

THE BROOKINGS INSTITUTION

STATE ROADS TO ECONOMIC RECOVERY:
POLICIES, PAVEMENTS, AND PARTNERSHIPS

Washington, D.C.

Friday, February 25, 2011

PARTICIPANTS:

Welcome:

ROBERT E. RUBIN
Co-Chair, Council on Foreign Relations
Former U.S. Treasury Secretary

PANEL ONE: BUILDING THE NEXT ECONOMY IN TODAY'S FISCAL CLIMATE

Moderator:

BRUCE KATZ
Vice President and Director, Metropolitan Policy Program
The Brookings Institution

Panelists:

MICHAEL FINNEY
Chief Executive Officer
Michigan Economic Development Corporation

ROBERT PUENTES
Senior Fellow, The Brookings Institution

THE HONORABLE ED RENDELL
Distinguished Senior Fellow, The Brookings Institution
Former Governor of Pennsylvania

LOU ANNA K. SIMON
President, Michigan State University

PANEL TWO: TOOLS FOR EFFICIENT STATE INVESTMENT

Moderator:

MICHAEL GREENSTONE
Senior Fellow and Director, The Hamilton Project
The Brookings Institution

Panelists:

ANDREW ANG
Ann F. Kaplan Professor of Business
Columbia University

EDUARDO ENGEL
Professor of Economics
Yale University

MATTHEW KAHN
Professor, Institute of the Environment,
Department of Public Policy
Department of Economics, UCLA

TYLER DUVALL
Associate Principal
McKinsey & Co.

* * * * *

PROCEEDINGS

MR. RUBIN: I'm Bob Rubin and, on behalf of Bruce Katz, the Director of the Metropolitan Policy Project at Brookings -- and on behalf of my colleagues at Hamilton, also at Brookings -- I welcome you to today's discussion of the rule of states and cities with respect to economic development and our nation's economic growth strategy.

The Metro Project was founded roughly 15 years ago, and has been a pioneering and major force with respect to focusing on regional and state development, doing policy development, analysis, and advice for states, countries and cities.

The Hamilton Project was founded about six years, and it's really a quite extraordinary combination of academics, policy people and financial people. And its objective was to -- and is to -- provide policy development and promote serious debate with respect to competitiveness, growth, broad-based participation in that growth, and economic security for the American people in a rapidly transforming global economy.

Each organization is described more fully in your materials. Let me just say that, from the perspective of one of those involved in the Hamilton Project, that being at Brookings and having the Metropolitan Project also at Brookings has facilitated our working together cooperatively. And it's been a wonderful experience. And I think that by working together in this way we've been able to much

more fully -- well, to draw on both our strengths to much more fully explore the very important subject we'll be discussing today.

In addition to those of you in the auditorium, where I see we have standing room. And I don't think we have more seats. So -- oh, there are more seats -- Oh, and in the overflow room. We also have participants around the country who are listening, or participating, through a live webcast.

Let me begin our discussion with a few brief contextual comments on the economy, and also on the role of states and regions.

If you look at the shorter-term economic projections, projections for the next couple of years have been increased pretty much by all analysts. Nonetheless, we still face serious risks. Recovery will be the slowest from any recession in the post-World War II period. And we have a terribly high level of unemployment that will recede -- or it's expected to recede slowly.

If you look to the longer term, this country has enormous comparative advantages -- a dynamic society, an entrepreneurial culture, flexible labor and capital markets, even our demographics and much else.

Thus, we have the potential to be strong and to succeed, even in this rapidly transforming global economy. But to meet that potential, we have to address hugely consequential challenges.

One, addressing unsustainable Federal fiscal deficits that pose multiple serious -- and I would say, in many respects, even dangerous -- risks to our economy.

Two, making public investments in areas that are absolutely critical to competitiveness and broad-based income growth.

And, three, accomplishing change to increase the effectiveness of K-through-12 education, infrastructure, our health care system, and many other areas that are central to growth.

In this context, the states can contribute enormously to both their own and our nation's economic well-being. But the way forward is difficult.

As we all know, virtually all of our states are required, on an annual basis, to balance their budgets. And most of our states face current and even more seriously, in the longer term -- serious or severe -- structural deficits.

Thus, our states are going to have to make difficult trade-off choices between providing for their most vulnerable citizens, and for their employees, and investing in education, infrastructure, and the other areas that are critical to the economic future of their people.

The objective, it seems to me, is to balance the trade-offs so the essentials on both sides are met. And in that context, the states are also going to have to deal with the question of their tax structure and their tax rates.

The investment opportunity for the states -- and that, of course, is the subject of our discussion today -- breaks into two parts. Number one, improving the effectiveness of government programs that support growth, where states and cities play a major role -- some that I've already mentioned, K-through-12 education, infrastructure, health care, and others like that. And, two -- very importantly -- building on local strengths that will provide a comparative advantage to the states in the national economy, and help provide the national economy with a comparative advantage in the global economy.

Identifying and building around our local strengths, and more effectively conducting the traditional economic roles that states and cities play can be a powerful part of a national growth strategy.

To discuss these subjects, we have two outstanding panels. The first is "Building the Next Metro Economy in Today's Fiscal Climate." The panelists are Mike Finney, the Chief Executive Officer of Michigan Economic Development Corporation, Robert Puentes, Senior Fellow and Infrastructure Initiative Director, Metropolitan Policy Program at Brookings, the Honorable Ed Rendell, former Governor of Pennsylvania, and Distinguished Senior Fellow at Brookings, and Lou Anna K. Simon, President of Michigan State University.

The moderator is Bruce Katz, Director of the Metropolitan Program, and Vice President of Brookings.

The second panel is “Tools for Efficient State Investment, and will consist of brief presentations summarizing the Hamilton Project papers that are in your materials. And then there will be a discussion of those papers by the panelists. The panelists are Andrew Ang of Columbia University, presenting the paper “Lowering Borrowing Costs for States and Municipalities,” Eduardo Engel, Yale University, presenting the paper, “Public-Private Partnerships,” Matt Kahn, UCLA, presenting the paper, “Fix it First, Expand it Second, Reward it Third: a New Strategy for America’s Highways,” and Tyler Duvall, former Undersecretary of the U.S. Department of Transportation, and now Associate Principal, McKinsey & Co, discussant.

The moderator will be Michael Greenstone, the 3M Director of Environmental Economics, Department of Economics at MIT, and Senior Fellow and Director of the Hamilton Project at the Brookings Institution.

With that, Bruce, the podium is yours. (Applause.)

**Panel Discussion: Building the Next Economy in Today’s Fiscal
Climate**

MR. KATZ: So, as folks get mic'd up, I think I'll start, and build on Bob's excellent framing comments. And I just want to thank Bob, you know, for his leadership and vision in creating the Hamilton Project, and housing it here at Brookings.

And I also want to thank Michael Greenstone and Karen Anderson for what has been a very productive collaboration leading up to this forum today.

So I want to build on Bob's comments. And, clearly, what we're trying to do here today is have a very clear conversation and discussion about the state role in shaping economies -- both to put people back to work in the near term, raise revenues for critical services and investments, but also to generate prosperity for the long haul.

So let me make three overarching comments, and then we'll get into what I hope is a spirited back-and-forth with the panelists.

First, the governors and the states are really under tremendous pressure -- not just to balance budgets, and not just to restart their economies but, frankly, to transform their economies. There really is no going back after this recession to the economy that preceded the recession -- one that was characterized by debt and hyper-consumption.

I think everyone, the mainstream economists and business leaders, in particular, have said we need to move forward to different kind of American economy -- one that is powered by exports and low carbon, and innovation and, hopefully, rich with opportunity. I mean, clearly, when we think about global demand, rising nations, the energy imperative -- made so much more forceful by what's happening in the

Middle East -- the traditional role of innovation, we have to conceive of and then execute a very different kind of economy in the United States.

Now, the second point -- the states are critical in delivering on that vision for several different reasons. The first reason -- that Bob mentioned -- is they have such a fundamental role in both financing and then delivering so many of the assets that ultimately create economies - - whether it's education, whether it's infrastructure, whether it's energy, whether it's innovation, manufacturing. We all know about the state role in the financing of K-through-12, in the financing of higher ed, in the financing of infrastructure. Michael and I have an op ed today which lays that out.

The second role that states play, however, is not normally discussed, and that is as the overseer of their cities and metropolitan areas. Cities and suburbs are just creatures of state law.

Yesterday, the Brookings Metro Program put out a report which gave the latest information on the role that metro economies play in their states. And what we found is that metropolitan areas generate the majority of GDP in 47 of the 50 states -- including such rural states as Kansas and Nebraska and Iowa and Arkansas. In 15 states, one metro generates more than the majority of the GDP. Think New York or Boston or Atlanta or Minneapolis or Seattle. In another 16 states, two metros generate the majority of the state economic output. Think

Oklahoma City and Tulsa, or Grand Rapids and Detroit, or San Francisco and L.A.

Metros are the drivers of their state economy -- particularly as we think about moving to this different kind of economy.

So, first point, we need a vision for a different kind of growth. Second point, states and their metros are critical to delivering that growth. Last point -- as Justice Brandeis said almost a hundred years ago -- states are the traditional laboratories of democracy in the United States. They are really on the vanguard of policy innovation. Whatever states are doing today, the federal government will be doing tomorrow to scale it up and bring it national.

The discourse in Washington today, as the governors arrive in town, is, frankly, about the size and cost of government -- as it should be. But I think, based on this panel and the next excellent panel, the states are also going to innovate with regard to infrastructure finance, with regard to clean tech, with regard to export promotion, with regard to urban regeneration. And the innovations that happen even in this constrained fiscal environment will, frankly, affect national discourse and federal debate for the years ahead.

So that's the frame for this conversation. It's really to focus on something which hasn't been focused on in the past several months -- were focused on, frankly, in the 37 gubernatorial elections last year, is how to grow jobs and how to transform economies.

We have an excellent panel here. And let me just introduce them quickly, and then really move into questions.

On my far left is Rob Puentes, who is my colleague at the Metropolitan Policy Program, head of our Infrastructure Initiative.

Former Governor Rendell, former Mayor of Philadelphia, Ed Rendell -- and the first Distinguished Senior Fellow in Public Innovation at the Brookings Institution, to basically honor and reward years of public service.

Lou Anna Simon, head of Michigan State University. I don't think I got this from Wikipedia, but I think (laughter) -- but ninth largest university in the country? More than 47,000 students -- and really perceived as the premier land-grant institution among higher ed in the United States.

And then Mike Finney -- head of the Michigan Economic Development Corporation, and now head of what essentially amounts to a jobs cabinet for Governor Rick Snyder, the newly-elected Governor of Michigan.

So I'm going to start with Mike. And you have a special role -- not just because of your official duties, but because of your longstanding relationship with Governor Snyder. Governor Snyder was the Chair of Ann Arbor SPARK, this nationally-renowned entrepreneurial institution in Ann Arbor when you were running it.

What is your philosophy -- and the Governor's philosophy -
- to restarting transforming the Michigan economy, kind of programs
and initiatives and public-private partnerships are you considering as
you begin your work.

MR. FINNEY: Right. Yes.

So Governor Snyder, during the campaign and, of course,
since taking office, his approach has been fairly simple. We're going to
reinvent Michigan, and we're going to do it in ways that are fiscally
sound. So we're trying to find ways of reducing the burden on
businesses so that businesses can continue to invest in our state, and
find ways of creating, you know, better educational opportunities for our
citizenry so we have the talent base that we need to be successful.

And we want to make sure that we keep it simple, fair and
efficient. And if we're simple, fair and efficient across the board -- with
all of our citizenry, with all of our businesses -- we have a very, very
high probability of being successful.

The Governor announced his budget a little over a week
ago. And so I've had a very interesting week, responding to questions.
(Laughter.)

And it really covers the entire waterfront. It's everything
from you know, the public schools, to senior citizens, to targeted
industries that are in one way or another affected by what we do -- or
what he's proposed.

The central theme of his proposal, however, is a flat-tax that would apply to C-corporations in the State of Michigan, at a level of 6 percent -- versus a Michigan business tax that was very complicated. And I won't even try and go into the details of how that worked.

The long and short of it is, by going to a flat-tax for business, it represents something on the order of 60 to 70 percent reduction in overall costs for C-corps. Keeping it fair. I mean, that's simple. Keeping it fair, trying to ensure that the tax burden is, in fact, spread across the entire base that we have in the state, and not trying to pick winners and losers in awarding exceptionally large tax incentives to select groups and, in other cases, not awarding incentives at all. So keeping it simple.

And then making it efficient, so that we can get things done very, very quickly. Government, as you know, tends to be a little bit bureaucratic, somewhat loaded with red tape and a lack of efficiency. So we're trying to do things that are essentially efficient.

So, in terms of simplicity -- you know, the description that I just described of going to a simple business tax -- fair, distributing the cost of providing services in our state across the entire population, both the citizenry and businesses, and then being efficient, doing things at a pace that we haven't up to this point.

Again, if his tax plan were to move forward as is, it would represent about a 1-1/2 billion dollar reduction in overall cost for

businesses. So we think that's the way to rebuild our state, and to get it on a path toward economic prosperity.

And, needless to say, Michigan led the state -- and you won't hear me say that often -- but we led the state into the recession. And that's not a position we want to be in. But we also want to lead it out.

And the bold vision that the Governor has for our state I think is putting us on a path toward leading it out. We will, in fact, solve that structural deficit that our state faces -- and that many states face -- as a result of the initiative that the Governor is moving forward.

MR. KATZ: Let me ask a follow-up question about the budget and its sense of priorities around different kinds of investments.

I think what's quite interesting about Michigan is you actually lead an executive group within the state cabinet that includes not just the Economic Development Corporation, but the housing agency, the Department of Transportation and, I gather, the skills training piece of workforce development.

How -- as the budget was constructed, how have you thought about which kinds of investment should be prioritized, given the essential role of education and infrastructure and so forth in moving towards a different kind of economic growth model?

MR. FINNEY: Yes -- so what Bruce described is that our governor set up six group executives. Essentially, if you take all of

state government, there are now six leaders responsible for groups. My group happens to be the economic group. It includes the components that Bruce described.

