: I think Sarah and I both feel that IES has, again, compared to what came before, has contributed to a marked improvement in educational research. And while IES does fund a great many randomized control trials, that's not all it does contrary to what some people may think. I think the labs are a mixed bag. For a long time they had their own lobbying agency. They put a fair amount of money put aside just for them. I'm not so sure that's the best way -- in fact, I think it's not the best way to use scarce dollars. I think more competition for funds makes more sense.

MS. TURNER: Again, I'm in the same view about the (inaudible @). You know, I would emphasize on the IES grant funding. At its best, the IES is investing in a portfolio of projects and they wouldn't actually be taking enough risk if all of them had big, positive, or had, you know, all showed positive effects. Part of this is to actually take good ideas that are theoretically driven, look at the data, come up with a good way to assess whether something works, what its costs are relative to benefits. What Works Clearinghouse, I'm actually less certain that it's had a big impact on practice, but I think it has forced some discipline on researcher activity.

I want to come back to a notion that you made in your remarks, but again, this idea that collaborations may be really high return both among states, among districts, where you're going to get an economy of scale that you can't get in innovation and system development if you expect every small metropolitan area to, say, develop a teacher performance review program independently. There's got to be enough similarities between Des Moines and Topeka, you know, where there are gains from collaboration there and that's worth funding.

MS. SHEINER: Question there. Last question.

MR. VINER: Lloyd Viner speaking.

Keying off of Dr. Summers's chipping paint story this morning, environment is a very important thing to kids being motivated or willing to learn, and it's also a good segue to helping them go into the junior high/high school years. So it seems to me there's an opportunity to both -- well, to try and couple some policies with some local efforts to improve physical infrastructure, physical environment of the schools, as well as some of the social environment things as well. I think a lot of research has shown that social environment has a big impact on student success. So are there considerations or some real policy ideas, structural ideas that can be brought forth from that?

MR. MURNANE: Sure. I mean, having schools the kids and the adults who work in them want to be in seems like something we, as a country, can surely afford and should do. And we haven't done them. Many of our schools in Boston are more than 100 years old.

MS. SHEINER: Okay. I think that we better move on. I'm sorry there wasn't time for more questions, but thank you so much. This was such an informative panel. I appreciate it.

(Applause)

MS. SHEINER: We are going to start our panel because we are rushed for time, although Wendell Primus is not here yet, so hopefully he'll join us when he arrives, if he arrives.

I'm pleased to have Ted McCann, Assistant to the Speaker for Policy from the House of Representatives; Bob Greenstein, founder and president of Center on Budget and Policy Priorities; and Bob Doar from AEI next door. And this morning -- now we're going to talk about away -- moving away from the academics and talking more about the practical issues associated with implementation. And I want to sort of start again sort of big picture. We spent the whole morning talking about the evidence and academic studies and making sure the studies are done well and are identified about the effects of policies. And, you know, and this would have been a reasonable question I think a year ago or two years ago. I think we feel like it maybe is an even more important question now. It's like, so does evidence matter to the political process? You know, do these studies have an effect? And if so, like how? And I'm going to take all of you.

MR. GREENSTEIN: I think it matters a lot. I think in my experience in New York, in New York State and New York City, we paid attention to evidence. We paid attention to outcomes, and it had an effect on how you do your debate.

I do think you have to be careful about overstating the evidence, and you can't oversell. And I think you also have to know your audience. I think when looking at this sort of data about investments in human capital, I think the best findings concern Medicaid. Maybe food stamps behind that. Not so sure the finding is so strong in cash. And I think that when you go in and talk to a people who have a particular viewpoint, and here I'm going to talk to my friends, republicans, they're going to want to hear about employment effects, and they're not going to want it to be dismissed as unimportant. It really matters and they're going to want to hear the truth about that. And they're also going to want to hear the extent to which these necessity of investing in human capital is driven by an absence of another parent, for instance, or the issue of single parenthood. You can't just write a series of papers and make a statement about investing in new capital for young children and only talk about poverty and race and not also talk about single parents.

So I do think it matters a lot. I think the speaker in his better way proposal that was referenced mentioned evidence. Certainly, the hottest republican election to some people in town was the election of Todd Young in Indiana. He was an evidence guy, pay-for-performance guy. So I think people want to start with the premise that in the new world we live in now, evidence doesn't matter, certainly aren't helping their case.

MS. SHEINER: Bob, what's your take?

MR. DOAR: Well, if I didn't think evidence mattered at all, I mean, none of us up here would be doing what we do. But having said that, I think my take is a lot less sanguine than Robert's. I think evidence can matter a lot when decisions are being made in a nonpolitically polarized atmosphere, but when an issue has a lot of politics around it, you can find members simultaneously talking about evidence basing and then in the same statement or the same document making statements that are actually contrary to the evidence.

A couple examples of things that bother me now, we continue to have members of Congress and others say as though this was based on evidence that any poverty programs are a failure because the poverty rate is the same today as it was in the Sixties when every reputable analyst knows that that comparison is based on the official poverty measure that doesn't count hardly any of the programs that have expanded because they're generally noncash, and that there's broad agreement among analysts that poverty measures, particularly when you're doing historical comparisons, should count the noncash benefits. And then when you do, there's been a big reduction in poverty.

We've had hearings on The Hill. I was in one where there were two Republican and one Democratic witnesses and the witnesses echoed each other that if you're doing historical comparisons, you can't use the official measure or you will get misleading results. And members who were in the room and heard this agreement within days were repeating the line "everything failed, the poverty rate didn't go down."

One more example, if you look at a lot of the discussions on the hill, there was an earlier panel. I think Greg and Kristin were talking about how much policy discussions were in the context of perceived labor supply, labor market effects, and there's a particular line you hear over and over again in policy discussions that low income people in large numbers face 80 percent marginal tax rates and are often worse off if they take a job. We have a CBO study that came out a year and a half ago that says the median marginal tax rate is 14 percent on people below half poverty, 23 percent between half and one times the poverty line, 34 percent between one and one-and-one-half times the poverty line. And we did an extensive analysis. But how do you get to 80 percent? There are people who face 80 percent rates but you have to be in a narrow income range and get an atypical combination of benefits. So it turns out that about three percent of single-parent families with kids can be subject to something in the 80 percent range. It doesn't matter. The date is out there. It keeps being repeated as though this is the norm.

So I think where we run into challenges are where the data or the evidence don't support an ideologically-held position or aren't helpful in a polarized political fight, and I think our big challenge is how do we bring evidence basing even into those kinds of debates?

MS. SHEINER: Do you have a response?

