THE BROOKINGS INSTITUTION

TAX POLICY AND U.S. MANUFACTURING

IN A GLOBAL ECONOMY

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Welcome:

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The State of U.S. Manufacturing:

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THE IMPACT OF TAXATION ON LOCATION OF MANUFACTURING ACTIVITIES:

Moderator:

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Panelists:

PAUL OOSTERHUIS
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SHOULD THE U.S. REFORM THE TAXATION OF MANUFACTURING?:

Moderator:

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Panelists:

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P R O C E E D I N G S

MR. GALE: Good morning, everyone, and welcome. My name is Bill Gale. I'm a Senior Fellow here at the Brookings Institution and co-director of the Tax Policy Center, which is a joint venture of the Urban Institute and the Brookings Institution.

This morning's event is on Tax Policy and U.S. Manufacturing in a Global Economy. It's co-hosted by TPC in the International Tax Policy Forum. One of the questions we will address today is the status of manufacturing in the United States: Is it as tenuous as my voice is today, or is it on more solid ground and which recover first?

Then manufacturing is at the center of two enormous debates in the U.S. The first is on employment productivity, competitiveness, innovation, et cetera. Manufacturing, of course, is a key source of all of these, and their role, at least in employment, has been changing over time. And so we'll talk about that.

A second debate, of course, which is central to the title, is about corporate tax reform, which, like Mark Twain commented about the weather, "everybody talks about but nobody does anything about."

The canonical tax reform is to broaden the base and lower the rates. The interesting issue there is that if you took that seriously and literally, you would probably end up raising the effective tax rate on manufacturing, which then would conflict with the goal of boosting manufacturing from the competitiveness, innovation, and productivity viewpoints.

So, there's a lot to talk about, and we're going to get right to it. I want to introduce John Samuels, who is the head of the ITPF -- the International Tax Policy Forum -- and a V.P. and senior counsel at General Electric.

MR. SAMUELS: Thank you, Bill, and good morning. I thought we were starting a little early -- it's 5 to 8 back there, and I realize Brookings is not quite with the times, so. (Laughter) So, good morning, and I want to add my welcome to Bill's. Thank you all for coming.

I am John Samuels, the head of Tax at G.E., but today I'm here in my capacity as the chairman of the International Tax Policy Forum, and that's an independent group of 40 major U.S. multinational corporations, and we're really pleased to have the opportunity to co-sponsor this conference with Brookings today.

Now, we have a terrific program, and I want to thank Brookings for helping to make this possible. I know you're all familiar with Brookings and the important role it plays in sponsoring programs like this on important issues of public policy.

And hopefully you're also familiar with the ITPF by now. Let me ask, how many people here have heard of the ITPF by now? How many of you have not? All right, well, I'm sorry for those of you who have not. We've been around for more than 20 years sponsoring conferences like this one and sponsoring academic research. And for those of you who are not familiar with the ITPF, I want to spend a minute or two telling you about what the ITPF is. And as I always do, I start by telling you what the ITPF is not.

Even though we're a group of major multinational corporations, we are not a lobbying group with an agenda for particular legislative change. We have not and do not lobby for specific or even general changes of law or policy. Indeed, I doubt -- in fact, I'm sure -- that we could not reach a consensus among our members on a particular tax reform proposal. Indeed, what the ITPF represents is a truly unique intersection between business, the academic community, and government policymakers.

Now, we organized the ITPF in 1992, more than 20 years ago, with the principal mission of sponsoring independent academic research in the area of international taxation. Our goal was to develop, over time, a body of objective economic research on how tax policy affects cross-border flows and international investment that hopefully would help policymakers make more informed decisions about the design of the U.S. international tax system. When we started in 1992, the state of the art was Peggy Musgrave in CDN, and I think we've come a long way since then.

Today, under the guidance of Jim Hines, who's the ITPF's director of Tax Policy Research, we're supporting a wide variety of research projects undertaken by leading academic economists in areas of international tax that are interesting to them. And our research program is overseen by our distinguished and independent Board of Advisors, who, in addition to Jim Hines of Michigan, includes Alan Auerbach of Berkeley; Mihir Desai of Harvard; Michael Graetz of Columbia; Matt Slaughter of Dartmouth; and Michael Devereux of Oxford University. And we're really very fortunate to have this incredibly talented group of academic thinkers to help guide our research program.

Now, I want to be clear as I always am clear on a very, very important point. It is the stated policy and practice of the ITPF not to attempt to control or influence either the subject matter of where these academics decided they wanted to do their research or certainly the conclusions of that research. I think everybody in this room -- as I hope you know, no good academic worth his or her salt would allow that to happen.