And what the Governor did -- his first State of the State Address -- he really talked about the relative importance of this economic group as the tool that we're going to use to drive our state forward.

So in terms of priority for budget, the priority is within economic development, workforce development, community development, and transportation. You know, those are the cornerstones of how you build a robust and vibrant economic climate within a state. And that's where the priority is for funding.

MR. KATZ: Right.

Lou Anna, the role of higher education. So, when I think of Michigan, obviously we think about the Big Three, and we think about transportation and logistics and the border with Canada. But we also think of the jewels of the realm -- Michigan State, University of Michigan, Wayne State, other higher-ed institutions which probably are as good, if not better, than another state system. Now, Governor Rendell is going to jump in there. (Laughter.)

How do you perceive the role of MSU, in terms of supporting but also leading Michigan towards a different kind of economy.

DR. SIMON: Well, first of all, I would say that we're a state without a dominant private university. So other states, as they do their configuration of universities, often are anchored by one or more major private universities. In Michigan, the anchors are all the three public universities that are three Carnegie-1 extensive research institutions. And, with Michigan and Michigan State being part of the Big Ten, where all the members are AAU institutions, so there's a different philosophy, I think, in Michigan than you would find in some other states, in terms of higher education.

The second thing is, it's not a system at all. It's a free-for-all. (Laughter.) It has benefitted from a very entrepreneurial spirit, without a state governing policy. So each institution could be as entrepreneurial as it chose, within the definitions of how its governing board determined its role in the state, nationally and internationally.

Three of the institutions -- Wayne State, Michigan State, University of Michigan -- are publicly-elected boards, through a political process that is determined by political parties, nominating boards. The others are appointed by the Governor. So it's a very unique approach.

We've benefitted, I think, over a very long period of time -- and I'll speak about Michigan State -- where the partnership among Michigan State and Wayne State have always been there in working together on behalf of the people of the State of Michigan, with Michigan State having its really fundamental land-grant philosophy that we are

the university of the State, and responsible as a knowledge-spire for every part of the state.

So that sort of basic land-grant philosophy is something that's very, very strong at Michigan State, and in the State of Michigan - - partnering with the University of Michigan and Wayne state, and other institutions.

The second thing about that philosophy is that many places and institutions think about their local area as the spire of excellence that will drive the state. Michigan State believes we need to do that for Lansing and for the mid-Michigan area, because it's an important component of our livelihood and our capacity to attract and retain faculty and students. But we also believe we have an equal responsibility to every other area. So the engagement in Detroit, for example, in southeast Michigan has been long and very strong, beyond simply what Extension does in those communities, but as a university. For example, the work of the Detroit Chamber around logistics is fueled by our logistics faculty -- our supply-chain faculty -- and has been for a very long time.

The issues for Michigan state is we have all of the pieces that you would look at any university. We have business-connect operations. We have entrepreneurial networks. We have all of those things. And universities need to have all of those things.

What we want to do is be a true partner in those conversations by simply listening to the community's problems, not simply having the answer that our faculty might determine by looking at it from afar. So we spend a lot of time and a lot of transaction cost working with people around those problem-definition issues, not simply providing an answer to a sort of click in the computer.

We also are very proud that 80 percent of our students come from Michigan as undergraduates. Seventy-five percent of those students are from families of \$125,000 or less. And we have about 24 percent Pell-Pell-eligible students. So we see ourselves as a talent development component in a world-class education, in which we are reaching broadly across socioeconomic class.

We also see ourselves very actively engaged in the things are important to the state drivers, looking at agriculture, food, food production, looking at K-12 education and the work we need to do collectively in that arena, and water, environment. You can pick any of those major problem sets, and I think Michigan State has been a part of those conversations -- both in anticipating tomorrow's problems, but also working in rolling up our sleeves on today's, and seeing that our responsibility is not simply that we -- the elitism of working on tomorrow's with a world-class faculty, but also the responsibility of working on today's.

MR. KATZ: So let me ask -- and it's wonderful that you and Mike are here -- and are friends.

So the Governor's budget -- to put it mildly -- gave you a haircut. And I'm wondering if you could talk frankly about the nature of the reductions that you're facing, and the challenges that you're encountering. And how you continue to play what is a very broad-based role in support of a variegated economy, given these fiscal times.

DR. SIMON: Well, there was a brutal reality to other budget that was presented -- but not a surprising reality. And let me cast it in that way.

If you were following Michigan for a while, you'll know that Michigan was 49th out of 50 states in increases to public higher education prior to this economic upheaval. So, there's been sort of death by a thousand little cuts along the way, where we've had to adjust in that way.

To also calibrate -- if you look at dollars-per-student to spend, and you think about the Big Ten institutions, Michigan State has the smallest dollars to spend per student of any Big Ten university. Part of that is our mix of in-state and out-of-state students, where we're 20 percent, and the average in the Big Ten is about 35. Part of that is a mixture of costs, because we tend not to price programs that are more expensive higher than other programs, because we believe that kids from all backgrounds need to have an opportunity to not look at sticker

price to choose their major. And so there's a philosophical piece that goes with this.

This budget proposed a 15 percent reduction in addition to that for public higher education, so the total over this last four or five years will near 25 percent of our state appropriation.

We have grown in students, and all our metrics are continuing to grow. So you would think that, as a business proposition, that would not have been a negative number. But if you looked at the structural deficit of Michigan prior to Governor Snyder's appointment, you could predict, going into that, a 13 to 15 percent structural deficit for the state.

So we decided, as an institution -- and we're very unique in this regard. And we hope good behavior is rewarded in some way (laughter) -- as a public institution, the University of Michigan has done similar planning. So I think the two larger institutions have taken the same tack -- we decided that we would plan as if we were having a 13 percent budget reduction, even though the stimulus money was propping up our appropriate for the last two years, that there would come a day of reckoning.

And time to plan was better than running up to a cliff and declaring ourselves in a crisis, and dealing with all the things that one does. So we could genuinely engage our faculty, staff and students, our stakeholders around the state, in ways that would be productive,

about our future, and also do that in a way that put new initiatives along with budget-cutting.

And so if you go to the website, there's something called "Shaping the Future." Depending on how you look at that, there are budget-cutting targets in there for efficiency and effectiveness. And then if you find some other things, you'll see that we're growing and doing new things. So it was a balance of those activities.

We had great cooperation from our employee groups. We have 10 unions -- so we're highly unionized. Everybody except the tenure-system faculty and a portion of academic staff are unionized. We were through all of this process. We had one year of zero salary increases, modest salary increases, a major change in health care that reduced the cost of health care, ongoing, by 10 percent, capped our growth rate for the University at 5 percent, and eliminated post-retirement health-care benefits. All that without any workforce disruptions.

So that gives you a sense that transparency, and getting everybody to work together does have a positive impact, whether you're in a unionized or a non-unionized environment.

We will still have bigger challenges, because the Governor's budget recommendation also included major changes in revenue-sharing at the local level, in addition to the reductions for the MSU Extension. Because we are, unlike other states, we don't have a

system. Extension is a university responsibility, not a state or a system responsibility. And about 30 percent of the funding for Extension activities, youth development, economic development -- you name it -- whatever the communities want, come from the communities. And they rely on us for a variety of services and a variety of studies -- whether it's land-use or water or -- you pick it -- they're part of that funding.

That's going to be changed as a result of this budget, as well, because of the nature of revenue-sharing. So we're going to have to sort of work with the counties and local cities in order to re-calibrate the role of MSU Extension beyond what will be the 15 percent reduction that we're doing.

MR. KATZ: Just one last quick thing just to put on the table before moving on to Rob. When we were talking before, I think you rightly describe Michigan as having this sort of first-class higher ed system with a very challenged K-12 system. I just -- maybe to say just a few words on that.

DR. SIMON: Well, if you look at all of the data that are available, we are now trying to do a transition with Dr. Flanagan who's the head of the State Superintendent, the focus from sort of minimum standards to proportion of students who are college ready in our K-12 system. And the numbers, if you look at that, the pieces of data, you'll see districts that are 3 percent and 5 percent and 9 percent and 10 percent college-ready graduates in addition to just the challenges of getting

students to graduate from schools. So there's been a very ambitious agenda identified, and what that will mean is that schools that thought they were doing really well because they could be over the old bar, will now be below the new bar. And that's going to require all of us to work together on preparation of teachers, on a whole range of other issues, curriculum, in order for our state to have the talent pool that it needs in what will be a declining K-12 population in part because of demographics that were already in place and in part because of the out migration as a result of losing so many jobs. So we have to as an institution be a part of that solution and not be a part of the sort of the Superman movie where you can blame everybody else. This is going to be a team effort just like I think our work on the campus has been a team effort, but it's an uphill struggle. And I give the Governor and Dr. Flanagan great credit for taking this on in the middle of the first part of this budget cycle to set the standards at a much higher level.

MR. KATZ: Excellent. Before we move to Governor Rendell because we've talked about tax rates, we've talked about the structural deficit, higher ed, K-12, Rob is going to bring the infrastructure issue into sharp relief. And for those of you in the audience, Rob has a paper which is released today on state transport infrastructure reform, and it's part of a broader initiative we have at the Metro Program called the Brookings-Rockefeller Foundation Project on State and Metropolitan Innovation. And we're trying to put out a series of papers that identify specific ideas for

governors, state legislators, administrators of key institutions to carry out during these turbulent periods. Rob's paper is on infrastructure. I thought, Rob, you might talk or start by giving us your sense, particularly from the state perspective, of the role infrastructure, this broad bucket of infrastructure, plays in supporting and helping move economies forward.

MR. PUENTES: Well, thanks, and thank you all for being here. I think that, I mean that the issue of infrastructure is certainly hot right now thanks to folks like Governor Rendell and folks who have tried to push this to the front burner of the national policy discourse. And I think all of that has been very helpful and very successful, but you kind of get distracted by certain things, phrases like "shovel ready" and "high-speed rail" and which governors are sending money back to Washington. All that stuff really tends to kind of dominate the conversation not just here in Washington, but I think across the country. But we know that this -- while all of that is important and we need to be talking about it that way, we also need to make sure that infrastructure is put in its proper context. And just like innovation, just like education, we really firmly believe that infrastructure is one of those things that's going to move the country to this next American economy. It matters because high-quality transportation, telecommunications, energy distribution, all this is required to move goods, ideas, workers quickly and efficiently. I think everybody in the room understands this. I think people get intuitively what infrastructure is supposed to be doing. Clearly state legislators and governors get this.

But the problem I think that we're facing and the thing that we're experiencing in state after state is that the infrastructure we have today is not keeping pace with the growth and the evolution of the economy. It's still a system that's rooted in a couple of decades ago, and it just hasn't been updated like some of these other areas of policy have been updated.

So there's a bunch of problems. One, where particularly as it relates to the transportation program in many of these states, is that we're running out of money and that the revenue sources that are paying, that have historically paid, for the transportation infrastructure in state after state is shrinking and that's really hitting these states very, very hard. Part of the problem is that we're still heavily reliant on the gasoline tax in state after state. I think 35 or 40 of the states are still mostly reliant on gasoline taxes to fuel their transportation programs. Excuse the pun. I didn't mean that, but based on these sources of -- on these unsustainable sources -- that we know are just not going to be just as robust as they are -- in the future as they are today. People are driving much less. When they do drive, they're driving more fuel-efficient vehicles, driving electric vehicles.

All these things are throwing off less money in terms of the gas tax. And most states haven't even raised the gas tax in 20 years, so just inflationary pressures have kind of whittled that down as well. So it's no wonder then in fiscal year 2010, half the states reduced their transportation programs, another dozen were planning to do that this year, and that's actually better than it could have been. We know that a lot of

the federal money -- you talk about the stimulus -- all these things help states keep afloat for the last year, last 18 months. They did a bunch of different things -- bonding, debt mechanisms -- all these kinds of things have been employed, but I think we're kind of tapping all that out now. We've got to think about something else in order to fund the next round of transportation investments for the future. But as we like to say, it's not just that the system is broke and that it has no money, but it's broken. And as a policy apparatus and a decision-making apparatus, it's just not giving us the right kind of projects that we need for the 21st century economy. We know that money isn't really being spent in an economy-enhancing way. It's still spread around very thinly based really on political priorities in many cases as opposed to those things that matter to economic growth and economic competitiveness. We don't really emphasize metro areas in many states. Again, spreading it around doesn't recognize these are our economic engines, and they should be prioritized for all those different reasons.

The state transport departments do do certain things very well. They do emphasize safety, rehabilitation, maintenance of the existing system, but getting them to think outside of these silos to all these things we're talking about here I think has proven to be very difficult. It's going to be one of our challenges, I think, going forward. They're certainly not attuned right now to all these things around the next American

economy, things like exports, innovations, all the things we've been talking about.

I think some states are trying to reorient themselves, and we're seeing some innovation that's happening. As Bruce mentioned, I think a lot of this stuff is going to be pushed forward to the federal level, but a lot of states are going to have to start this themselves. California does allocate money down directly to the metro area, understanding that these places really do drive their state economy. They link up environment, housing, transport, land use, all these things that we all know transport is connected to. California is starting to do that on the state level. Virginia is starting this experiment around using benefit cost analyses to choose their transportation priorities. I think we're seeing some hiccups along the way. You can measure the wrong things and be in worse shape than when you started. But they're trying, and I think that's going to have some impacts on some other states. Georgia's Economic Development Authority and their Transport Authority are getting together to think through some of these logistics investments that they're trying to make. Some of these giant global challenges where they're widening the Panama Canal; that's going to change freight movement up the eastern seaboard. What impact does that have on transport investments? They're trying to work that out at the state level now. Michigan, their Office of Public-Private Partnerships, trying to make a decision just about transportation. So there's a lot of things I think that are

happening in terms of thinking forward. Pennsylvania was clearly a leader in terms of trying to make sure that the intrinsic nature of other state subsidies was kind of corralled and that we were emphasizing existing places. Thanks to Governor Rendell, I think some of those things are starting to change.

But all of this is still really the exception rather than the rule. There's a bunch of good ideas that are out there, but in order for states really to make sure that infrastructure is part and parcel of the next American economy, we still have I think a much longer way to go.