MR. MCCANN: I mean, I guess I'll go and talk a bit about evidence more broadly in the political process. I think actually we do use evidence fairly regularly in the political process. I think you've seen Speaker and then Senator Murray move forward with the Commission on Evidence-based Policy. We mentioned Senator Young talking about pay-for-success. And then not only that but, you know, whenever I've been in the room trying to figure out how to move policies forward, even when it's republican, democrat negotiating things out, typically there's a conversation about what the correct policy is. Now, there's political conversations going on at the same time but it's not a conversation devoid of what we think the best policy is; it's a conversation based on a political reality and then combined with sort of what the best policy going forward we think should be jointly. And a lot of that is getting agreement on what the evidence shows. In a lot of controversial issues, the evidence is mixed. And folks, you can't really come down on one side or the other side. And folks are true to their priors and end up arguing from a probably more political point of view. But, you know, again, that's just part of living in a messy world.

MS. SHEINER: So you're saying --

MR. GREENSTEIN: And I --

MS. SHEINER: Go ahead.

MR. GREENSTEIN: And I would say just on the first example that Bob gave, most of the time when I'm in the room and that statement is made, it's always with the proviso that we have material hardship when properly measured with poverty but we haven't yet achieved a goal where people are earning their own ability to rise above poverty without the transfer payments. And I think that isn't just a political statement. I think there are Americans who care about having people get out of poverty so that they, at the end of the day, don't need EITC or food stamps or the value of public health insurance to provide the difference between what they earn or make on their own and the poverty line. So I acknowledge that political statement but we both have on both sides egregious behavior by politicians who say things that aren't quite right. But that one is a little more complicated because people do aspire to having the poverty measure be achieved without transfer payments.

MR. DOAR: I have to disagree. Robert, what you just said is fine, but in most public debates you go -- you look at various members of Congress and others on Sunday talk shows and the like, they do not express it more often than not in the nuanced way you just mentioned. It is used as an emblem and as evidence that any poverty programs have failed and we should radically change them. That is the most common rhetoric. The way on poverty failed. It didn't move the needle, a very common statement that shows we're doing things wrong and the current things don't work.

MR. GREENSTEIN: Except those same people say that welfare reform was a success.

MR. DOAR: I'm not getting into the welfare -- well, the welfare reform thing -- I think we can agree the evidence is very amiss.

MR. MCCANN: I think we can probably argue that different poverty measures show different things.

MR. DOAR: We can agree with that. The point is --

MR. MCCANN: And the more accurate poverty measure to use would be a consumption-based poverty measure which we do not have at the moment. So, anyway, these things --

MS. SHEINER: I also heard you sort of say though what people say in public and what they say in the back rooms is kind of different, and I sort of worry about the disservice done when things, you know, it's like, we know the facts, but then we're playing politics all the time. So that's something.

Is there anything that academics or think tanks could do better to try to get, you know, more agreement where the evidence really, like, everybody sort of agrees on the basic facts?

MR. DOAR: There's another problem here. I'm not sure exactly what think tanks should do about it. So we all know, I think everyone on the panel would agree, that on a lot of complicated issues -- I'm getting away from poverty measurement into research on impacts -- on a lot of issues there are multiple studies and they sometimes go in different directions. If there are five studies and four go in one direction and one goes in the other, it is not uncommon in this town for people for whom the one that goes in their direction, they cite only that one and do not tell you the other four exist. And then, hey, evidenced based, here's the study. And so I don't know how one achieves the following goal but there ought to be a norm, an increasingly common term these days. There ought to be a norm that when we're discussing an issue on which there is research and evidence, that if various pieces of research go in various directions, it's perfectly fine for someone to say why they think a given study or studies are the best ones, but you need to inform your audience of the studies that go the other way. And if you think they're wrong or not as solid, why do you think that? But what should be viewed with suspicion is any time there are multiple studies, if someone cherry-picks one and doesn't tell you about the others, if they're quality studies that go in the other direction, to me that's not evidence basing.

MR. GREENSTEIN: I don't think you can argue with that. I think it's a good aspect to look at the full array of studies. I also think it's important to when citing the studies, to be really clear about the findings and the margins between a finding that shows a significant impact and not. I think sometimes in town people have a tendency to say the evidence suggests, or the evidence shows, or there's a lot of evidence that proves, and then when you look beneath that and you find that really the difference in the outcome wasn't that great, and it was, as Bob says, there may be a couple other studies that showed something different. And I think that when that happens, at least in my limited experience here in town, when that credibility problems comes into effect, it really undermines the whole finding. And you don't want to do that. You want to be clear about the caveats and the extent to which whatever intervention, especially in poverty policy, had an impact but it maybe wasn't quite as big as you want to pretend it was.

I also would say one other thing, and that is that we can't underestimate the prevailing economic forces at work in the country that are sometimes more important or appear to be more important, especially in poverty, and that sometimes there's -- you had a question in something you said to us. You said, well, why doesn't everybody talk about this when all they want to talk about scoring, dynamic scoring? And I said, because -- a thought to me was because people are worried about the overall economy as much as they are worried about a particular intervention in poverty. And I just think that has to be considered.

MS. SHEINER: So we'll move on from that a little bit but it brings me to the next question which is, the thing that we tried to talk about today was to sort of bring bunches of different kinds of policies together because we think really these are policies that actually have the potential to be investments. We all want to raise future growth. We're worried about productivity. We're worried about supporting Medicare and Social Security, things that sort of will raise future growth and with interest rates so low it's a good time to do investments. So we're like really focused on like what's consumption and what's investment and how much can you make the case?

Is that something that politicians actually care about what happens if 10, 20 years down the road from something or really is it you've got to make the case that it's jobs or is it all about labor market stuff? Why don't you start?

MR. MCCANN: I think politicians care a lot about that. I mean, we just passed 21st Century Cures, which is almost entirely about sort of seeing, you know, down the road, benefits from reducing diseases. So I think, you know, when they're talking about the ACA, there was a lot of conversation about prevention. I think, you know, I think that's something that politicians consider fairly closely now. You do have the scoring rules that don't really allow you to capture any of those savings so it makes it more difficult to include them but --

MS. SHEINER: So talk -- going back to the evidence a little bit --

MR. DOAR: Can we stick on the growth for a moment?

MS. SHEINER: Yeah, we can stick on growth.

MR. DOAR: So, look. If you're a politician, you can be in either party, and you're favoring a policy -- it could be a tax policy, it could be a spending policy. More often than not you will claim that your proposal will promote growth. It doesn't mean it necessarily will but these claims are so common. I would also argue that the standards that are used for claiming growth effects are not equal on the spending and the tax side. Almost any tax cut that anybody favors in either party is often claimed as producing growth. In most cases, claims well beyond the evidence.