Now, we sponsored or co-sponsored many conferences on important issues of tax policy over the years ranging from the effects of FDI on the domestic economy to locating taxable income in the global economy. These conferences have spawned more than 30 academic papers of economics effects of international tax policy, papers that hopefully have advanced our knowledge and contributed to a more rational and informed debate.

Now, today we're going to be discussing another important area of tax policy: How taxes affect U.S. manufacturing in today's increasingly globalized economy, an area that is certainly topical and right for consideration.

Now, many believe a flourishing manufacturing sector in the United States is crucial to the future's strength of our economy. They argue that a strong and vibrant manufacturing sector is critical to maintaining high-paying jobs in the United States, to growing our U.S. exports, to maintaining the U.S. leadership in R&D, and even to protecting our national security. And as a result of these spillover effects, these people argue that we should provide special tax benefits to encourage more manufacturing to be located in the United States.

Let me read you a statement describing this point of view, and as I read it I want you to guess where you think it came from.

"The manufacturing sector plays and outsized role in the U.S. economy with significant spillovers to other sectors that make it particularly important to future job creation, innovation, and economic growth. Furthermore, the United States is in a global competition for manufacturing investment. And both existing and emerging manufacturing industries are subject to more intense international competition than other sectors of our economy."

So, think this statement came from the National Association of Manufacturers? I see some nods. Or maybe the U.S. Chamber of Commerce or maybe the Business Roundtable? None of the above. Nor did it come from any business group. Instead, this statement was taken from President Obama's "Framework for Business Tax Reform" that was released last February. And it was offered as an explanation for why the administration was recommending special tax incentives for manufacturing. Specifically, the President's "Framework for Business Tax Reform" recommends reducing the top corporate rate on manufacturing to 25 percent, and that's a 3-point reduction from the generally applicable 28 percent top corporate rate recommended by the President's claim.

And the President's framework goes on to recommend a rate even lower than 25 percent for income from advanced manufacturing. They don't specify how low that rate is to be, and they don't define what advanced manufacturing is.

Now, there would of course be many practical and political challenges and questions in defining what would qualify as manufacturing that would be eligible for the reduced 25 percent rate and also in defining what constituted advanced manufacturing even eligible for a lower rate. But if we step back, there are much bigger questions here.

• First, should the U.S. be providing special incentives for manufacturing at all? If so, should these incentives be delivered through the tax system? And if they're delivered through the tax system, what kind of tax incentives would be the most effective at encouraging more manufacturing to be located in the United States?

• In today's global economy where the most highly profitable corporate capital is also the most highly mobile capital, would we be better off by providing incentives targeted to new investment, like accelerated depreciation, which is sort of the conventional wisdom? Or would we be better off with incentives in the form of reduced rates, as recommended by the administration? Very important question.

• And last, but certainly not least, how should the U.S. respond to what other countries are doing to attract the manufacturing operations of companies with highly mobile and highly profitable intellectual property, the industries of the future?

Now, these are all fundamental, timely, and very important questions that demand and deserve full, rigorous, open, and transparent discussion and debate, exactly the kind of public discourse that the ITPF was formed to foster.

Now, hopefully, this conference is going to shed some light on these very important issues, and I think we're going to break some new ground. For those of you who want to understand how things work in the real world, I would tell you to particularly pay attention to Paul Oosterhuis' presentation and Fritz Foley's data behind that. And we're going to shed some light, as I say, on these very important issues. We have leading academics, economists, practitioners, and former government officials to help us consider these issues.

Now, it's going to be very surprising if all of our participants in this conference are in complete agreement. I'm sure several of the presentations will engender some lively and hopefully enlightening discussion, and that's good. I encourage our large and very well-informed audience to join in the discussion, because where there's heat, there is generally light -- or often light.

And, finally, I'd like to express my appreciation to Bill Gale and Brookings and to Jim Hines, the ITPF policy director, and to Peter Merrill and Marjorie Swett of Price Waterhouse for helping to make this conference possible.

So, now I want to turn the microphone back over to Bill Gale, who's going to moderate our first panel on the state of manufacturing in the United States, which I think is probably as good as Bill's voice. We'll see.

MR. GALE: All right, you'll be rid of me shortly. My job here is simply to introduce Martin Baily, my colleague, Senior Fellow here at the Brookings Institution, to talk about the state of U.S. manufacturing. I will say this not just because he is my colleague but because he is the expert in the field, I can't think of a better person to tee up the issues for us to start off the event.

So, Martin, the floor is yours.

MR. BAILY: Thank you.

Thank you, thank you for having me. It's a pleasure to be here. All right, this works.