MR. KATZ: Let me ask you one follow-up question before we go into Governor Rendell. And I remember when Governor Snyder had his inaugural address, he mentioned the DRIC, which is Detroit Regional -- it's the bridge connecting Detroit to Canada. I don't know where DRIC comes from -- horrible acronym, right? Go back and change that. But any low-cost, high-impact recommendations for state DOTs in the near term in addition to some of those innovations you were describing?

MR. PUENTES: And this is the challenge. I mean, because the emphasis is on cutting -- cut, cut, cut is the conversation. We talked about investment and people say, "Aw, that means new taxes." All that conversation. We've got to kind of break past that.

I think that one thing we have to do is to make sure that infrastructure investments are geared in such a way that it maximizes

economic returns. Then we're almost guaranteed that there's going to be an economic return for some of these investments. The bridge in Detroit is probably a great example of that. I think that linking up infrastructure investments to other areas of domestic policy -- you mentioned the Jobs Cabinet in Michigan -- all these things have to happen. We have to take it out of its box and make sure it's connected to these other things, which is the goal, which is what it's designed to do. Transport means to an end. It's not the end in and of itself. I think we all know that.

But we've also got to couple all of this with a more "fix it first" type approach, and we're going to hear much more about that with the next panel. There's a great paper that I know we're going to talk about. We have to make sure that we're taking care of the existing system. We've seen that that's one way that we can generate economic returns in the short term, but we've got to make sure that that's part of how the states do their work. And we've got to just do benefit cost analyses for all kinds of infrastructure projects. We have to make sure that those are not just being done by political, log-rolling type means. It's not being done just to spread money around. We've got to make sure we're getting more bang for the buck.

But there's all kinds of other innovative funding and financing options, I think, that are out there. We're seeing some bipartisan support here on the federal level -- just this week this idea of helping those who help themselves. There are a lot of metro areas, particularly in the inner

mountain west, out in California as well, Los Angeles, that are going out and not waiting for the federal government to raise the gas tax a dollar or waiting for their states to come through with a lot of money. They're going directly to the voters. They're putting together a discreet set of infrastructure projects and voters are approving them. They're being voted for all across the country. And so the federal government is trying to be able to encourage and then recognize that by helping these people and helping them to do in other kinds of places.

But then we also need, I think, we need to think through more public-private institutions. We know that there is a lot of private money that's sloshing around out there. There's private capital. There's sovereign wealth funds. There's foreign investors. There's pension funds. All this money is looking for a home here to invest here in the U.S., but many states don't have the mechanisms to entertain those proposals. They can't really conceive them. And when there are those opportunities, they have a hard time making those connections between those investors and the projects that are ready to build. There are ways to do that that still do protect the public interest, but also make sure that they still balance out to the private sector. I think public-private partnerships -- again, also something we're going to hear about in the next panel -- is an untapped source for the future.

MR. KATZ: So Governor, this is the Roberto Clemente role I suppose, you know, the clean-up batter -- I'm not trying to bring it back to Pennsylvania and also show you my age and knowledge of baseball.

What I wanted you to try to do was to first look back at your tenure as governor, and I'll frame it this way because I think your approach to economic growth was really quite distinct. We had a group in here about two weeks ago to focus on exports and a federalist approach to exports. And we had individuals from California, from New York -- state leaders -- Michigan, Colorado, and Pennsylvania. And the Pennsylvania team came in after hearing from some of the other states saying, "Well, we don't really have an export promotion or export financing infrastructure," and sort of laid out a very clear and distinct and measured approach that had been taken under your governorship. And frankly we could say that for other areas of policy like infrastructure, like energy, like skills training. What was your philosophy as governor with regard to the state role in reshaping the economy of Pennsylvania?

GOVERNOR RENDELL: Well, I believe and I know I'm like a dinosaur, but I believe that government should invest money, should make a difference with its investments, those investments should be smart, they should be targeted, they should go to building their strengths, but a government that doesn't invest in its own growth will wither and die. And we're close to withering and dying as a country. We've let our manufacturing sector get to the brink of extinction. We're not investing in

anything that's significant to the future. What the President laid out in his State of the Union -- and there were part of the State of the Union that I was disappointed in -- but what he laid out in terms of investing in the future, that should be not only a roadmap for the country, it should be a roadmap for every state.

So first and foremost I decided we had to invest in education. And I believe that the currency that will determine what countries, what regions, what states, have the most viable economy is the supply of knowledge workers. I just had the occasion to speak before the Business Council in Florida last week and before my panel went on I listened to one of the other panels with business leaders on it, and all they talked about -- they were talking about what factors drive your location decisions. Taxes was about fifth. Number one in every instance -- and these were some very conservative business leaders -- was the availability of knowledge workers at every level. At the PhD level, at the engineer level, at the community college level, at the high school graduate level. They want high school graduates with sufficient skill sets so they can do on-the-job training and they don't have to remediate them. So I think that strategy paid off and Pennsylvania went from the bottom third in performance of a national test to the top five states. Our eighth graders finished first in reading in the national test. Ten years ago that would have been unheard of in Pennsylvania, absolutely unheard of. And we will bear -- the problem with that strategy is most governors -- and I'm not patting myself on the

back here -- yes I am actually -- most governors worry about the next election. If you're going to govern effectively -- and my advice to Governor Snyder is worry about where your state's going to be 20 years down the road because that's the only way to really make it work. Set in motion stuff and hope that the things you set in motion are good enough that they speak for themselves and the next administration will just take them over.

And I think there's evidence that that works. In the Brookings report on exports, Pennsylvania was highlighted as perhaps the most creative export program in the country, and my successor put out a press release saying, "The Brookings report highlighting Pennsylvania as the top export state in the country -- top export policy -- proves that his administration is on the right track." They put that out on the ninth day they were in office. I was looking for some mention of my own name in the -- didn't have it. But -- so we invested.

In 2003 when I took office, we had -- there was a recession. Not like the recession we have today, but I inherited a \$2.4 billion budget deficit. We had to bridge the gap. As Secretary Rubin said, "We have an obligation to balance our budgets." But I also knew we needed to jumpstart the economy. We put together a \$2.3 billion economic stimulus program. Part of that, for example, was \$400 million of venture capital, about \$250 million of venture guarantees where we would give guarantees to venture funds, and about \$180 million to our Ben Franklin partnerships. We're now third in the country in terms of producing VC jobs with VC

investments. No accident. It came directly because of state money. We've spent a whole boatload of money on infrastructure, and as Rob said, "It helped to have the stimulus money." The stimulus worked a whole lot better than it ever gets credit for, but that may be their own fault, but it worked a whole lot better. We're now doing 1,600 bridges at one time in Pennsylvania. Again, unheard of. That's stimulus money and state investment money through our bonding. And it's the reason why in 2010 Pennsylvania was eleventh in job growth in the country. The next industrial state was 29th because we spent money. We invested money in our own growth. Is there a company in the United States that has grown successful that didn't invest in its own growth? Absolutely not. And that's got to be a lesson for states. And even in this difficult time, you've got to prioritize where you're got to cut as the President suggested in his State of the Union. But while you're cutting, you cannot short education, and you cannot short economic development dollars that make a difference, including workforce development and the like. And that was our driving philosophy.

We also tried to, Bruce, look at our strengths. We're an "eds and meds" state. No offense to Michigan, but Pennsylvania has the second highest number of colleges and universities per capita, behind only Massachusetts. We're a big "eds and meds" state, tremendous medical centers, research centers, pharmaceutical centers. So we put together a program called Keystone Innovation Zones where they weren't

Brownfields, these were medical schools and universities applying for KIZ status. And inside those zones young companies, seven years and under, paid no taxes and got priority into all of the state's venture funds, et cetera, et cetera, et cetera. Because faculty entrepreneurs, student entrepreneurs, PhDs, we wanted them to stay right there on their university campus setting area and set up businesses there, not to go to Boston or to the Silicon Valley. And it's had success again. It's a program that's in its early years, but I think it can be tremendously successful.

Rail is a huge plus for Pennsylvania. We have a 68 short lines and four Class-A railroads. We quadrupled the money we spend on rail spurs and helping our railroads. Why? Because the railroads are pretty good innermodal centers, create a ton of good warehousing jobs which used to be sneered at, but warehousing jobs these days are considered to be pretty good, mid-level, blue-collar jobs, and because it gives our businesses transportation alternatives, competition to trucking. The Crescent Corridor Program is a six-state program with Norfolk Southern and a national gateway CSX five-state program. Pennsylvania led the states in putting money up. I put \$45 million into each of those projects, matched by federal TIGER funds. TIGER was a good example of what Rob was talking about. TIGER was really the forerunner to an infrastructure bank. TIGER gave money out -- \$4 billion was it, Rob? -- \$4 billion based on a cost competitive analysis and the Crescent Corridor was a hugely successful multi-state program. They got the largest TIGER

grant possible. So go to your strengths. Take your strengths. Analyze what you can do best where your strengths are and then fund them.

MR. KATZ: Let me ask just a follow-up question and then we're going to open it up. You were a mayor. You were a governor. One thing that I thought was striking about your tenure as governor was how much you understood the distinct assets and advantages of different parts of your state. What Pittsburgh was good at, what Erie was good at, Scranton, Allentown, York, up to Greater Philly. And there also was a level of cooperation across agencies to under-gird these assets particularly around downtown growth, but also cluster-led strategies. And I thought you might talk a little about that -- because I know with Mike coming in really with this remit across these disparate agencies -- I'm not sure the federal government really can come to ground in as integrated a way as a state government to sort of buttress up metropolitan assets.

GOVERNOR RENDELL: Well, it's interesting. In my second year as governor, as the Economic Stimulus Program rolled out, we did an Economic Development Cabinet as well. And, for example, the Secretary of Agriculture sat on the Economic Development Cabinet. Why? Because agriculture, food processing and agriculture is the largest employer in the state of Pennsylvania. You can't have an economic development strategy in a state like Pennsylvania without agriculture being at the table. PennDOT absolutely has to be at the table. I can't tell you how many businesses we were able to get to expand because the CEO of Kellogg

called and said, "I can't get my trucks out. You need a 219 bypass. I'll expand my factory dramatically if you do a 219 bypass." And we have something that I would recommend to Michigan. The governor has -- and I don't mean this to sound a little bit like the controversy with Governor Walker right now -- but the governor has money, transportation dollars, that he can apply to economic development projects that don't go through the MBOs. And I used that money -- it was only \$25 million a year -- but I used that money extremely wisely to create jobs, to do something like that. Or a company's looking at a business park and says, "Well, geez, we do a lot of our shipping by rail. Your nearest short line is three miles away." We put in half the money for the spur and bingo that company shows up. So everything's got to be coordinated. The departments have to work together. What Governor Snyder is doing is right on track, and I would like to see the federal government do more. I would like to see the federal government do it more wisely. It can work. New Markets Initiative, Bob, has been tremendously -- again, a real success story that no one gives the Clinton Administration credit for and it's been successful in helping housing, economic development growth, in rural areas, in poor urban areas. It's been a great program because, again, it took that sort of broad overview.

MR. KATZ: So what I'm taking from this conversation -- and again, I'd like to hear reactions from it -- there is a certain "get your house in order" piece of business that obviously states like Michigan are dealing

with, all states are dealing with, with regard to the balancing of the budget. But then I think the recurrent theme I'm hearing here are a set of strategic investments in core elements of your economy either by yourself or since a lot of the federal money is essentially flowing through the states. It sounds like a broader bucket of infrastructure than normally would be described in this town. Education, K-12 up through community colleges and higher ed, and some of the innovation systems though, frankly, a lot of that will drive through the advanced research institutions through NIH and NSF. The state may have with some of these special funds an ability to buttress and compliment those kind of --

GOVERNOR RENDELL: But if we really want to be a nation of innovation, again, we have to put some money on the table to spur innovation. The research and development tax credit should be permanent. It should be much more significant. States should have a -- we quadrupled our research and development tax credit. It's one of the things that our businesses actually asked us for. I think the federal government should be in the business of having VC funds. I mean, if we're going to urge innovation, how many great ideas die because the company just cannot -- the people who are working on their idea cannot make a living anymore. I mean, it's a small amount of money. It's a small amount of money for the potential return.

Innovation -- look at what's happened with NIH, that the NIH funding has gone up, that grant funding. And most of the NIF funding

goes to our universities. And they're doing great things. I mean, the work at the University of Pennsylvania on the human genome, I mean, that all came from NIH funding. I don't understand why the conservatives don't get it. Business says you've got to spend money to make money, right? I mean, we've heard that since we were kids and it's no different. You should spend it wisely. It should be targeted. It should be thought through, but you've got to invest.

I was on a -- I told this story the last time I was down here -- I was on a show with Mike Pence and he said, "We're the party of 'no.' We say 'no' to taxes, 'no' to borrowing, 'no' to this, 'no' to that." And I said, "Well, Congressman, you seem like a reasonable man to me." Actually he didn't, but I've been on those shows enough to know that you want to be the reasonable guy. So I said, "You seem like a reasonable guy to me. Tell our viewers if we're not going to invest in our infrastructure, how are we going to guarantee that our roads are safe, our bridges are safe, how are we going to guarantee to our businesses that we can move goods quickly? Tell us." And he thought about it -- and Mike Pence is no dummy -- he thought about it and, of course, there is no answer. So he said, "There you Democrats go again, using the word investment when you really mean spend." That was his answer. Well, that's no answer. We have to invest in our future.

MR. KATZ: Mike?

MR. FINNEY: I want to make just a small comment on that. I think a lot of the narrative about this concept of spending money to grow a business or an economy is led by the extremes. Right? It's folks at both of the extremes, some who want to spend everything on everything and some who don't want to spend anything on anything. And at the end of the day I really think it's that group in the middle that represents the majority whose voice has not been as vocal. I can tell you Governor Snyder represents that voice that really is about sensibility and investing where we need to, certainly understanding that with all us we have a checkbook that represents the available money that we have to spend. I think the kinds of things that Governor Rendell talked about that he did in Pennsylvania is a model that we've all studied. Right? We've looked at what's happened. We understand a lot of the wonderful tools that were developed, but those were done with a balanced budget in mind and the ability to have a structurally sound budget. Now the economic challenges we've had over the past few years has impacted every state. But we know that if the state of Michigan becomes financially sound as a state, where we do not have and do not face on a daily basis a structural deficit, our ability to put in place the kind of creative programs that the governor just described -- and that, frankly, Governor Snyder has asked us to develop -- becomes much more doable, our ability to invest in education and so on. These really critical factors become much more doable.