What's interesting on the social program side, your paper, I think, does a great job of summarizing and synthesizing this. I find that even after the last five to 10 years of research which you've captured so well, if I'm on Capitol Hill, and I'm not talking about republicans versus democrats here, it's pretty much the case with all of them, there is a real lack of knowledge of the research showing some of the long-term positive effects on kids, poor kids, certain kinds of program interventions as you discussed in your paper; whereas, among both parties there are kind of assumptions, often fairly evidence free or the evidence may come from a K Street lobbying firm that's producing data to serve its clients, that whatever is the tax cut or cut break du jour will have all these terrific effects on growth. I'd love to see somewhat more attention on the spending side, but for both of them, equally rigorous standards for what we know about growth effects. I think we're a long way from that right now.

MS. SHEINER: So is there a role for CBO here, for example, to be evaluating policies as sort of a standard part of its toolkit, not just the cost and the scoring but sort of saying, you know, we think this is likely to be growth enhancing or not or have a good impact on distribution and to do that -- well, I mean, CBO joint tax together for policies both on the tax side and on the spending side?

MR. DOAR: My view is it would be useful for CBO to do this on both sides as analysis and that CBO should do it on neither side for scoring. I don't favor dynamic scoring for taxes. Depending on the model you choose you get wildly differing results. I suspect that 10 or 20 years from now, based on whatever data we have then, if one is doing dynamic scoring on taxes, we might be in a whole different ballpark than we are today. My view is we should get the best analysis we can of those effects on both taxes and spending, but I don't actually favor doing dynamic scoring on either side of the budget. I think it undercuts the solidity of the fiscal numbers.

MS. SHEINER: Would it make a big difference do you think in terms of what kinds of policies were enacted though if there was some kind of score to it or if there was some kind of standard analysis that they would do and people would look to?

MR. MCCANN: Yeah. If you can find savings for a policy, then that makes a big difference.

MS. SHEINER: But probably within the window?

MR. MCCANN: Yeah, done within the window. Generally, that's how we score --

MS. SHEINER: So stuff that young kids, you know, happens 20 years down the road. You know, there's no numbers way of really making it --

MR. MCCANN: Well, I mean, if you can show that it's going to save money and show that it will be overall net positive, then that's going to be a mark in its favor. But in terms of the actual political moving it, it's very, very helpful to have a negative after a policy because then it can pay for some of the other things that we like to pay for that have a positive after it, so.

MR. DOAR: Let's face it; that's the main reason we now have dynamic scoring on tax policies. It makes tax cuts easier to pass. You may think it's totally legitimate. I'm not saying and making this comment it is or it isn't, but the main political motivation for beginning to use it was to make tax cuts easier to pass.

MS. SHEINER: One of the things that you talked about was sort of like we shouldn't oversell, you know, the research results. But you know, as Kristin mentioned, it's really, really difficult to get solid, broad research. You know, you have to wait 30, 40 years, 50 years to know that these things really, really matter. But we get snippets. We get snippets by understanding that, you know, young, the fetal situation matters a lot, but you know, there are a lot of snippets that we piece together. Now, that's not the same as saying we have incredible evidence. But, you know, at the same time, you know, not doing policies, while they may be incredibly helpful because we haven't waited the 50 years to see, you know, and then it'll be 50 years too late and it won't matter anymore, what should the bar be? Like, how should evidence play in and how good does the evidence have to be for policy to be based on it?

MR. MCCANN: I'd just say one of the big difficulties is if you create a government program, it's very difficult to shut it down. Right? So you create a government program. It doesn't show evidence. It's going to continue. And I think that's one of the big issues that conservatives especially have. Right? If we were going to look at something that shows promise but we would know that if it didn't pan out then we could turn it off or no longer continue the program, I think you'd probably see a lot more willingness to take risks in this area. But I think generally the thought is, well, if we do something, it doesn't work, it's never going to end and the spigot will continue going on forever, and then we'll just sort of add additional programs in the future, so.

MS. SHEINER: Are you weighing the probability that it will work against the probability --

MR. MCCANN: Right. Yeah, I mean there is sort of that general --

MR. GREENSTEIN: There are ways to evaluate the level of rigorousness of an evaluation and there are technical ways of determining when you have a good study that does a very, you know, randomly controlled experiment that shows stronger studies. And we know what those are. And when you have a good one, you want to go hard with it because you do want to appeal to Congress's desire to make changes now that make life better for the future. What I'm worried about is when you have a close call or when the caveats inside the study are actually pretty serious and you don't explain those as you present the results. Then I think you undermine the entire exercise because there is a gotcha game here and it's not helpful when people say, well, actually, you didn't explain the detail there or you made it sound like the impact was really significant when it really wasn't.

So that's all, I mean, there definitely is a bar. I can't describe what it is, but what I would say is if you don't have it, don't say you do have it.

MR. DOAR: I think a couple of challenges here, Robert's point about -- I certainly agree that particularly where findings are not statistically significant, people shouldn't be presenting them as real findings. By the same token, we all know that in the low income area, if you have an intervention and let's say there's an improvement for kids or employment, whatever, I'm making up 10 percentage points, well, the average person may say that sounds very small. We know in the world of policy that's actually a big effect. So we also have to help people with that.

I think one of the really tough things is what happens when we have social science research and policymakers draw -- and the rest of us draw policy conclusions from it, and then as the years go by we get more research that sometimes actually goes in the opposite direction. You've got two examples. For years the research indicated a lack of lasting effects from Head Start. Now there's newer research that suggests long-term positive effects. The same is true on moving to opportunity. The original results were disappointing in most respects. The Chetty-Katz-Hendren study has very striking and important positive effects for families with kids under 13 who use the vouchers to move to low poverty neighborhoods. In the area of welfare reform, the academic studies through about 2004 and 2005 were a lot more positive than the more recent academic studies. And I think the political system has some difficulty. It's enough to get people to use studies in the first place, and when they start using them and get used to it and a new set of studies come along that really go in a different direction, it can take years to get people to get their minds out of the earlier set of studies and they assume that that's still where the evidence base is.

MR. GREENSTEIN: Well, on the other hand, you can have a series of studies that showed limited impact of social interventions or positive effect of welfare reform. And then when you get the one that goes against that, all of a sudden that becomes the most important study ever done. So you have to be careful both ways.

MR. DOAR: We're agreed. There has to be more than one study when there's lots of studies.

MS. SHEINER: So let me ask a question about sort of what Sarah documented and just whether or not there's basic agreement sort of on both sides of the aisle about the finding that where someone is born and the family circumstances in which they're born in has enormous impact on their eventual outcome, their earnings, their health, all these things. Is that a fact that everybody agrees on or is there sort of basic disagreement on whether or not that's actually true or how true that is?

MR. MCCANN: Yeah, I think that's -- yeah, everybody sort of agrees with that.

MS. SHEINER: Everybody agrees with that?

MR. GREENSTEIN: Yeah, absolutely. Yes.

MS. SHEINER: So the disagreement is about -- is the disagreement about the remedies or what the federal rule should be in the remedies?

MR. GREENSTEIN: Well, what I've experienced in observing the debate is that it's both about what are the characteristics of the households that lead to those disparities and whether we should talk about all of them, which includes the absence of another parent or marriage, as well as race, income, neighborhood, community, or just a few of them. And as I mentioned earlier, I do think it's an important point for people that want to persuade especially conservatives about intervening in the lives of poor kids. It's important for them to start by including in why we need to do this the family issue. Because when you don't mention the family issue, you've immediately got a representative who is waiting for that. Where is that? Why haven't you mentioned that? I don't think anyone disagrees that it isn't part of it. Everyone agrees that. So just include it. So I think there's an agreement -- and I think Speaker Ryan speaks to that. He says in some of his remarks, he says, "It's not right that in American that the household in which you grow into determines the future of your livelihood." So there's an agreement on that. And then we have to talk about how and why we can persuade people on both sides to come together in interventions that reduce those disparities.

MR. DOAR: I think this can get complicated and challenging. So again, let's take the evidence synthesized in the paper on income effects on young kids. And the research indicating that particularly for certain kinds of intervention, SNAP, others, refundable tax credits, a variety of things, evidence that the added income early in childhood appears to be linked to increased educational attainment. In some studies, like Diane's in terms of girls who got food stamps early on increased employment, self-sufficiency in adulthood, we have a whole array of pretty strong studies showing that better educational attainment in school is linked to increased employment and earnings in adulthood. Okay.

So we have a challenge. We're going to have a debate this year among other things on importing TANF-style work requirements into programs like Medicaid, SNAP, and housing programs. The evidence on TANF-style work requirements as presented in another form in the same auditorium a few months ago by Bob Moffitt at Johns Hopkins, one of the leading authorities, academic authorities on this in the country, is that the biggest effect, not the only effect of those work requirements were lots of sanctions. Bob said they did larger effect in sanctioning in removing benefits than increasing work.

If you put these two pieces together would this mean that large-scale sanctioning by reducing income and potentially increasing toxic stress among very poor young kids could reduce the degree of their employment and earnings in adulthood, and would the net effect over time from these work requirements, unemployment and earnings be positive or negative? The answer is, I think, we don't know. We don't have the kind of data to draw the conclusion of which side would be higher. But the question isn't even being asked. I really do think that the findings on the long-term effects on kids has barely penetrated into policy debates on Capitol Hill at this point, and a challenge for the years ahead is can it become not the sole-determining factor but a factor amidst a bunch of other factors and other pieces of evidence as we have policy debates.

MR. GREENSTEIN: I agree that it's new and it is so new the extent to which it's penetrated into Congress is understandable in my view. But I also think that it's not part of the discussion. I think it will be part of the discussion, and I'm not sure that just the way Bob summarized the findings on sanctions and TANF was, I mean, I think the general perception is that the introduction of work expectations on AFDC through the TANF reform led to more work, less receipt of cash welfare, and less poverty.

MS. SHEINER: Let's open it up to the audience for questions. Our mics are coming around.

George?

SPEAKER: Hi. I don't know whether one would consider the tax foundation a provider of research or merely a reporter but what they're doing is I think of extraordinary importance right now. Tax reform, they did a study on the republican plan back in December and all they did was report the numbers with this dynamic scoring and report the numbers without dynamic scoring. I know you were on Joint Tax. How does one get beyond that kind of nonsense or is it just something we have to live with?

MS. SHEINER: Dynamic scoring.

MR. DOAR: The tax foundation is an example of my skepticism of dynamic scoring because the tax foundation model, we've written a paper about this and other people. The tax foundation model rests on a series of assumptions, some of which are, shall we say, outside mainstream economics. And the dynamic scores they get are very different than those CBO Joint Tax gets and those in the Tax Policy Center analysis issued this fall. And the range of results under dynamic scoring are so enormous, and I think that's because, you know, while in concept, who could disagree? You want to know the economic effects and if you could actually get good scores on it you would want to use those scores. In reality, it's hard to, in my view, to trust any particular dynamic scoring when so much depends on the assumptions underlying the particular model you elect to use to do the dynamic scoring.

MS. SHEINER: Questions, anybody? Over there. And tell us who you are, please.

MS. WEINSTEIN: I'm Myra Weinstein.

My question is about using evidence and what all of your takes are and the fact that there is a ton of evidence in the research community that goes unpublished, a lot with negative findings. And so when you have research presented to you in a world that really thrives on the cliff notes or the Twitter version of the results, whose onus is it to dig deeper into that information? Is it the presenter or is it the decision maker? And how do you advise people to go about that? Anybody?

MR. MCCANN: Yeah, I'd say honestly it's probably on the decision maker more than anybody. You know, when I was at Ways and Means we spent a lot of time talking with folks in the academic community but also folks that are on the ground to get a sense of, okay, does this academic finding make sense with what other folks are saying? So you weigh all of that and try to come to the best possible conclusion. But, you know, I think the academic is trying to show a change and some something nice and it's our job to make sure that it makes sense.

MR. DOAR: You could also attest to the importance of institutions like the Congressional Budget Office, the Congressional Research Service. There are a number of I know CRS reports. I'm thinking of some in the tax area but they are in the spending area as well, where they review --

MS. SHEINER: Evaluate.

MR. DOAR: Evaluate, review various pieces of research. It's also, it's not a government agency but this is another reason I find -- the Urban Brookings Tax Policy Center I think is a critically important institution. We need institutions that do high-quality work that aren't politically motivated and that people, regardless of their political view point hopefully can look to for help in sorting through a lot of complex data and numbers and helping them to evaluate an array of -- a blizzard often of information and sometimes numerous studies that go in different directions.

MS. SHEINER: Terrific. I think we're going to end it now. Thank you so very much for participating.

(Applause)

MR. WESSEL: I was kind of just about to say we saved the best for last, but I was afraid it would be insulting because of all the excellent presentations we had before. (Laughter)

I was also tempted to say that neither Congresswoman DeLauro or Congressman Reed need any introduction whatsoever, but I have always been haunted by something that Barney Frank said once when he was introduced somewhere, saying now, Barney Frank, who needs no introduction. His response was just once I'd like to hear that introduction that people don't think I need. (Laughter)

Rosa DeLauro is a congresswoman from my home town in New Haven. She comes from a very strong line of women politicians. Her mom was an alderman in New Haven, and is now 103 years old. Rosa has been in Congress since 1991, and before that, she was on the staff of Senator Chris Dodd.

I learned by reading her official bio that you are a member of 62 different House Caucuses. You can't possibly go to 62 House Caucus meetings.

MS. DeLAURO: No.