I think President Simon in her comments -- there was a subtle remark that she made at the beginning that I think is absolutely right on. Our major universities anticipated based on the numbers that we could not -- we did not have a sustainable financial model for the state of Michigan. So they planned around that. And while there is a small gap between what they plan for and what the governor has recommended, imagine if they had not planned and they faced the entire 15 percent gap where our outstanding universities would be. So we have to keep that in perspective. And the beauty of it is that our universities continue to find creative ways to be successful, to continue to achieve even in challenging economic times.

So I think the governor is right on. We have to invest in these things, but we have to make sure that our fiscal house is in order so that we can in fact have a successful house.

(Applause)

MR. KATZ: One other thing for the audience that I think you might want to talk about is that your vision of state government I think very much is as part of a network of institutions in the State of Michigan. Some of them are higher-ed, some of them are business incubators like Automation Alley or Tech Town or Anne Arbor SPARK. I mean, my sense is, as the governor comes in, it's not a focus on state government as just a governmental entity with a set of cabinet agencies and a delivery system, it's really almost as a platform for engaging with a broader set of

institutions, and I think as you're thinking of reorganizing the Michigan Economic Development Corporation, I felt that institutional view of partnerships is an interesting view because it's how the world works outside of Washington, right? I thought you might just want to say a word about that.

MR. FINNEY: Yes, so, one of the things that we decided early on, and it really came as a result of incredible feedback that we received during the transition process was that the Michigan Economic Development Corporation represented what I'll call big brother with respect to all the economic development organizations that existed at the regional level in our state. The reality is is that most of the activity and most of the opportunities come from within the regions.

I ran a regional economic development organization in Michigan, one in New York State, and in every single case, we tended to lead, and the state should have been a tremendous resource to us. So, what we're trying to do as a part of restructuring the Michigan Economic Development Corp is actually go to that kind of a model where we essentially decentralize and we move away from everything being captured in Lansing, the state capital, to a model where our major partners throughout the state really help us lead. And it's an interesting process.

So, yesterday, I was involved in a three-hour meeting with about 15 of our major regional economic development partners, and we were essentially giving them the opportunity to help us guide everything

from the initial strategy and outcome discussions we want to achieve to budget to tax incentives and everything else. And it was interesting; the challenge was to get them to tell us what they think. The most interesting words you'll ever hear if you're sitting across the table from someone who is a decision-maker is what do you think? Because when you say something you've now committed. And, so, what we're trying to do through this process is to get our regional partners to say what they think because then they've committed to be a part of the process. And we're committed to doing that. We're actually moving our staff out of Lansing and into the regions to work at the regional partner locations so that we can be much more effective than we are right now.

Now, we've done a lot of things over the years that have attempted to change the paradigm about how to do economic development. Now we're really being aggressive about it, and so far, the regional players are responding nicely. They're saying what they think, and, in fact, they're saying more than enough. My e-mail is blowing up, if you will, as my kids like to say. But it's a process that we think will guide us in a way that we haven't been guided before and reinventing our state and engaging our partners. And our universities, by the way, are one of the key components of that. Sometimes, that gets lost in the translation.

But there are two things in most communities that are for good forever. We all understand foundations, charitable foundations. They have money, they invest it, they contribute a small part of their

corpus to various causes. Universities are for good forever, as well, in my opinion, and, so, if you really want to fix something, you have to engage those organizations that have figured out how to be for good forever and our universities are key partners in that regard, and I know President Simon knows that we have been very engaged in working with them and the other major universities that we have in that regard.

DR. SIMON: One of the things that Mike was a part of at Anne Arbor SPARK was working with Michigan, Michigan State, and Wayne State to create the University Research Quarter, a virtual operation that connects us, benchmarks us against areas that have three other universities, mostly private, along with at (inaudible) Boston, Northern California, Southern California, Texas. We even included Pittsburgh governor in that benchmarking to see how we would rank in a number of variables that those reports are available on the Web, but also the economic development groups in each of our areas work together. And we also have a director now who will be a portal to all of us as we work on economic development, individual named Jeff Mason.

The other thing I would say, we're really talking about sort of network of networks, and I think Michigan State has been successful because we worked around the state in this land grant philosophy to develop networks and then try to network the networks. And I think that's the philosophy of economic development that Mike is bringing, Governor Snyder is bringing to the state, and if we can be the most successful

integrator of those networks of networks, we believe we're going to have additional capacity and opportunity that will not necessarily flow to folks who see those networks as unique entities, and I think the governor should be commended and Mike for really engaging in that network of networks conversation. We then, because, again, there are lots of places in the state that don't have universities.

Everyone has an extension agent and an extension president, so, that's part of their role, but, also, we've worked with the Mott Foundation through a group called Prima Civitas Foundation or PCF2, to be that spire that exists for communities that don't have a research university in their presence so that they are not disadvantaged in this mix so that the state isn't just a set of spires that grow taller and taller where people are left behind. But we can bring all of the state forward in a variety of ways.

MR. KATZ: Let's open it up for questions. I think right over here, and then we have a bunch of -- I'm going to start on this side and then move over.

MR. RYBECK: Hi, I'm Rick Rybeck with Just Economics. So, we wanted to thank all the speakers and Brookings for this presentation. I mean, it's very helpful, very informative.

With regard to infrastructure, as you know, one of the things that struck me over time is something I call the perversity of infrastructure, which is that we build infrastructure to facilitate development, but if that

infrastructure is really well-planned and executed, land values around the highway interchanges or the transit stations go up. A lot of development we want ends up going into a cheap cornfield because the land is cheaper, and the people move into the cornfield and don't have the infrastructure they need, so, they ask us to extend the infrastructure, which we do because we're nice people and the cycle starts over again. And, so, the infrastructure we build to facilitate development ends up chasing away. We never catch up. The resulting urban sprawl really wreaks havoc on our environment and our budgets because end up with so much more infrastructure than we need for the number of people and businesses that we're trying to serve.

Chris Leinberger, who's also with Brookings, has done, I think, a really good job of trying to talk about some remedies for that, and part of that is coming up with a user fee for what I call the invisible user; that is the people who own the land around the highway interchange or the transit station, et cetera, those folks receive an enormous windfall from public expenditures, and Chris Leinberger has been talking about value capture as a way to recapture that publicly-created value for the public so that basically infrastructure can become self-financing.

And I'm wondering from the members of the panel whether that's an idea that makes sense and whether if it does we could even take a broader approach, which is to transform the property tax into essentially a value capture user fee by reducing the tax on buildings and increasing the

tax on land values, and this would not only help make infrastructure self-financing, but would actually create economic incentives that would pull development to high land value locations, which is where the infrastructure exists and where we want the development.

MR. KATZ: So, a broadening out of what we even think about as innovative finance.

Rob, do you want to start with this?

MR. PUENTES: And broadening out what we think about public-private partnerships. I think some of the problem we have when we think about PPPs in the country, and the governor has the scars to show for some of the stuff, I mean, the leasing of the toll roads is I think the one thing people look at. They look at what Mayor Daley did or Governor Daniels did in Indiana. But this is what we need to be talking about in terms of public-private partnerships. It's the things the Governor talked about with the freight railroads, which is privately-owned. It's the land development deals, as you mentioned. It's technology companies. We were just in Tokyo looking at the connection between the technology that's deployed on the transit systems, and all this is done in a public-private way. So, if nothing else, we need to be just thinking much more broadly about those relationships between the public and private sector.

And then you're exactly right. Anything should be on the table. We're starting to do this in spot areas. I think the Tyson's Corner Silver Line is going through there. The private landowners there

understood the enormous value that they would get from that increase, so, they're willing to tax themselves to help pay for it. those kinds of things will happen in spot locations. We need to ramp all that up. I think it all should be on the table.

MR. FINNEY: I think this is a very interesting question and point because, in fact, if you look at economic development and some of what's happened over the years, not only have you created an incredible incentive for the landowners in those areas where this development has happened, in many cases, there's actually been incentives allocated by state and local governments to incentivize the landowners and the developers in those areas, which is totally counter to the point that you just made. So, there's clearly a public policy issue related to this dialogue that just has been totally misunderstood and probably improperly used historically in terms of how incentives are placed into deals that essentially encourage sprawl.

MR. RENDELL: One of the things we did in that \$2.3 billion stimulus program is we put about a little less than one-third of \$1 billion into something we call Pennsylvania in Our Sites. It was to clean up brownfield sites and get them ready for development, and the reason we did that was, one, it was a metro-centered incentive, but, two, infrastructure is there. Most brownfield sites became brownfield sites because they were on a rail line or they were near the port, and the infrastructure is already there. Why build it out on a greenfield and take

away a greenfield and open space when probably for less money, we can remediate the brownfield? And it worked very successfully. The number of sites we cleaned up were just dramatic, and it helped the Pittsburghs and the Scrantons and the Altoonas and places like that come back. Reading was a perfect example. You can do that by building back your infrastructure. Infrastructure is more than just transportation. Infrastructure is having shovel-ready land to go, and if you clean up brownfields, you won't have to expand and take greenfields.

MR. KATZ: A question from Sandy.

MR. APGAR: Sandy Apgar, senior counsel to the Boston Consulting Group.

About the narrative, during the Clinton Administration, I set up a large public-private partnership to renovate and rebuild military housing. And when I first proposed it to the Congress, a republican majority, there was stiff opposition because of the impact on the budget. The key word I found was multiplier. The private sector equivalent to leverage in the private sector. That is for every public dollar, there would be in this program \$10 of private capital. In fact, the outcome after 12 years is 11 to 1. That word "multiplier" doesn't seem to have been in the narrative, or at least if it has, it hasn't been as prominent, and I ask all of you the same kind of difficult experience both at the state and federal level whether crystallizing this concept not only in the cost benefit analysis, but

more broadly in the policy debate and in the politics would help to bridge the gap which I eventually was able to do and achieve bipartisan support.

MR. RENDELL: There's no question you're right. The multiplier effect we used to get political acceptance of government investment and stuff, but even more so when the federal government scores the expense of programs, there's never any scoring for the offset. It drives me absolutely crazy. The offsets are there. If you invest money in a infrastructure, if the federal government invests money in a infrastructure, we can show -- the federal government has its own studies that say \$1 billion of infrastructure investment produce 25,000 jobs. If we're producing 25,000 jobs that people who are not working right now, and they're not, and they average \$60,000 a year, there's X amount of federal income tax. There's business taxes to the private companies, you get -- it's an offset. So, you may spend \$100 billion on infrastructure and the federal government gets a return of \$40 billion. So, it's \$60 billion it should be scored at, not \$100 billion. I think the Tax Act, it was 1974 that set up the scoring. It's the most destructive things towards investment and growth in this country of anything we have. The way we score is nuts. We don't have a capital budget because we'd have to score all the spending in the year that the capital budget would be floated. We're the only political subdivision in the country, the federal government, that doesn't have a capital budget. You couldn't be more right. Make this man the secretary of Treasury. Whatever. (Laughter)

MR. APGAR: I just want to follow-up. The other obstacle I faced was OMB.

MR. RENDELL: Yes, of course.

MR. APGAR: And had to spend six months in a very difficult negotiation, thankfully, with the support of Treasury, to achieve a waiver, and that waiver survived the Clinton Administration. Ultimately, has become known as the Raines' Memo because Frank Raines then redefined scoring for this purpose and this purpose only. That has just recently been renewed because there was a sunset clause even in this program, successful as it was, was faced with closure. That principle, the set of principles finally was accepted by the OMB "analysts" who had opposed the principle and if through this panel and any others of you who are in office or advisors could pick up scoring as a structural issue. It is the bureaucratic obstacle or at least administrative obstacle in addition to the political one.

MR. RENDELL: Well, believe it or not, there's an American Bar Association Committee that's looking at the act and scoring and their report ought to be in by 2050, probably. (Laughter)

DR. SIMON: Bruce, if I could?

MR. KATZ: Yes.

DR. SIMON: If you would go to the URC report, you'll also see that we've done an economic impact analysis to try to do the leverage of what we were getting in from federal dollars as well as from state

resources, and I think the numbers are relatively impressive about why investments in education do produce results, but what's missing in the conversation about education, and I'll say our role in economic development is what's the metric for an assist?

And if you think about it, and I'll use a basketball analogy since Irving Johnson is an MSU graduate, yes, there was a point in which it was being a scorer, but part of his success was being one of the great assist leaders along with many others to make their team better. And if we're going to do the scoring, particularly as it relates to universities and these partnerships, we've got to have a metric for assist so that our role is encouraged to be part of that partnership and be a part of the equation, not simply to do our own thing, which is recognized more highly in all the rankings and ratings and all the ways in which states tend to evaluate scorecards for universities. And I think as we move forward, we have to have that assist metric. It can't be a soft one. It has to be based on the application of cutting-edge knowledge and real economic measures, but I think we would do a disservice to the role of education in this kind of partnership if we didn't think seriously about those measures.

MR. KATZ: I had some folks right over here.

SPEAKER: Hi, I'm (inaudible) I'm professor of Finance from Johns Hopkins University. I came from China, and I'd like to make a comparison. Thirty years ago when I come from the China, the railroad

speed is like 15 miles per hour, and last year when I go back, it's like 215 miles per hour.

MR. RENDELL: Going up.

SPEAKER: And the speed here is about as fast or as slow as 30 years ago, if not slower. So, my question is: When I read in the news about the Florida governor rejecting the federal money out on the high-speed railway, I mean, it's unbelievable, but it's very rational because he is looking forward to the next election, and he doesn't want to raise the tax. So, my question is probably to Governor Rendell, how can the American leaders make tough decisions to align themselves with a long-term prosperity of the people and not just to their next election?