MR. WESSEL: Tom Reed, who comes from the Finger Lakes region of New York, has been in Congress since -- I forgot.

MR. REED: 2010.

MR. WESSEL: 2010. Somewhat less service than Rosa DeLauro. Before he came to Washington, he was the Mayor of Corning, New York, which is relevant, because we have had a lot of conversations today about the relationship between the Federal, state, and local governments, and he is the youngest of 12 children. I figured that is why he's a success in the House of Representatives.

MR. REED: You learn early.

MR. WESSEL: So, we began today talking about physical infrastructure with Larry Summers and Ed Glaeser. We have had conversations with economists who study transportation and water infrastructure. You heard part of the conversation we had about investments in human capital, both the evidence for and the evidence that is lacking that investments in education or transfer programs to low income kids can pay off in the future, which of course, is the definition of an investment.

One of the things that has haunted us all day long is, I think, a lack of confidence that if the Federal Government spends more money that it will go to those areas where there is the highest return.

I know both of you have spoken quite a bit over the years about why you think we ought to spend more on Federal infrastructure spending, so if an American, if one of your constituents said look, I'd like to have better bridges and I'd like to have Cliff Winston's heated runways. I'll tell you that story later.

But I'm not convinced that if you spend another $100 billion or $200 billion, or Larry Summers says $2 trillion over a decade in infrastructure spending, that it is going to go to where it gets the highest return as opposed to whatever member of the Senate happens to be in that particular Appropriations Subcommittee.

Let me start with you, Rosa. What do you say to that constituent who wants some assurance in an era where there is not much trust in government that the money will be well spent?

MS. DeLAURO: First of all, I think you have to take a look at what we are spending with regard to infrastructure. Since 2010, we have seen a real decline, what is it, half of one percent in terms of GDP, in terms of investment, public investment in infrastructure, at a time when we are looking at the need to be able to rebuild, whether it is a water system, whether it is our ports, whether it is roads and bridges, telecommunications, the vast array of public infrastructure.

But we are at a moment where I think it is very exciting. We have a President-Elect who has talked about one of his goals as being infrastructure, lots of talk about that during the campaign.

I'm going to get to the answer to your question by talking about the vehicles that are out there, and I will speak about one of them which I have really championed for a very, very long time, and that is an infrastructure bank where you are looking at public/private partnerships.

Two things are critically important. There is a public investment, a private investment in infrastructure, and the way the legislation is currently structured, and it has gone through many iterations over the years, the infrastructure bank gets you out from under the whole political process of members making a determination as to where that money should go.

With regard to the infrastructure bank, there is a board of directors that is selected by the President, confirmed by the Senate. There is a nine-member executive committee, which has a set of criteria by which to judge the projects. Cities, private entities, states, regions can apply, but the criteria being what is the economic benefit, what is its environmental benefit, what is its social benefit? Can it create jobs? Will it grow the economy? Is it a program of national or regional significance?

Those are the criteria for making a determination rather than Rosa DeLauro going in and saying, you know, who I can talk to and what I can talk about, this is what my district needs, but it's not overall in terms of a growth economy and preserving, as you pointed out, the taxpayer sentiment, that they want the money to go in the best direction and with the greatest good and the greatest economic benefit.

I think we can demonstrate that, but I think we do have to --

MR. WESSEL: You have to insulate the decision from the political process.

MS. DeLAURO: I believe you have to do that.

MR. WESSEL: That is what you think the infrastructure bank accomplishes?

MS. DeLAURO: It is one of its many accomplishments. I'll just leave it here on that score. It is one of my views that the reason why we haven't been able to get to an infrastructure bank -- my piece of legislation is going to four committees. It goes to Transportation, Ways and Means, Financial Services, Energy and Commerce.

You know, I think what's true, and I don't know if Tom agrees with me on this, no one likes to give up turf on Capitol Hill, and while we don't subsume everything else, particularly in transportation and infrastructure, we build on what they do, people are reluctant to give up that turf. That is the direction it needs to go into.

MR. WESSEL: Congressman Reed?

MR. REED: Well, first of all, thank you for the opportunity to be here with you today to talk about these topics and to be joined by my good friend from Connecticut. It is a pleasure to be here on the panel, Rosa.

When we talk about infrastructure, I think the initial conversation I had with my constituents, and we do town halls across the entire district, or across the state or across the country, listening to people, was one, we have to agree the investment is worthwhile, that investing in infrastructure is something we can all come together and say you know what, good roads, good water systems, good sewer systems.

They lead to a productive environment. They lead to a productive economy where we can grow the economy and make those investments that I think we all agree that is a priority of an investment.

The question you asked, is there a role for the Federal Government in that process. I believe there is. Being a former mayor, you know, that is something where you need to get the input from the local government. You need to get the input from the state government, and you need to make sure that we are all working in tandem together to make sure the infrastructure investment is getting to the right places.

One of the concerns I have had here since I arrived in 2010, and I do support the earmark band, but there has been a loss of the input between the branches of government that I have observed.

What I mean by that is a lot of authority has been delegated to the President, and then the President has delegated to our state capitals, and then all of the shenanigans that the earmark band was designed to take out of the system, they have just been driven underground, to be perfectly honest with you. They go into the state capitals. They go into the administrative side of the ledger.

I believe the more sunshine, the more spotlight you can put on the decision making to the issue of infrastructure banks or public/private partnerships -- I call it the front page of the newspaper test -- the more sunshine where a member, a private sponsor, or local government state official can be called out or put on the front page of the local paper and say this is a worthwhile investment in infrastructure, this is the details, as Rosa points out, the economic return, the social return, the environmental return.

These are why this project makes sense. The more we can work towards that type of system, I think that is --

MR. WESSEL: Is the infrastructure bank the way to do that or do you have a better way to do it?

MR. REED: I think an infrastructure bank, I think public/private partnerships that are subject to complete public disclosure. I think having a system like we are trying to do with the Miscellaneous Tariff bill -- I serve on the Ways and Means Committee -- these are the tariff relief provisions, where we redesign the system to where the Administration, the legislative branch, are all part and parcel of that process, to waive those tariffs, to relieve the tariff burden associated with that.

You have to go through this public process, website accessible, where you go through the process of sponsoring those types of waivers.

MR. WESSEL: When you talk to economists, very few of whom have ever run for re-election or election -- election. They probably wouldn't be re-elected. I think there was one once who was re-elected, but he's probably dead, Paul Douglas.

It was striking to me this morning that some of the transportation economists had very strong views on things that I suspect will be not politically popular.

One was, you know, we ought to have a higher gas tax, we ought to have user fees. That was one. Two, there seemed to be a mantra among transportation economists, which I learned today, which is rail, bad, bus is good, the idea that buses are a more effective way -- a more efficient way to get people around, and they are more flexible than rail, which has proven very costly. The third one was you know, when you think about it, the places we ought to be investing money are the places that are crowded, so that more people can move there. This was asserted this morning.

There ought to be less money for Detroit and St. Louis, because they already have so much infrastructure that they don't even turn on the traffic lights at night, and more money for Seattle and San Francisco.

My question to you is, is this sort of advice helpful? (Laughter)

MS. DeLAURO: The folks in Flint, Michigan are thinking that is helpful, with a water system which has lead poisoned 9,000.

MR. WESSEL: Right. Let's talk about the user fee thing. Economists love user fees. Economists think we ought to have more congestion pricing on highways, if we can't do it for the existing highways, then for the ones in the future.

Economists think gosh, if you can't pay for a rail system on fares, you better be sure it has some extraneities or you shouldn't be doing it.

Is that just completely impractical?

MR. REED: Well, I don't think it's impractical, but it's limited in the sense that a lot of folks are talking about increasing the gas taxes, which I stand opposed to. It is a very regressive tax, especially representing a rural area of New York. I will tell you it is very difficult for folks to fill up their gas tank and ask then to put on another 10 to 18 cents a gallon just to contribute to the highway trust fund.

That is something that I don't think people -- they throw out increasing the gas tax, but they don't look at the end user, the actual burden that is putting in a sense on constituents in my district, for example.

You know, user fees in the sense of a gas tax, that has a finite window. Everyone is projecting -- gas mileage usage has gone down, cars are becoming more efficient. We are moving to a more technologically based system that is going to make maybe that revenue source obsolete.

We have to be creative. We have to be looking over the horizon. We have to be looking down the road. That is where, I think, some of the folks that are more creative have a better path for us to explore.

MR. WESSEL: Such as?

MR. REED: Obviously, in the short-term window, we are looking at some of the onetime injections with repatriation and tax reform, I think that has a lot of bipartisan support, but then you get into driverless cars. There was a study that came across my desk selling the spectrum that it is going to take in order to control the transportation models 10-20 years out.

People 10 years ago would say that's crazy, that is never going to go anywhere. You're crazy, Congressman, what are you talking about.

If you look over the horizon, there is a lot of transportation models and industrial development that we are sitting here -- one of the best experiences I ever had was talking to a good family friend of us. He lived to be 101, God bless your mother, Rosa. He said Tom, in my lifetime -- I would ask him, what was the thing you enjoyed most about your life.

He said when I was born, I didn't know what a car was. Now, I have more power in my phone, and he had a cell phone at the time, than I ever imagined I would be capable of doing.

Being able to place our policy looking down the road and coming up with creative sources of revenue, I think is something that we lose sight of in this town, in particular.

MS. DeLAURO: I would just say Tom made comments about the gas tax, and I, too, am opposed. I think in a very practical measure, that's not going to happen politically. It isn't. There is the underlying comments and reasons, et cetera, but let's be realistic here, it's not going to happen politically.

I think we do have to take a look at identifiable revenue sources, as user fees. There are ways in which you can look at creatively financing these efforts. We are not without talent and without ideas in the way to try to move forward if we are serious about moving forward in this way.

Also, I believe with regard to infrastructure, first of all, I believe Abraham Lincoln would take real offense about the issue of buses versus trains since the Transcontinental Railroad was done, and during the Civil War, I might add.

MR. WESSEL: I don't think they had buses back then.

MS. DeLAURO: But it certainly changed the face of the nation and was an economic driver, which is what the infrastructure is all about.

If we're serious about wanting to grow this economy, to create jobs and jobs that cannot be outsourced, the way to do this is through rebuilding. That is a broad spectrum. I view this as top down. This is not bottom up. I will just say you have to have a public investment in this effort as well as a private investment.

What we would do, or what I would do with the infrastructure bank is it's $5 billion a year for five years to capitalize the bank. There needs to be a serious view as to what is within the realm of public responsibility when it comes to moving the economy.

MR. WESSEL: Let me ask you one quick question on this before I turn to human capital. There has been a lot of talk about infrastructure, as you pointed out, a lot of talk during the campaign. Speaker Ryan seems to indicate it's not very high on the priority list.

This Congress, two years, you think we will get a major infrastructure --

MR. REED: I do. I guess I take exception a little bit to reference to Paul's comments. I know Paul, served on a committee with him, served with the Speaker. Infrastructure investment is something that I think we all agree is needed in America.

Obviously, we have health care that is immediately around the corner. We have tax reform. I think tax reform and infrastructure spending are going to go hand in hand with each other, and that is a large opportunity I see on the horizon and in the Congress.

MR. WESSEL: Do you agree; do you think we are going to get at it this -
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MS. DeLAURO: No, I don't. First of all, the major focus at the moment -- I believe in the issue of infrastructure and public/private, that means public investment and private investment. The focus on repealing the Affordable Care Act at the moment, I think, is driving an agenda, so I'm not even sure that infrastructure is on a back burner. I don't think it's on a burner or will be on a burner, which is unfortunate.

If you take a look at the proposal that was made by the President Elect's team, dealing with infrastructure, it is all about privatizing infrastructure. It is about tax credits to private contractors, developers, an 82 percent tax credit for a limited amount of infrastructure development, which takes us in the wrong direction. That is not going to happen.

MR. REED: I guess I would disagree with that. What I think you are talking about, and even under the infrastructure bank proposal, and even John Delaney on the other side has had some creative ideas on this front, it is about leveraging that public dollar with the private dollar, and putting those together and using techniques that private equity and Wall Street have done historically, looking at international players, things that have happened in Great Britain as well as Hong Kong, where you leverage those dollars together, and that could give us an opportunity to stretch out those public dollars.

MS. DeLAURO: It's about leveraging, and if you take a look, there is the European Investment Bank. That is an infrastructure bank. The Asians now have an infrastructure bank.

MR. WESSEL: I think you said something earlier which I think is important. The Federal Government seems to have no problem raising money, it's kind of extraordinary how much the Treasury has been able to raise at very low interest rates.

One can argue about the best way to finance infrastructure, but it seemed to me the most significant point you made was that whatever you think of leveraging, it's important to have some way of setting priorities so it just doesn't end up to be who happens to have made the big campaign contribution.

MR. REED: Absolutely. That is where the public scrutiny is and the sunshine is.

MR. WESSEL: Let me turn to human capital. You may have heard the end of the conversation that Louise Sheiner was having with our colleagues. I should tell you that Wendell Primus apologizes that he couldn't make it, that was unfortunate.

I think there is a question that we have about whether all this academic research, whether it is on food stamps, pre-K, the best way to design financial aid for college, the way to help kids choose better colleges, whether any of that actually makes a difference when members of Congress think about these issues.

On top of that -- let me ask you that. Do you care about the research, even know about it?