MR. RENDELL: Well, again, you've got to make your case to the public. It's with Governor Walker and collective bargaining. The way they're talking, collective bargaining, the government always loses? No. Government can win back concessions, and there are tons of collective bargaining stories where the government won back significant concessions. And the same thing here. You got to make your case to the people, and we have to be smart in spending money.

So, no offense to the Obama Administration, which deserves tremendous credit for actually trying to do something about high-speed rail, but we should take one project and make it work, demonstrate to the country that it can work, and there's no question -- and I know I'm from Pennsylvania, but there's no question what that project ought to be.

(Laughter) It ought to be Boston and New York, New York to Washington. Can you imagine if we got 220 miles, which, by the way, China is now testing it, you may know, at 350. But if we went to 220 and New York to Washington was reduced to an hour and 20 minutes, in addition to being a boom for high-speed rail, a boom for American manufacturing and producing all those steel ties and whatever (inaudible) a boom to putting construction workers back to work, it also helps the airline industry because all of a sudden, we shouldn't be flying as they do in Europe, less than 500 miles, and, yet, the shuttle, Boston to New York, New York to Washington, the shuttle just New York to Washington screws up New York, Philadelphia, BWI, and probably to some degree LaGuardia because the north-south traffic, it's what causes planes to sit on the tarmac. We shouldn't be flying planes at that distance, and, so, let's take one, let's prove it can work. There are estimates that even Amtrak has its own estimate that Boston to Washington line, if we spent the capital dollars, would make \$90 million a year profit. And I'll tell you how we'll build it. We're never going to be able to afford it under current conditions. Public-private partnerships. And no offense to Amtrak, which I think does a good job, forget about Amtrak. Let's take that line, put some federal dollars in, every state along the line, put some state dollars in, but let a private company put the majority of the dollars in, and bingo, we could get that high-speed line. And once we prove it can work in one

place, then we can take our case to the American people. We shouldn't be scattering all over.

Politically, that's a tough sell. That's a tough sell, but I think Rob said in his comment, we've got to start getting away from politics in the way we make investment decisions and start making them based on real analysis, and, I mean, what are you thinking?

SPEAKER: I mean, in this case, it's exactly right. I mean, I think the way the governors have kind of framed this, as if the federal government is shoving money down into these states that they don't want it is really disingenuous. I mean, all of these projects the states had conceived and applied for in a competitive process that was based on some kind of measures of merit. We can debate whether those were the right measures or not, but the fact that they're being turned back now is because we have this changeover with the governors. So, the fact that the money now that was going to Florida, was going to Ohio, was going to Wisconsin is now going to these coastal projects in the northeast, I believe, and in California, we think those are the right projects. So, the happy byproduct of all this might be that we're getting to what the Governor was talking --

MR. RENDELL: But the money, to understand, we're playing a game here because the only way you're going to have true high-speed rail is to have a dedicated rail line, dedicated corridor, right? That costs not \$1 billion or \$4 billion; it costs, I think, 90; 85 to \$90 billion.

We're not going to be able to get in the near future federal government money or state government money to do that. we can get money to contribute along the line, but the only way we're going to do it is through a public-private partnership. The states are on the line, put in some money, the federal government put in some money. A company comes in and does it, and maybe if it's too risky for any private company to come in, we give them small, federal availability payments, but we got to get it done. I mean, it's embarrassing.

Again, I'm a great supporter of the president. It probably doesn't sound like that. (Laughter) But I am, and I called our High-Speed Rail Program, the money we get, mid-speed rail because we were going from 80 to 120. Do you think anywhere in the world they would consider 120 miles an hour high-speed?

MR. KATZ: So, we may have to come up with a new embarrassment metric. (Laughter) At what point are you so embarrassed as a nation that you actually begin to do something? (Laughter) I picked up last week's travel section of the *New York Times*, flipped to one of the pages, and it had an article about Japan Central Railway building a new high-speed line. When more funding for one line than our entire national system. Small country, obviously very rail connected.

SPEAKER: Private company.

MR. KATZ: private company. Private company.

I am being told what, Ellen? (Laughter) One more question. There's one in the back, thanks.

MS. BOURBON: My name is Contessa Bourbon from the *New York Times*. My question is for Governor Rendell and Mr. Robert Puentes. As tension strikes in many states, including Wisconsin, to cut back on benefits of state employees, how can states finance or allocate more funds for infrastructures and education (inaudible) the tight budget without increasing the gasoline tax?

MR. RENDELL: I heard education. What was the other?

MR. KATZ: Infrastructure.

DR. SIMON: Infrastructure.

MR. RENDELL: Capital budget. Infrastructure. That's the beauty of the capital budget. When I became mayor of Philadelphia, we had the worst deficit in the history of any American city in terms of percentage of revenue. We had no money to spend. I had to cut everything. It was brutal. I was picking at everywhere I went, but I took a capital budget which was meek and timid and spending \$25 million a year and I got it up to \$140 million. And we put people to work on our infrastructure, and it was one of the ways we came back. The reason Pennsylvania is doing 1,600 bridges is I convinced the legislature even in the teeth of the recession to do \$400 million of capital borrowing above and beyond what we normally do for an accelerated bridge program. The good news about capital budgets is if you're capital budgeting \$1 billion,

your debt service for the next year is \$90 million. Now, that's not to say that \$90 million is easy to find, but that's a small return on an investment of \$1 billion that puts a lot people to work and cures your infrastructure. Education is harder. You can't use capital dollars obviously for operating programs.

SPEAKER: In the short-term, we've seen governors have some success with these audits. Other state transportation departments in Virginia, in Texas, in Idaho. They were able to find some of that money by squeezing out some of the waste. There's still going to be some things that are going to have to be cut in the short-term. I think we can find some of those things if we look hard enough, but then putting together a strategy, again, for investment so that we can sell those kinds of benefits to the American people. I think some of the reasons that we have the pushback, as the Governor was mentioning, is because people don't believe that their investment or that taxpayer dollars is going to be spent wisely. We have to be able to ensure them that these are going to be long-term economic returns and not just short-term political logroll.

MR. RENDELL: And the beauty of doing it now is, one, interest rates on government borrowing, at least for the time being, are very low, and construction costs, which used to be rising like health care costs are now very, very low. We originally got \$1 billion for road and bridge transportation from stimulus. We said we'd do 140 projects. When the bids came back, we were able to do 30 more projects.

MR. KATZ: So, we're going to take a short break. I think what we've tried to do with this panel is to put economy-building, economy shaping back into the narrative along with put government on a diet and focus only on the cost and size of government. Thank you to the panelists. (Applause)

DR. GREENSTONE: Okay, I think we're going to get started. This commences the second panel, which is involved with the release of three new policy proposals from the Hamilton Project.

But before we talk a little bit about the strategy paper that the Hamilton Project is releasing today, I just wanted to underscore and echo what Bruce Katz had said. It's been a real joy and pleasure to collaborate and we learned a great deal from collaborating with the Metro Group at Brookings. And in fact, this kind of cross-pollination is one of the real great advantages of Brookings.

So, as state and local governments put together their budgets for the 2012 fiscal year, most face acute pressures. These pressures are magnified by the constitutional requirement that most state governments must annually balance their budgets. And this means that they face a trade-off between, on the one hand, the immediate needs of families that are in the midst of this great recession trying to provide food and shelter and healthcare for themselves. And on the other hand, the investments in critical areas like education, infrastructure, healthcare, and environmental quality that determine our children's wellbeing.

This tension between the present and the future is a reason that we decided to hold this event. In fact, I think this tension is the number one public policy issue the country faces. We have had three decades of stagnation -- more than three decades of stagnation of wages for many American families. And at the same time, we've had -- we're confronted with a sea of budget deficits. So trying to find a way to thread the needle between fiscal responsibility and making the investments that can help turn around the stagnation of wages for American families, I think, is really at the heart of what the country faces. And in our small way, what we're trying to contribute to at the Hamilton Project.

So, let me provide a little context for the problems that state and local governments face. This graph, I think, helps to underscore the seriousness of the challenge faced by state and local governments. It projects state and local spending and revenues as a percentage of GDP, assuming that there is no balanced budget requirement. Just to show you the magnitude of the decisions that are going to have to be faced.

The short-run pressures which are evident in the current years, largely due to the great recession. Revenues have plummeted at the same time that demand for key state services have soared. But what's also clear when you look at that graph is that there's long-term fiscal pressures that are beginning to emerge. And those largely come from rising healthcare costs, and huge unfunded pension and retiree healthcare liabilities.

One thing that -- I must say, I didn't realize this before we began this. Is, why is this current budget problem for state and local governments so crucial to the future of the country? And, I think the reason is one that's often forgotten here in Washington. And that's that state and local governments are literally the nation's first responders. The list of services that they supply range from providing for public safety, streets and sanitation, and key features of the social safety net that provide our most vulnerable of our citizens with the basic measure of economic security.

But while they try to manage the role of first responder, they're also the nation's chief investment officer. And what this graph shows is, they're the primary provider of primary education, secondary education, higher education, and infrastructure. So, 90 percent of government spending on K-12 spending comes from state and local governments. 70 percent of higher education spending comes from state and local governments. And, 70 percent of infrastructure spending comes from state and local governments. And these are the very investments that provide our children with the skills necessary to compete in the increasingly competitive global economy.

In previous and future work, the Hamilton Project has focused on ways to improve the educational system. And today we're going to try and shine a light on infrastructure.

And I think it's probably worth -- if you could chose a single word to describe the current functioning of the infrastructure system, I think it

might be underperforming. There are acute public safety concerns about aging and deficient infrastructure. Many critical infrastructure systems, including highways, bridges, dams, and waterways were built to last 50 years but they're now operating well past that 50 year limit.

Furthermore, the number of highway fatalities remains stubbornly high, more than 30,000 people per year die in auto accidents. In some way it seems logical to conclude that that's related to the condition of the roads. As this graph highlights, congestion is another important issue. The economic costs of congestion have risen from about 20 billion in the 1980s to more than 120 billion per year today.

And so, what we've tried to do is to put forward what we think are not terribly controversial sounding principles for how to reform the system of infrastructure, but actually ones that are not always implemented on a day-to-day kind of grind-it-out basis. And so the first is, we must prioritize investments in the future. So the investment decisions that we make today are going to affect American wages and productivity going forward.

And just to put it plainly is, states face these current budget deficits, they must keep in mind the next generation. The second is, we must use existing recourses more efficiently. This can be done in several ways, as one of the papers will talk about. Shows maintenance often has high returns in new construction. The adoption of new technologies can reduce congestion, and appropriate pricing -- like congestion pricing -- can also

ensure that infrastructure is efficiently used.

The third -- and it's -- it came out a little bit in the previous panel. But it's surprising when you sit down and think about it. But, currently most infrastructure spending is not done on a kind of cost-benefit basis. People don't actually rank the projects as to which ones will work and which ones won't. And then chose the ones that will work. And so some institution of that system, either through the public sector or public-private partnerships, I think is a way forward that could help a great deal.

And the fourth is that we must increase transparency and accountability. State and local governments don't always keep the most transparent books, and it's not always easy to figure out how to price their bonds. And that's something we'll talk about later.

So, I'm very proud to introduce the authors of the papers that we're going to talk about today. These -- they have three very specific policy proposals, each of these ideas are based on peer reviewed academic research. And, have the opportunity not in kind of a transform the whole world, but in some small way to improve the function of government.

So, the first author is Andrew Ang. He's the Ann F. Kaplan professor of business at the Columbia Business School. Edward Engel is the professor of economics at Yale University and a research associate at the NBR. And, Matt Kahn is a professor at the UCLA Institute of the Environment and Sustainability, as well as the Department of Economics and the Department of Public Policy.

And finally, we also are fortunate to have with us Tyler Duvall as a discussant for these papers. He's the former undersecretary of policy at the Department of Transportation, and he's currently with the McKinsey and Company. And I should add, as one of the most innovative thinkers around about transportation policy.

So, with that, let me -- let's welcome our authors to the stage and we'll get started. (Applause)

DR. ANG: Thank you very much. So if we look at the municipal bond market, this is a market that is essential for funding schools, roads, utilities, public buildings, hospitals, and all sorts of public infrastructure. From the investment side, millions of Americans save and invest using municipal bonds.

By any measure, this is a very large and important market. Currently outstanding, there are \$2.9 trillion of bonds with half a trillion dollars of new issues every year.

Yet, this market is grossly inefficient. Transactions costs on trading in this market are very high. Price adjustment is slow. In fact, price adjustments in muni markets takes days versus minutes in treasuries. Different buyers pay different prices for the same bond, and bonds are overly complex, reducing liquidity.

There are over 1.5 million different bonds. And they're extraordinarily complex. Over 60 percent of these bonds contain very hard to value embedded derivatives. Information in this market is hard to obtain.

If you wanted to obtain information on a listed company, you can do that for free from any website. And, you can compare that company's finances for long histories with other companies. Now, try and do the same for the town that you live in, or the school district that you send your kids to. Try and find the interest rate that your school district pays on its bonds. And then see if that interest rate is comparable to the school district across the river. You can't do it. Information is very hard if not impossible to obtain in this market for long histories that can be consistently compared across issuers.

And thirdly, municipalities pay too much when issuing these bonds. Now, you might ask, in a world of small investors with many small issuers -- in fact, there are over 50,000 municipal issuers -- wouldn't this market be naturally illiquid? Well, yes. Some of the attributes that make the market illiquid are an unavoidable consequence of the types of issuers and investors in this market. But, others are under the control of issuers and can be improved through coordinated actions.

So, for example, the reason why there are so many different bonds, over 1.5 million bonds, is because issuers issue bonds in series. They take a total amount of money to be raised and they chop it up, they mince it up into different little bonds. That's not amenable to liquidity.

By embedding hard to value derivatives, that also makes the bonds more complex and harder to trade. So there are actions that issuers can improve on through coordination.

This is a slide that shows just how illiquid these bonds are. One measure of illiquidity is the frequency of trading. Now, I've here taken bonds that actually trade. Over 70 percent of bonds don't even trade in a given year. So these are excluding bonds that never trade at all.

And I've divided them up in 10 buckets ranging from the most illiquid -- these trade once every 5 to 6 years. The typical bond trades one to two times per year. But most liquid bonds, even the most liquid, you can only trade once every two to three days. This is an extraordinary illiquid market.