MR. REED: Absolutely. I can't attest to all 435 members in the House and 100 members in the Senate, each has their own unique --

MR. WESSEL: You don't have to take responsibility for the rest of those crazy people.

MR. REED: What I find down here, like any organization, 99 percent of the people are good, hard-working men and women. They came here to serve their country, they have an idea of what they want to bring to the table, and they do the work. Doing the work means you read the studies, you actually stay after hours, you bring the pile home with you, or when you are traveling home, you will see us on the airplanes, you will see us on the trains.

You will see me driving back to New York six hours each and every way with my staffer, who lives in the same town and drives home at the same time, using that time to read the NBR papers at the same time. My chief of staff lives with his family three blocks from my house, and it works out fairly well. It gives me 12 hours each week. That is some of the time I dedicate to doing that reading.

That is so important. I will tell you as a member, anybody that walks into my office and makes an argument for a proposal, I'm going to open up the door because

I know there is a 180-degree position that can be supported by a study, that can be supported by some type of official position.

All we have to do as members is hopefully do the work and make an informed decision, and be able to stand in front of our constituents, like I do when I go back every weekend in front of those town halls that we conduct all the time, say this is why I have made this decision, this is why I am going in this direction. I will tell you, constituents, the response I get is very positive.

MR. WESSEL: Do you think the research makes a difference?

MS. DeLAURO: I do. I have thought that for a very, very long time.

MR. WESSEL: What do you think scholars and universities and think tanks could do to make it more useful to members of Congress?

MS. DeLAURO: I thank you for the question because I have worked on this for a very, very long time. I think there is such a synergy that can be developed through academic research and public policy thinkers.

I got engaged very, very early on with something called the Tobin Project at Harvard, which brought together academicians. At the time, she was in academia, and that was Elizabeth Warren, when I first met Elizabeth. We started to talk about -- actually, in my living room, because I held public policy gatherings, and maybe you have been to them.

She predicted what was going to happen with the housing market, and she talked about the Consumer Finance Protection Board.

The point being the value of think tanks that are out there, you know, from my point of view, the Roosevelt Institute, API, a whole variety of other agencies. Bob Greenstein's group, Center on Budget and Policy. This is all information and data that is important to inform public policy initiatives that I think we ought to be engaged in.

We ought to look at both sides. We ought to understand both sides of the issue, but I think it is foolish for us and for some members to eschew research and scientific knowledge. I think we have an obligation and a responsibility to move on the best information possible in terms of developing public policy initiatives.

MR. REED: If I could, I'll just share a story with you, and this is something I learned early on in my life. As you mentioned, I'm the youngest of 12. My father passed when I was two, and my mother was a single mother. There were six of us left in the household. My father was a military man.

In the first eight births, my mom was told by her doctors that she should have a cigarette while she was pregnant, that the scientific studies that the doctors were articulating to her said that was the best thing to do, to relax, strike up a Pall Mall. (Laughter)

Does that make sense to us today? That story I share because it makes sense to me now in the sense of there are studies out there that could potentially be classified like that 20/30/40 years from now, so a good healthy dose of synergism is good, build trust but verify, was something that was engrained in me from early on.

Being the youngest, I am proud to say she stopped smoking. (Laughter)

MR. WESSEL: Yes, of course. One could also ask is the study funded by cigarette makers or by an independent group.

We had a lot of conversation today about there seems to be an evolving body of research. I don't think it's conclusive, but there is increasing evidence that investments in low income kids pay off in the form of healthier, more productive adults. I don't think I'm overstating the academic thing, and we know more than we did a decade ago, because we have had more exposure to some of these programs and we are getting better at using big data from all sorts of sources.

Do you think if I said that in the Republican Caucus, people would say yes, you're right, or would they say oh, you are just one of Bob Greenstein's --

MR. REED: No, I think what they would say is what I will say to you know, making that investment, is it the cash injection, therefore, more cash guarantees a better outcome, if that is the argument, if that's the pitch to the Republican Conference, that's not going to be well received.

If it is we can invest in this and it has shown to move the needle this much further --

MR. WESSEL: "This" being a particular program.

MR. REED: "This" being a particular program, and what the investment does, not just giving cash, but what it does that has moved the needle. That is still an open question.

I listened to the previous panel at length, and I was intrigued by that. The question was what is the investment doing that is moving the needle to the degree, and that is sometimes lost in the studies. You need to look at the details.

MS. DeLAURO: There is such ample data and information about the programs that encompass the social safety net. Housing assistance, food stamps, child tax credit. By the way, in so many of those instances, those were bipartisan measures, historically bipartisan measures.

They have proven this institution -- I think it was Brookings that said that the social safety net programs lifted about a third of recipients out of poverty. We have gotten Census data which now shows us that again the social safety net programs, 38 million people, including 8 million kids, lifted out of poverty.

Tom, I would just say this very frankly, not saying it to you, at the moment, whether it is the SNAP program, food stamps, if you will, housing assistance, Medicaid, et cetera, the view is these are programs that we should be undoing, and there is a formidable challenge.

I think Greenstein said it in an article, I believe that the poor and working families are in grave harm over the next several years, and I don't say it lightly, I don't say it as a political "gotcha," I say it as someone who for the last 26 years has focused time and attention in these areas.

The first day of this session, the move on the Rules package to take mandatory programs and to make them discretionary programs will just give you -- that is transparency. What are the mandatory programs? Social Security, Medicare, Medicaid, Pell grants, food stamps.

I'm on the Appropriations Committee. We do not have enough discretionary funding today to fund the programs that are there, and we are behind the curve as a result of sequestration.

So, don't tell me -- the data is there, we can choose to understand it and act on it, or we can ignore it.

MR. WESSEL: Congressman?

MR. REED: The issue that you're raising is a very legitimate issue in the sense that from our perspective, from my perspective, making the investment is one side of the equation. We have $20 trillion worth of debt.

When you have a budget deficit, that all economists, all academic studies, will tell you is not sustainable on this path, so why not bring more of that mandatory spending, why not bring more of that into the sunlight, put more sunshine on it, to make sure that those precious hard-working taxpayer dollars are going to the highest and best potential return in our communities and across the country.

That is what a fiscal conservative such as myself, when we have this conversation with you, we are willing to make that investment, but we have to make sure that we are not just going to maintain the status quo because it is in mandatory spending or this is the way we have done things for decades, it is time to bring it out. It is time to bring it into the sunshine, and where we can find common ground, I can assure you folks like Rosa and myself who are committed to having the dialogue, we will find the common ground on the best programs that offer the highest return on the investment we are provided.

MS. DeLAURO: I can agree on finding common ground on the best return, Tom, but what I can't agree with is why there is no second thought given, and there is thought being given now to eliminating the estate tax. That is less than one percent of the nation.

First of all, the number now is up to $10 million in an exemption, and now we want to eliminate it, cutting off revenue, but we have now had 17 hearings in the Agriculture Committee on where the fraud, waste, and abuse is in the SNAP program. They can't find it. They cannot find it.

It has a three percent error rate, where you can go to other programs across the Federal spectrum and find an increase in error rates.

It is such a dichotomy. Look, what should constitute looking at who ought to be helping to pay the bill.

MR. REED: What I would ask, and if members are willing and sincerely committed to finding the common ground, where would you suggest we look to find that inefficient wasteful program that you have identified? If it is not SNAP, if it is not food stamps, is it the earned income tax program, which --

MS. DeLAURO: Again, let me just say --

MR. REED: I would just offer that as a question.

MS. DeLAURO: Why do you not speak to me about tax breaks? Why do you not talk to me about tax breaks for the wealthiest people in the nation? It wasn't discussed in the last panel, but the Senate did put out a piece of where the Ryan budget would go in terms of the beneficiaries and where the tax cuts --

MR. WESSEL: So, the premise of your thing is there must be some waste and inefficiency in these programs.

MR. REED: I would think there is. If you're spending $3.6 trillion and you think every program of the Federal Government is 100 percent effective and efficient, then you're not living in the real world.

MR. WESSEL: I want to take a few questions, if there are any. Gentleman there in the blue shirt.

MR. BAWLING: Hi, I'm Frank Bawling. One of the things about the Federal budget is say if I personally buy a case of beer, that's spending, if I buy stock in real estate, that's investment, but the Federal budget doesn't distinguish.

Relative to human capital, kind of the new thing is talk about income share agreements, and the program at Perdue, you can pay 3 to 10 percent of your future earnings for 5 to 10 years in exchange for education.

The Federal Government is actually taking 25 percent of my earnings for the rest of my life because that is the tax rate I'm paying because I have a college degree. That to me is an awesome investment for the Treasury. That is not reflected on budget scoring.

How do you distinguish education -- the investment in education? It's not spending, it's an investment.

MR. WESSEL: I'm going to take a couple of questions. Go ahead.

MS. WORTH: I'm Mitzi Worth. I've been connected with the Federal Government, I came in with John Kennedy, which tells you how old I am.

MR. WESSEL: 26, right?

MR. REED: 24.

MS. WORTH: The thing I'm aware of is the rigidity of big institutions, and if you want to make them -- I was at DOD when we started shifting from paper to IT. We ended up at the Navy having 1,661 different software programs because of regulations. Somebody has to start looking at these crazy regulations and how we change that to improve the system rather than just saying you can't spend money on --

MR. WESSEL: Those are two good questions. I'm going to reframe them slightly. The first question really had to go with something which we have wrestled with, have we set up a budget system which discourages us from making investments, because you don't get the scoring credit. There are some tax cuts which probably do pay off in the future, maybe not as many as some of the proponents say, there are some spending programs which do pay off in the future, but probably not as many as proponents say.

Is there something about the way we do our budgeting that is leading us to be too focused on the short term and not enough on the long term, do you think?

MR. REED: I totally agree with that. Being a relatively new member of Congress, it is amazing to me when you just had a status score, and I heard the debate on the prior panels that dynamic scoring is a bunch of hooey, as some people are arguing, there is real world effects of these policy decision making efforts that we need to take into consideration.

If you just lock into the status quo, I have seen many proposals die on the vine that were creative, innovative, but because of the status score, weren't going anywhere, and you knew common sense. You go back and you talk to people. That's why I always go back and listen to people and talk to people.

Doesn't this make sense, we make this investment, and you get this return? If you don't believe in dynamic scoring and tax cuts lead to economic growth, then every governor in the United States of America is on the wrong path, because every governor is putting out economic development proposals that reduce the local property tax burden, that reduce the sales tax burdens.

As a mayor, that's what I saw, policy coming from our governor's office in New York, which is one of the leading states in the country.

The point I'm trying to make is the status scoring budget process does limit good policy discussion often around here because everyone is scared --

MR. WESSEL: Does that apply to spending as well as revenues?

MR. REED: Both.

MR. WESSEL: I don't think anybody said dynamic scoring was hooey. I think there was some question about what is the appropriate way to use it given the current state-of-the-art.

Is there something we could do to make us less short term oriented, other than having the House run for election every six years instead of every two? (Laughter)

MS. DeLAURO: Never going to happen. In the Affordable Care Act, those of us who were strong proponents of the Affordable Care Act, when we had the whole debate about preventive care, which we could not get scored.

MR. REED: That's a great example.

MS. DeLAURO: Honestly, we were saving money, but they would never allow that to move forward. On the other hand, what we are not doing is taking a look at the beneficiaries of those tax cuts, who wins, who loses. Again, research and studies out there demonstrate who have been the beneficiaries of these tax cuts, and they have led to income inequality, an issue that we talk about a lot, and where you have to put some of the --

MR. WESSEL: This question raises something which came up in our earlier discussion, much earlier in the morning, about whether one of the problems we have with infrastructure spending is that it just takes too long to get things done, and the reason is because we have allowed too many people to have the right to veto, we just overdid it.

I know Congressman Reed probably agrees with that. Do you think there is something to that, or is that just hooey, to quote the congressman?

MS. DeLAURO: That too many people have?

MR. WESSEL: Too much regulation is slowing down our infrastructure spending and too many people can say no.

MS. DeLAURO: It always is the devil is in the details. You tell me which are the regulations you want to roll back, you tell me where you want to go with this, and then we can have a conversation.

It is not just that regulatory reform is the answer to your prayers here. That is not the case.

MR. WESSEL: Not your prayers.

MS. DeLAURO: Again, it is all about what the details are and what we are cutting back on. It sounds good, but it often isn't.

Can I just say something?

MR. WESSEL: Please.

MS. DeLAURO: Program integrity, program integrity across the board, we don't do that in an even-handed way. There are some programs that get more scrutiny with regard to program integrity than others do. Someone who is supportive of defense appropriations, I come from a defense dependent state, I would apply program integrity across the board to find out in fact which are those that are working and which of those are not working.

MR. WESSEL: We have to make efficient use of our infrastructure here at Brookings, which means ending on time so the room can be prepared for an event later today.

I want to thank, of course, the Congresswoman and Congressman for coming down here to talk. It is always reassuring when members of Congress come because they look much better up close individually than you do as a group. (Laughter)

I also want to particularly thank my colleagues, Carrie Grantis, Lilia Cherchari, Anna Molokai, and Peter Olson of our staff who helped make this possible, and a number of other people at Brookings.

Finally, look at your feet, if there are papers and cups there, there is recycling in the back, and we would appreciate if you would pick them up.

Thank you all for coming. (Applause)

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Expires: November 30, 2020