Now, take the extreme case of a bond that never trades. Would you be willing to have the same -- to pay the same price for that bond as a bond that could be so close to intrinsic value at short notice? Of course not. What if you needed that money because you have a medical emergency? Or, a natural disaster strikes your house? Or, you need to liquidate your wealth because you're going through a divorce? Illiquidity and poor information are ultimately borne by issuers in the form of high interest costs.

Now, how much does this cost? Researchers estimate that the liquidity component on municipal yield spreads relative to treasuries is approximately 1.1 percent. What does this mean? Well, the average municipal yield is, on average, about 90 basis points below treasuries. They're tax advantage instruments.

Now, if municipal yields had the same liquidity as treasuries,

they would be, on average, 2 percent below treasury yields. Imagine that you could cut 1 percent of the cost of your municipal interest costs. That's what the illiquidity component is. This is tens of billions of dollars per year.

Now, liquidity and access to information are public goods. This is something that everyone can access and utilize, but it's hard for a single issuer to act alone to change the status quo. If an innovator tries to put something into improved liquidity information, then if it's successful all issuers and investors will benefit. But if it fails, then the reputation and financial costs are borne by that innovator alone. It's very hard to do that by yourself.

What you need are many people, many issuers, to do the same thing at the same time. And that's our proposal. We propose the creation of a national not-for-profit institution community which is the coordinating mechanism through which municipalities and issuers can band together to share resources. It is designed to improve information and liquidity. Set up by private funds, and modeled on the common fund for college endowments.

Originally the common fund for non profit organizations was formed in 1971. They had fewer than 100 members out of thousands of endowments. During the 1960s, college endowments were poor and the creation of the common fund helped these endowments to pool together resources for professional management to get education and to offer advice and get best practice.

Similarly, what we propose here is that a small group to start

with -- a small group of issuers would, together, band their resources, pool them, and come together and improve liquidity and information. It's entirely voluntary. You don't have to use it, but you can. But, there's hopefully a virtuous circle that will arise that the more municipalities will join, the greater the benefits will be, the lower the interest costs. People will see this and then it will attract more members.

There are three aims of this organization. To provide individual issuers with independent advice a single issuer would find prohibitively expensive. So you can pool together resources to get something that you can afford in common that you alone can't do on your own.

Second, promote the sharing of best practices information and benefit from the economies of scale standardization. And thirdly, to improve liquidity and information quality by helping to coordinate issuers and investors.

Thank you. (Applause)

DR. ENGEL: Public-private partnerships. You hear this a lot, we've heard it in the first session. And different people mean different things. It's become sort of a generic concept, so the first thing I want to do is sort of make clear what we understand about -- for this paper.

We will take the idea that public-private partnerships are about infrastructure provision. And that it neither public provision nor privatization, but somewhere in between. Which brings us to a topic which is quite

ideological. Some people love it because it has the private sector involved more than usual. Other people hate it exactly for the same reason.

We will try and -- what we attempt to do in this paper is simply provide best practice. The bottom line is, for some types of infrastructure it can do a great job. For others not, but the details are really important. We have learned a lot from the last 25 years. Partly in the U.S., more in other countries where this has been much more important than the U.S., but given the numbers we've seen from Michael Greenstone's presentation, there's no doubt that this is going to be more important in the future in the United States. The question is, to get it right and here are some concrete proposals.

What is special about a public-private partnership -- what makes it different from public provision is not that it's private firms. Even with public provision it's private firms doing the building and the like. What makes it different is that the same firm is in charge of building the project and then maintaining and operating it, which means it has incentives during the building phase to take account of life cycle costs. Basically, to make the sort of investments which will lead to more efficient maintenance. So one of the big advantages, potentially, of public-private partnerships is better maintenance, something which is badly needed in the United States.

It's temporary ownership of the asset. Basically, you get -- you have a major upfront investment, you build the project, you operate it, you finance it either through user fees or through some government subsidies or

the availability payments through taxes, and then it returns to the state. And essentially, the problems you potentially have had and have had a lot have been renegotiations, which are very common, and this great uncertainty of demand, which is at the heart of excuses of those renegotiations.

To make this concrete, let me go through two examples. One of the close to the (inaudible) Sea, the other one on the West Coast.

First, there were two major projects with private-public partnerships in (inaudible) during the '90s in the U.S. One of them was the Dallas Greenway close to the Dallas airport. This is a 12 mile road. Two independent consulting companies were asked to make projections as to how many cars would show up if they charged a toll of \$1.75. Both of them with the great data they had projected that you would have 35,000 cars. The moment came, and only 8,500 showed up. So that's 80 percent less than expected.

You can expect, as you can imagine, they went bankrupt. They had to renegotiate the contract, and you went from a 40 year contract to a 60 year contract. Okay? Not great, because it might have been that the firm that won this was not very good at doing things, and sort of was counting on the renegotiation to make the money. In general, renegotiations are not great.

Let's now go, why did this happen? It happened because nobody counted on public pressure on improving an alternative road which was for free. But that was part of the risks involved.

Maybe inspired by this, when you build another public-private partnership, in California this time, the Orange County Express Lanes, you had a public highway and you built an express lane which was a PPP. Okay? Inspired, maybe, by what happened in the D.C. area, they asked for a non-compete clause. We don't want the government to improve things or build another road because that will take traffic away from us and we might end up having to default.

And so they did. But, things went the opposite direction this time. The amount is very uncertain, and something is much higher than expected, other times much lower. This time, it was much higher. So within a couple of years, you had a lot of congestion even on this toll road which was charging \$11 for a very short ride.

What you needed badly was to build an additional lane. But, I'm very sorry, we have this contract here, the U.S. is a serious country, you cannot build this. So, it came through the newspapers that for something that would cost a little over \$100 million, somehow the state was going to pay close to \$300 million. And when it came in the newspaper they said, sorry. It was a mistake, we didn't mean to do this, really. Next you had four years of protracted negotiations, people sitting in traffic jams, waiting for the government to get this right, and they were not able to buy them out until four years after where, finally, they reached an agreement and this was put out. So, four years of very inefficient traffic in the Orange County area in California.

Okay? So, again, would have been great to have some way where you can buy out a firm and an easy way -- it was not possible at the time.

When should you use PPPs? Which are our best practice conclusions from this paper? First -- and many of the people in the first panel are going to hate this, but we're sorry. We're just going to say what we believe in. The wrong reason -- the real reason PPPs are used in most states and most countries is because it helps in a situation where you have budgetary problems. Definitely it's viewed as a way where you can do more things now because you get private money.

Well, the truth of the matter -- just take the simple example of a toll road. But it's also valid if you're going to finance via taxes. It's true, you do more things now but you give it income which you would have obtained in the future. Okay? So if you have a new toll road and you build it today, the investment is done now by a private firm. Good news, you don't need to spend now. But you're giving out the user fees, the tolls you would have charged had you done it yourself. You do the math correctly and carefully. They're both equally impressive values, so beware of that argument.

Right reasons, many potentially of them. One, it helps screen white elephants. Better than that, the cost benefit analysis we're hearing from also in the session. But if cost benefit is not a possibility, this is a second best and it helps a lot. Of course, it will filter white elephants, it will

filter bad ideas, bad projects, only if this is done through user fees. If you finance with taxes it doesn't help. But with user fees, no firm will show up if it has to finance itself with user fees.

Going to what we heard in the first part, there might be some projects there where no firm is going to show up if it really must finance of the known -- if you don't have very generous subsidies.

Second, it avoids charging unrealistically low user fees. The politics, of course, is that you don't want to charge high user fees. We know in the U.S., often, you are able to charge something but then you don't adjust to inflation. After 20 years, that can mean that you're charging way too little. This brings some very nice stories in the U.S. where when you go from public provision to PPP, finally you're able to increase according to accumulated inflation, and that's because firms tell you, well, I'm not going to be in charge of this if you don't assure me that the real value of what I'm going to collect in user fees will maintain itself over time.

Still, political pressure comes in. And in one of these examples, which is Indiana toll road, it had a great start but then there was political pressure and said, okay. We'll use shadow fees, which means the government will pay so that people are not too unhappy and the governor has an easier time, I imagine, getting reelected.

Finally -- and this is the main reason why PPPs are important and they're crucial for the U.S. in the coming decade -- it leads to getting better infrastructure at a cheaper price because you have better incentives.

It's not the private sector -- it is the private sector with better incentives. It's always the private sector infrastructure. But there's a difference between the private sector with poor incentives, and the private sector with good incentives. And what these PPPs are about, if you do it correctly for the right type of infrastructure, is providing adequate incentives for the private sector.

How, then, should you do this? Governance -- most states -- I hope this is correct. But I wonder if (inaudible) is the case -- don't separate adequately the agencies in charge of developing projects, of putting together -- of awarding projects. And those in charge of enforcing contracts. And there's a tension between those two things.

If you want to develop projects and you want to attract firms, you must be nice and you must not be a serious enforcer. If you enforce seriously, they might tell you, well, we won't be coming back. You need both, because if not you're going to have opportunistic behavior by firms. So you want to separate these two activities within states and that's one of our proposals.

Second, to avoid renegotiations there should be independence to (inaudible) renegotiations, which sort of is aimed at essentially keeping neutral in terms of returns to firms. So that you have renegotiations when they're really needed, and not to have bad faith renegotiations, both from government and from firms.

Budgetary accounting. Long story, but a simple suggestion is from the point of view of the budget, public-private partnerships should be

counted as public provision. That's a benchmark. You can go into some details around it, but that's the basic benchmark.

Finally, designing the contract. And here we have a nice proposal and it's sort of our concrete contribution to the ideas. Most of the rest, I've told you, are by common sense.

A big problem -- and back to my examples at the beginning with both the Dallas Greenway and the Orange County Express Lanes. A big problem with this project is huge demand uncertainty and the firm cannot do anything about it. Is the community going to grow at a 2, 3, or 4 percent in the next 20 years? Do you know? I hope some things but, honestly, I don't know, either.

So, what do you do about that? Have them bear this huge risk which we cannot do anything about? Doesn't make much sense. So, why not have a contract design that takes into account these big risks. Which means, a flexible term contract. If demand is high, basically it's a shorter contract. If demand is low, you have a longer contract. And that's a contribution. It's called the present value of revenue contract.

Complicated? No, pretty simple. The following idea. Firms bid on the present value of user fees they want. It costs you \$200 million, you want a 20 percent profit, your bid \$240 million. It was the best bid, you're going to get \$240 million no matter what, and the length of the contract will adjust so you get those \$240 million.

Let's go back to the two examples. Dallas Greenway. It's

true, only 8,500 cars showed up. Not the 35,000. But, still there were enough cars so that that project would eventually be profitable. Had the firm bid its upfront investment in this operation cost, it would have eventually made the money. It would have taken more years than they thought, but it would have made the money. No default, no cost through renegotiation, no problem, a solution.

Another example, Orange County Express Lanes. The problem was that the moment this firm and the moment the traffic was so high that you realized that you needed an extra lane and the firm had a non-compete clause, there was nothing to do. How did you compensate them fairly? With a present value of revenue auction, you asked for \$240 million and you can write in the contract at any moment, the government can buy you out, pay you whatever you have not cashed in yet, and re-auction again. So if the moment the traffic had grown so much -- it was in 1999, you had collected \$100 million. The government says, okay, we're sorry. This was a major success, here's your \$140 million, we re-auction again and, basically, have a new auctioneer paid with 140 and take care of the extra. It might be the same firm but, again, competitive. You get all the advantages, no problem.

So, present value of revenue auctions help assign risk in a much better way. Does this have important consequences here -- some large numbers point generally for this idea. First, PPPs have not been that important in the U.S. until now. I focused on the transport sector in this

presentation, and we're talking about \$20 billion approximately over the last decade or a little bit more.

What to expect for the future? God knows -- or, not even God. But basically, you take the growth risks for the last five years and extrapolate and you get big numbers. So, it's been growing very fast in the U.S. over the last five years. We expect, given this fiscal promise for states, even faster growth in the future. It is easy to come up with projections which are all the way between \$50 billion, \$100 billion on an annual basis from now to 2020. So, we're talking about something which is going to become important but, hopefully, let's do it right.

At least a better maintenance. And there are big numbers on the need for maintenance in the U.S. The American Society for Civil Engineers talks about more than 2 trillion -- whatever numbers you want, it's big numbers. This will help to get better maintenance, more secure infrastructure, and, in a sense also, a better economy and faster growth.

Finally, PPR measures. The reduction in risk leads to a smaller risk premium. Estimates suggest this is at least a 30 percent reduction that, again, is a lot of saving because it means that the same investments end up being cheaper because you don't force firms to bear risk they're not in a good position to bear.

Thank you very much. (Applause)

DR. KAHN: Folks, good morning. We hope that our title becomes a rock 'n' roll song, so I hope -- we have high hopes in marketing

and all I want to I my brief time is to market why I'm excited about this project and I'm hoping you'll read our ambitious paper.

We all agree that the Transport Network is critical to our well being, but we also know as our talk this morning focused on, our highways and bridges are not so young and many of them, as salient disasters have shown, unfortunately recently, we've got a lot of investment we need to do. The bottom bullet point, we may have a maintenance need of roughly \$145 billion, just a huge amount of maintenance and repair and investment needs to happen.

This graph shows you that our interstate was built long ago, and so the way to read this thing is by the year 1972, 80 percent of our highway system was already built. We built this long ago, and while it's served us well, it's depreciating.

The same for bridges; I see my beautiful California with green here. We've got some bridges -- the bridge to Madison County -- many of these bridges need some investment and we want to preempt and solve our issues before versus to have to suffer disasters and try to clean it up ex post.

And so David Levinson and I, in our proposal, advanced three proposals to make progress on how to improve our infrastructure system, and some of these are a little bit radical and we're eager to receive your feedback.

Our first proposal is to take the revenue from the federal

gasoline tax and to direct it away from new highway construction and instead to take this revenue and to dedicate it to preserving and reconstructing our existing highways. As the previous slide showed, we built these highways long ago and there can be significant economic benefits that we argue in the paper could occur if we redirect this revenue away from new construction towards existing highways where our cities have been built around this infrastructure. Expand it second. We know we're radicals and we know -- even I like a new highway and so our critics could say, are you academics saying, no more highways? No. We want state and localities to have more skin in the game, and so when state and localities identify highways that are good projects, we want to create a federal highway bank where the rules of the game would change. Rather than having steep federal subsidies for projects for building new highways, we imagine and talk at length in our paper about a new set of financing rules. States and localities would approach this new federal highway bank and they would take out a loan from this bank, which would have to be repaid. This is old school. And this would create excellent incentives. Because the states would anticipate they have to pay back the loan, they'd have to think about revenue sources, including user fees and road pricing, and economists like me love this, of how to marshal incentives to get us to a more -- to address congestion issues, and to achieve efficiency gains. And so there's a win-win here that we talk about at length and it's all about changing the rules of the game and incentives.

Now, our final policy, "Reward it Third: Performance Standards". And so while I fear teacher evaluations the last day of class, I understand why we have them. You should see my bi-modal ratings. In "Reward it Third", we formally discuss the introduction of performance standards and so if a state or locality borrows money from our federal highway bank, and if they achieve certain credible performance standards on several criteria ranging from safety to pollution to speed to equity, we want to reward those states up to the job, and they would be able to borrow at a lower interest rate. So, there's pay-for-performance, there's interest-rates-for-performance under our proposal. And so projects that perform well on these criteria will receive an interest rate reduction, and it is over.

And so to summarize, we're radically changing the rules of the game, with, we think, a better incentive structure, to achieve the goals that we talked about this morning but we are hardheaded economists for bringing this about.

Thank you.

DR. GREENSTONE: Okay, I wanted to thank the authors for their excellent presentations, and we're going to give Tyler Duvall, who was a high ranking official in the Department of Transportation, a chance to respond, but I wanted to just set up Tyler's remarks, kind of in the context of what we try to do at Hamilton.

So, we took -- we found three academics, all of whom had

ideas, and tried to help them and take their ideas and make them usable in Washington. And as Matt said, you know, maybe it seems like it's radicals that bonds should be transparent, maybe it seems like it's radical that private-public -- public-private partnerships should be set up in a way so that they can exist and work, and maybe it seems radical that we should only build roads that people want to use, and I wonder if you could help us understand if that really is radical. Because I do have these two hats, one as an academic and one as the director of the Hamilton Project, and at least with my academic hat on, these don't sound like radical ideas; they sound like ideas we should implement yesterday.

So, what did you do during the Bush years?

MR. DUVALL: So, I guess I'll say, the ideas all make perfect sense and I agree, so let's end the panel -- no, so, obviously, I mean, the one overarching point about all three, I think, I would say is, surgical tactical is better at this point in history than sweeping reform. I think given the current environment, frankly today and for the last ten years in infrastructure policy in the U.S., sweeping reform has gotten a lot of air time, but the reality is much more surgical, tactical changes are far more likely to see support on a bipartisan basis at the federal and state level.

The short answer to your question is, we pushed a lot of ideas similar to what's been talked about, with varying degrees of success, not so much success at the federal level, growing success at the state and local level, and so while there's this kind of pessimism about the

federal climate, which is understandable given the current conversation, I think at the state and local level you're seeing seeds of substantial change underway and I think in 10 or 15 years the climate for reform in infrastructure is going to look a lot different than it is today.

So, the problem with infrastructure is that the national conversation gets a little too much airtime, state and local conversation gets a little too little.

Let me just go from this side, start with the kind of -- over all highway program paper. My comments about sweeping reform would hold there too. This is a fairly sweeping reform proposal, but it's actually kind of surgically proposed. I think one of the challenges with what's being proposed is that there's obviously a huge constituency related to new build projects in the U.S. with a lot of influence and power over the discussion. I think generally speaking a blanket statement that we just want to build -- you know, rehab existing facilities versus build new stuff comes into challenge in certain areas. There are a lot of rehabilitation projects that make very little economic sense and there are a lot of new capacity projects that make a lot of economic sense, and there are a lot of projects that fall in between, which are basically blended rehabilitation and new capital projects and I think particularly in the larger metro areas you're going to see a lot of those projects move forward in coming years.

So, the really great thing about the paper, though, is it highlights this recapitalization challenge, which I think is kind of bubbling

beneath the surface of the U.S. Even as we talk about new spending vehicles, new financing vehicles, it's very clear that we are now at a point and at an age of the system that recapitalization is just going to be moved to the forefront based on obvious failures that are going to start to be demonstrated.

So, I commend you for focusing on that. I do think the Obama Administration is starting to focus on that, particularly on the transit side. There's a lot of discussion about, you know, "fix it first". That language seems to be seeping into the vernacular. I will say, having slogans really matters in infrastructure. The "bridge to nowhere" was the most powerful slogan ever in infrastructure policy history so maybe "fix it first" will come in second.

I think the other point, though, is that the recognition that infrastructure resource allocation is a far deeper problem than earmarks, a lot of discussion about earmarks and fixing earmark problems. The reality is cost-benefit -- and Rob Puentes talked about this earlier -- is really not infused at all into the state and local decision process to any great degree and you look at what other countries around the globe have done for various reasons, they've been able to establish political mechanisms that basically recognize the expertise of big developers and decision makers in this process and we in the U.S., I think there's this sense that everybody's an expert when it comes to resource allocation and we've lagged a bit, obviously, in implementing disciplines like cost-benefit.

Last thing I would say about this paper is that pricing, at the end of the day, continues to be a core problem and is directly related to the resource allocation question, so I would encourage you all to continue to emphasize the fact that the lack of pricing or the mispricing of these assets is producing a lot of the problems associated with the failures you're trying to correct.

On the PPP paper, obviously we have a huge challenge with PPPs in the U.S. that has not gotten solved. It's one of the most talked about, least implemented ideas probably in U.S. government policy history. We've been talking about it for 10 to 15 years in the U.S. with varying degrees of success. Still very few states have legislative mechanisms in place to do anything with this. Several, about five or six, have -- what did you call it? -- sweeping legislation to allow this, have encountered some of the problems described in the paper, and as was pointed out, you have a classic expectations gap where the private sector comes into a project expecting to have very high returns, very low risk. The public sector expects to dump all the risk on the private sector and have the private sector earn zero or very little returns. That doesn't really work as an equation and as a result we've seen a trickling of projects; '08, '09 and '10 were a very slow pace development of these projects even as these pools of capital around the globe are investing in huge infrastructure projects everywhere else other than the U.S.

The one thing I would say is, you know, shared demand risk,

as is effectively kind of what you're proposing at some level in which you basically allow the entity to shift revenue streams out further to recapture revenue, has a lot of merit and I think we need to experiment with some of these alternative structures.

As was pointed out, though, the state, kind of, programmatic mechanisms to implement these are very weakly developed at this point in history, so what happens is a governor or mayor says, I want to push this project, they go run out, hire financial advisors and other specific project or transaction consultants. They get into the heat of a political battle on that transaction and then things start to unravel as the economics look weaker and weaker.

Developing institutional capacity is a huge weakness in the U.S. It's what every other government that has successfully pursued PPPs has done. We're starting to see the seedlings of that in the U.S. but we're way behind the rest of the world. So, we need to experiment, we need to learn a lot more about PPPs and I commend you for that.

On the municipal finance stuff, I think I would simply say that we've got -- one comment is that there is, I think, a distinction in terms of effectiveness of the municipal finance market when it comes to kind of geo-backed bonds versus project-backed bonds. I think generally speaking, there's a lot of problem understanding what's really going on with the books, as the SEC is kind of exploring regularly right now in these municipal and state governments. That's not a new fact. I think clearly

adding liquidity to those markets is going to help a lot.

One interesting point about what you're proposing is that all of the folks who are proposing infrastructure bank or financing vehicles at the federal level have run and will continue to run into resistance from the Treasury Department about the unitary financing that the Treasury Department currently uses and precisely because of the liquidity transparency of the Treasury markets, there is concern in various circles of the federal government about the fact that another financing vehicle at the federal level would actually disrupt that mechanism. We have a bit of an expert over here in the corner who maybe will comment on that in the coffee hour. But I think ironically, you know, there's a proposal at the federal level to create new instruments, there's a proposal at the state and local level to obviously start to collapse these instruments. I think the bottom line is we have a huge municipal finance problem. It is critical to getting these projects done. If you look at leverage ratios today for an infrastructure project versus '05, '06, you were financing a major PPP with 5, 10 percent equity, 2005, 2006, even using the municipal bond market. Today, obviously, you've got to be in the 40 to 60 percent range to get anything done. So, unless we can figure out how to get these credit markets loosened with a lot more transparency in reducing the borrowing costs, we're going to continue to have an infrastructure challenge in the U.S.

DR. GREENSTONE: Thank you very much, Tyler. I thought

I would pose a question to each of the authors before we turn it over to the audience, and just going in order I thought I'd start with Andrew. So, Andrew, I was incredibly struck by that graph you have of how infrequently many bonds trade. In several it seems like a high fraction of them trade only once or twice a year. And then it seems like you went from that to showing that the liquidity premiums or the extra amount of interest that municipal governments have to pay due to that lack of liquidity is about 110 basis points a year. So, that's \$30 billion a year.

Could you help us understand? It sounds like there's free money laying on the table. Why hasn't that problem been solved?

DR. ANG: Well, I think there are several impediments in solving that problem, the first one is that liquidity is a public good. In fact, as an economist I would call it a positive congestion externality. So, what that means is, usually when I drive on a freeway and it's rush hour, there's huge traffic jams and that's because I don't take into account that I'm going to be causing problems on the freeway when I drive right at peak time. That's a negative externality.

Liquidity is a positive congestion externality, so usually issuers don't take into account that if I make my security more amenable to liquidity, that not only makes my own security more liquid and reduces my financing costs, it makes the entire market and all issuers will benefit from that. It's a public good.

Now, public goods, like all types of market failure, require

some external coordinating mechanism to solve and at least in our proposal, Common Muni is that mechanism to solve that coordination problem. By yourself as an issuer there's no incentive, or little incentive, to make the security look different from everyone else's, but if everyone, or a lot of people got together through Common Muni, at least you're not doing this by yourself and Common Muni can help facilitate that coordination among issuers and that's -- so the essential heart of this problem is, it's a public good.

DR. GREENSTONE: And so this infusion of information could be worth \$30 billion a year?

DR. ANG: It depends on how much you would remove, but I think the cost of starting up this project would be in the tens of millions. The benefits would be potentially in the tens of billions.

DR. GREENSTONE: Sounds like a good deal. Eduardo, I was struck during your presentation, and I thought back to the first panel when there was the big discussion about high speed rail, and you know, you hear different things about high speed rail, on the one hand China is going to soon have a train that goes 600 million miles an hour and we're in go-carts or something like that here in the United States, and then you see other people say, well, you know, actually there's airplanes that could go just as quickly and maybe it would be less expensive, and I had this unbelievable idea: couldn't we use public-private partnerships for high

speed rail and what would that look like? How would it work?

DR. ENGEL: Well, so, the issue would be basically that I doubt that this would get going without some generous subsidies, and what we heard in the first panel was that the former governor was aware of this and he was talking about some sort of subsidies and the question is how large those subsidies need to be. So, in a sense --

DR. GREENSTONE: Why would there need to be subsidies?

DR. ENGEL: Because it's unlikely that we have enough demand to finance the cost of these --

DR. GREENSTONE: I thought that was point of your proposal was to help figure out which were the projects that we want to do and which were the ones that we don't want to do.

DR. ENGEL: Oh, I see. So, yeah, well, my proposal --

(Laughter.)

Public-private partnerships work to filter bad projects if there is no government guarantees involved because -- so, the first test, which I can tell immediately what would happen is, we come up with a PPP for this high-speed rail and there's no subsidies and I can tell you immediately, no firm is going to show up and the next thing you have to do is think about how much you want to subsidize and how you distribute those subsidies across different states --

DR. GREENSTONE: And there might be legitimate reasons

for the subsidies?

DR. ENGEL: Oh, absolutely. I'm not saying not, but then you are into the question of, let's have a cost-benefit analysis of what is the cost involved and what are the subsidies involved and there the public-private partnership advantage is not obvious beyond, something I do believe, that with the right incentives firms are more efficient, but it might be that the subsidies are huge and in a moment where we have limited resources there might be other projects that are more important.

I don't know the numbers and I don't think the numbers are available based off what you've been saying, but I would like -- and so the world is full of projects like these, which are not done for the right reason too. I mean, it's not only would they tell you the projects which are done, they don't tell you those that are not done. I'm not saying that we should or should not have it, I'm saying we definitely need much more information of what's involved here and in that sense, a public-private partnership does not do miracles. It does not. I mean, definitely, if a project does not finance itself, a PPP will require generous subsidies and then the question is, does that still provide the right incentive, and it will depend on how you do it.

DR. GREENSTONE: Okay, so I can see a common theme developing here which is that all of these proposals, in one way or another, want to shed light on the way in which we make infrastructure decisions. And so, Matt, I thought your proposal was in that vein too and I

wondered, one question that I had about the pricing was, you know, is this just like another policy to help rich guys get where they want to go faster? And what are we going to do about the guys who don't have as much money?

DR. KAHN: So, we thought hard on this topic. I am not welcome on these Lexus lanes and that's -- and so, we -- if the price is currently zero and if we raise the price -- we talk in the paper about several strategies, using information technology and other strategies to protect certain income groups. There's also a nerdy empirical literature that people are pretty responsive to prices and are able to change their work schedule. So, if we have an on-peak price for driving on the Los Angeles 405, the flexibility that some people have to re-jigger their life to travel off peak, but David Levinson and I recognize that there will be some people who -- there could be equity implications of our proposal and we talk about some strategies of endowing people whose income is below a certain threshold with sort of an easy pass where you have credits to use this road multiple times, and if you don't use those, you can sell those on sort of an eBay exchange.

And so we tried to be subtle in our proposal to pursue efficiency and equity, but this is a very legitimate concern with moving away from a price of zero.

DR. GREENSTONE: I wonder if anyone else -- if any of the authors wanted to comment on each others' papers or ask questions or

we could turn to the floor?

Matt, I've known you for a decade. I know you have a question for someone about something.

DR. KAHN: So, I --

DR. GREENSTONE: Perhaps not related to this topic, but --

DR. KAHN: I know we're being video taped. So, Eduardo, the -- around the world -- so, in your detailed presentation, around the world has any nation really shown its stuff on private-public partnerships? So, do you have a best practice around the world?

DR. ENGEL: I would say the following. We went through a wave of public-private partnerships that began in the late '80s and we've learned a lot and a number of countries are going through changing their PPP laws in the right direction. For example, these present value revenue auctions were not possible in certain legislations and now they are possible and are being used on a routine basis in at least two or three countries now, and the question is, why not in more countries? And because it makes negotiations harder so firms don't like them, and why -- and since firms don't like them, they're (inaudible) because they want firms to be happy, but you need a budget crisis to often get things right. So, Portugal was an example where they had shadow fees and there came a moment where they were financing many highways through huge amounts of money from the budget of the public works ministry. At that moment there was a crisis before the current one, and this was 2004, and

at that moment someone said, you know what, maybe some other idea is better, and at that moment the lobbies were very weakened because there was no money at all to do anything, and at that moment they shifted to having flexible term franchises and to based them on user fees, no shadow involved, and they're doing a great job with that.

So, yes, it takes more time than you think but it's moving in the right direction and a number of countries are discussion legislations. One of the advantages of the U.S. -- and I agree with you, the U.S. has been a latecomer here -- but one of the advantages is you don't need to do all the mistakes if you start later. You can sort of skip some of the mistakes and start where others are not. And it's important because often once you have in place a system which is not working well, changing it is much harder than starting correctly, in a sense, and the reason for that is that once you have something in place which is not correct, you have a vested interest which likes the way things are. Whereas if you were starting from scratch, often those interests are not that well organized and not such a part of the system, and therefore you have an easier job to start correctly. I think the U.S. has a great opportunity here.

DR. KAHN: Michael, can I ask you a question?

DR. GREENSTONE: Sure.

DR. KAHN: I'm seizing control.

(Laughter.)

Do deficit challenges create new opportunities? In

Washington will we see more innovative thinking moving forward? Will the economists be listened to a little bit more?

DR. GREENSTONE: You know, every day we wake up thinking today's the day we're going to be heard and I do think that the current budget pressures make it a little bit more likely, and, you know, we're certainly going to be trying to advocate for your ideas.

DR. KAHN: Thank you. That was my real question.

MR. DUVALL: Can I -- on the PPP front, I mean, I think that the common lesson from the countries that have done it the best is that the people running these programs are dispassionate, not advocates for these projects, that they tend to be from the CFO financial side of the internal mechanisms within the government, the Treasury and that typically the evaluation, as I said, is not done by people who are actually advocating the projects, but that can be somewhat unbiased.

The other big problem, though, with PPPs is you lose a lot of network effects that are potentially possible particularly in infrastructure and any other network utility. When you start doing project by project, you lose, obviously, the ability to integrate, kind of, transit and highway policy in specific quarters. You also lose the ability within metropolitan areas, potentially, to kind of produce higher network effects from shifting demand, exactly what we see in the railroads, electricity providers, everybody else who is shifting demand over their networks to maximize efficiency without huge capital investments in those sectors. You lose some of that when

you have kind of isolated project-based approach. I think the PPP model could actually expand to provide for some of those network incentives. No one in the world that I've seen has actually tackled that yet.

And to your point, the U.S. is actually fertile ground for new thinking on that.

DR. ENGEL: Can I reply to that briefly? You are absolutely right that with networks, PPPs become harder, but still if you use these flexible type contracts where you can change the user fees in response to changing demand and to network changes, it makes it much easier because basically firms have been guaranteed a certain amount of revenue and present value and they will care much less about changing the amount of time it takes to getting that than if you have a fixed-term contract which is what's used most of the time. So, present value of revenue contracts help you also incorporate quite a bit better network externalities (inaudible).

MR. DUVALL: Yeah, I mean, the other thing that I would actually disagree with one thing you said is the fiscal impact, you said that there's not a potential fiscal impact. I do think that governments, with their capital assets -- broadly, not just infrastructure assets -- are somewhat systematically underestimating the true cost of ownership, as you pointed out, for those assets, and clearly if you're looking at taxes, spending, and capital assets as kind of part of the big equation for fiscal stability, if you could effectively transfer the risk of cost overruns, O&M of these assets,

there should be long-term fiscal benefits to doing that. And rating agencies and others should recognize that. If the contracts are properly structure -- now, a lot of the contracts are not structured so there's residual liability for the governments in those transactions, but if you can do it correctly and you've got good lawyers and advisors, you should be able to see a long-term fiscal benefit from the transaction.

DR. ENGEL: Let me just add, and if we're going to converge half way in between -- I agree, if you can really deal with a renegotiation issue. If contracts a renegotiated down the road, it's bad fiscally, it's bad for incentives, you lose a lot of it. If you can deal with that, great. I agree.

DR. GREENSTONE: Okay, I thought it might turn to some questions from the floor. We seem to have no shortage.

MR. SCHWARTZ: Thank you. Stewart Schwartz with the Coalition for Smarter Growth here in the Washington D.C. region.

I have a Virginia PPP question. They've had the law since 1995. We have a governor with presidential aspirations and he's about to borrow \$3 billion, \$1.5 billion into a PPP -- PPTA trust fund, and an infrastructure bank to make low interest loans to these builders. He now says a road called Rout 460 in Southern Virginia is one of his top priorities. It goes between Suffolk and Petersburg, south of the James River -- very little traffic, nothing compared to what we deal with in the metro areas. There's a parallel road that could be upgraded. The CINTRA, the only serious applicant, says, we need \$781 million in public

money, we need \$491 million in loans, and we'll put up a couple hundred million for about 15 percent of the project, but thank you for the 75 years worth of toll revenues.

I don't see any cost-benefit analysis. I don't see it compared to other things that we need to be doing in the state of Virginia, yet all the authority to make the decision-making is in the governor's office with his Secretary of Transportation.

Have you looked at how Virginia's use of program -- would you be interested in looking at Route 460 as a case study? Thank you.

DR. ENGEL: Okay, so the answer to the second question, obviously, yes. I would love to look at it. The answer to the first question, I have not, but let me -- based on the information you have given, I'll just make one comment which I can stand by, the rest I would love to see and be in contact with you, which is, it is a bad sign if only one firm is interested. If your statement is true, I'm absolutely sure, a well-designed project that has gone through all the checks and balances you want here should have much more than one firm, two, three, or four easily, so that would be my first thought and I'm happy to talk to you afterward and get the details.

MR. SCHWARTZ: Well, let me clarify one thing. There are two other applicants, but they are real estate development firms that are arguing that they should be given development rights along the corridor and they have no track record in public-private road projects, so they're

not one of the national -- multinational firms that builds these projects.

DR. ENGEL: Sounds close to one.

DR. GREENSTONE: Okay.

SPEAKER: My name is Penny (inaudible). I'm with the National Association of Bond Lawyers and I have a question for Professor Ang. I found your proposal on the Common Muni very interesting and I have two questions related to it. The one aspect that doesn't seem to be mentioned either in your presentation or in the document I have is the role of credit rating agencies in the market for munis and I'm sort of curious if you -- I mean, I'm skeptical, for example, that Chapter 9 really makes a difference in terms of the, you know, pricing of munis because notwithstanding Meredith Whitney, I don't think there is a lot of, you know, Chapter 9 filings, but the ratings, I would imagine, are noise in one direction. I'm curious if you have no recommendations about them because you think they're a lost cause or there's no problem there, and second, your paper does mention the Build America Bond Program, but Congress didn't see fit to extend it and I don't see much change since it's been so deeply mischaracterized. Do you feel that ordinary tax credit programs -- I mean, you know, that those bonds can be made liquid and low-cost issuances, or are they inherently too difficult to come up with a market for the tax credits?

DR. ANG: So, let me take those two questions separately.

So the first one for credit ratings, I think that credit ratings in the municipal

market are as useless -- I mean, useful as the regular corporate markets. (Laughter) In fact, they're even more -- they actually are even more stale and are updated even more infrequently. Some ratings are not even updated after the initial issuance, for example.

For the second question, the Build America Bond Program, research has shown that that did significantly reduce borrowing costs for municipalities. Absolutely, it did. Now, whether this is actually due to the tax credit design per se or it's actually due to improvements in the design of the bonds to foster liquidity is a different question. So, for example, Build America bonds have larger issue sizes. There is less in series' issues, so there's greater float. There are fewer and better derivatives. All of those foster liquidity.

And there's also the second question about how you design that subsidy. That subsidy was fixed at 35 percent. One motivation is that's the highest marginal income tax rate, but that is not the amount that the Treasury actually foregoes on the tax collection of these bonds. So I think any future program like the Build America Bond Program would have to be informed by a lot of these issues about liquidity, design, the actual types of subsidy.

And then finally, associated with this is that municipal bonds are very special because they're usually held by individuals, so individuals benefit from the income tax exemption. Any market where you expand the number of participants will increase risk-sharing abilities and will, in

principal, reduce borrowing costs for municipalities.

MR. DUVALL: There's a real important nexus, by the way, between PVPs and the healing or improvement of the municipal markets. Obviously the cost of capital advantage for municipal borrowers is one of the main reasons many have not pursued public-private partnerships in the U.S. No other country in the world has a municipal market the way the United States does. And I think there's an interesting potential collaboration with you two on that.

We pushed in the last administration for an exemption called Private Activity Bonds to expand the tax-exempt facility list of the code to allow private infrastructure projects to basically benefit from the same tax-exempt status. That's the reason the Capital Beltway Project got financed at some level, and there's three or four more that have gotten financed under that change. But the more liquidity, ironically, you develop in the municipal markets, the more the argument will be we don't need to use private capital. So just be aware of that tension.

DR. GREENSTONE: Okay. I think we'll take a final question in the back.

MR. NELSON: John Nelson with Wall Street Without Walls. I'd like to thank the panel for really an excellent presentation.

Bruce Katz has heard this before, so he'll probably roll his eyes, but the whole idea of using dead or underutilized assets as a risk mitigation, as a way of getting new capital, is something that we've

recommended. The federal government, for example, has about \$10 billion of assets that come into its coffers every year. They sell them off at auction. They hold them in virtual and real warehouses. States have all kinds of illiquid assets that they're holding on their books. Cities have all kinds of vacant lots, et cetera. These could be used as extra collateral to help finance infrastructure and other economic development activities.

Well, how much of the city of Detroit is owned by the city of Detroit in terms of the landmass? Let's utilize those underutilized assets as a credit enhancement, as a way of mitigating risk, and bringing more money into the infrastructure and economic development sphere. So that's -- we're always putting our oar into that water.

DR. GREENSTONE: Okay.

MR. NELSON: Structured finance for good.

DR. GREENSTONE: Thank you for that statement. I wonder if we could take one last question. I think the woman in red there.

MS. LINDSLEY: Thank you. My name's Lisa Lindsley. I'm from the American Federation of State, County, and Municipal Employees.

I wanted to make a comment and ask a question of Professor Ang, also. Just following up on the Build America bonds, you know, as someone who worked to restore transparency to the over-the-counter derivatives market I really applaud your effort and also caution you that because the bid ask spreads will narrow if you're successful, there will be large forces at work to prevent that from happening. But it

would be good for both issuers and investors.

I do think that, you know, your comments on the Build America bonds were spot on and the diversification of the investor base that occurred with Build the America bonds was important and that the subsidy could be revenue-neutral. It doesn't have to be 35. It could be 28, whatever. And that that alone would really improve the liquidity of municipal bonds because you had sovereign wealth funds and even public pensions who are tax -- who can't buy tax-exempt bonds because they're already tax exempt.

I did want to point out one thing in your paper that I think detracts from the credibility of your ideas, which was your endorsement of the idea that public pension funds or that state and local governments are the equivalent of a married couple who has a mortgage. Because, like it or not, we'll always have New Jersey with us. New Jersey can't go bankrupt and get a federal bailout the way a GM could and it can't resort to the PBGC. It does have taxing authority, so the idea that public pensions need to use a tax-exempt rate to discount their liabilities is really a recipe for less transparency instead of more.

Thank you.

DR. ANG: So this issue of public accounting is really a larger issue of the differences between GASB standards, which are entirely voluntary -- there's no penalties for non-compliance with this; in fact, only 26 states require GASB -- and the FASB standards, which have

differences, and one of the major differences: how they account for certain liabilities, in particular pensions.

How many people here think that no state has defaulted?

Has any state in the U.S. defaulted?

DR. GREENSTONE: California will. (Laughter)

DR. ANG: Okay. So in the past tense, in the history of the U.S. have there ever been any?

SPEAKER: (inaudible)

DR. ANG: In fact, Arkansas has defaulted three times.

There have been three areas of default in the U.S.: during the 1830s and '40s, in the late 1800s, and Arkansas was the last one in 1933. In fact, the Charles Dickens novel published in 1834, Ebenezer Scrooge, the guy that, you know, the ghosts of Christmas past, present, and future gets taken through his life, he has a nightmare. Well, he has several nightmares in that book, but one of them is that his wealth is transformed into "a mere United States security." (Laughter) So states have defaulted. They certainly have defaulted.

So the issue of public pension accounting I think is something way beyond our panel right now, but I think that you want to present your liabilities in the most transparent way possible. And I think we can definitely agree on that point. The difference then is on what that transparency is.

Now, making -- in my belief you want to make that liability as

accurately stated as possible. Misstating that doesn't make the liability go away. But I think we are in full agreement that transparency is a really good thing. Our only argument is actually in how to create that particular detail of transparency.

DR. GREENSTONE: Thank you, Andrew. So I wonder if everyone could join me in thanking Tyler and the three authors, who I think all did a great job. (Applause)

* * * * *

CERTIFICATE OF NOTARY PUBLIC

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

/s/Carleton J. Anderson, III

Notary Public in and for the Commonwealth of Virginia

Commission No. 351998

Expires: November 30, 2012