So, I'm going to say a bit about the state of manufacturing. There are others that will talk about it. I'm not going to, for example, say a lot about the technology side, although it's something of great interest to me. We have Rob Atkinson I think here and others who can talk about that. This is more a stage setting, if you like, for some of the issues.

So, the first chart is one that is striking, depressing from a certain point of view. I think it puts some error of realism about what is likely to happen to manufacturing in terms of output and employment.

So, the shot is the share of manufacturing employment in total employment in the United States. And, as you can see, it's pretty much a straight line decline that predates large trade deficits the U.S. had in manufacturing trade surpluses until around 1980 -- has run big deficits mostly since then. It's also a period where the U.S. manufacturing sector was very much dominant in the global economy in the early part of that period. It also covers periods of recession boom and slump. And we know manufacturing is a cyclical industry, so there are some bumps along that road. But basically this is the pattern of manufacturing employment over the last 50 years or so.

If you look at any other advanced country -- Bill has the problem that his voice goes when he has a cold; I tend to have that problem all the time, but I apologize -- if you look at other manufacturing economies, you will see pretty much similar trends.

The share of manufacturing in total employment has been declining at about the same rate in the E.U. as it has in the United States. There are some differences across the E.U., not so much in the rate of decline or the rate of decline in the percentage but in the level of employment. For the E.U. overall, the share of employment in manufacturing is about the same in the E.U. as it is in the United States. However, it's quite unevenly distributed. Germany has about twice the share, so it's closer than 20 percent in terms of employment. It's the manufacturing hub within Europe and runs large trade surpluses both with the world and with the rest of Europe. Other countries are lower down on the list.

But if you just compare the U.S. to the E.U., there's a surprising amount of similarity, so this is not a pattern that is U.S.-specific. It's something that goes across the board. Even some of the emerging countries -- if you look at Korea, you're starting to see declines in manufacturing employment. It appears to be that there's a period of economic development when the manufacturing share rises and then it peaks and starts to come down. So, most all, I think, of the advanced economies are in this phase of declining share.

Now, the share of real GDP in manufacturing is not declining. If you look at it here, it looks like it's got a slight upward trend. When we look at the numbers here, that's not the case. By coincidence, the rate of growth of real GDP, a real output I should say, the real value-added in the manufacturing sector is exactly the same -- not to the second decimal but to the first decimal -- as the rate of growth of real GDP. So, we have maintained, over a longish period, essentially a constant share of manufacturing output in total output.

So, this leads to people to say, so what's the underlying pattern of declining employment? What's causing it? The first thing that comes to mind is that manufacturing is able to provide a roughly constant share of output with a smaller share of employment so that its productivity is growing faster than the rest of the economy. I'm going to say in a minute that's a little bit of a too-simple story, but certainly there's something in that notion. As I say, it goes across countries.

Now, the one striking thing in this table -- and, good, it's nice and big, I hope you can read it up there -- is that the computer industry, which includes not just computers but computer and related products, computer and electronic products -- so, it includes semiconductor and a lot of high-tech stuff -- is really a dramatic influence both of productivity in the manufacturing sector and of the growth in the output of the manufacturing sector.

So, if you look at manufacturing less computers or durable goods less computers, you'll find that, really, the growth rate of that part of manufacturing, the non-computer manufacturing -- these are, again, real numbers adjusted for inflation -- is much slower. So, what's happened in the computer industry -- its output has grown extremely rapidly. The value-added part is growing much more rapidly even than gross output, which is a little odd. There may be some concerns about the data there, that we may be understating the amount of inputs being used, particularly imported inputs. But I'm not going to go into the data discrepancy issue here. We talk about it in the paper that's there.

Basically, manufacturing -- the manufacture of computers in the United States, even though it's sort of a smaller industry over time, certainly in terms of the number of people -- it's still producing a lot of output. It's still got a huge rate of productivity growth. And it sort of drives the overall manufacturing numbers.

Now, there are some folks who look at this and say, well, we should take computers out and just look at non-computer manufacturing. I don't think we should do that. I mean, computers are one of the things that we do now, and I don't think we should leave that out. But it is important to at least keep in mind that manufacturing of things besides computers has had a declining share of total GDP. And that, of course, comes from a couple of reasons.

One, it may come from a sort of income price elasticity reason, particularly in income elasticity, and that means, to take the jargon away, that as the economy grows and gets richer, we tend to buy more services, more health care, more lawyers, more education; and a smaller fraction of the dollar goes to the actual manufactured goods. And, in fact, if we think of the manufactured goods that we buy, we actually buy a lot of service with them, you know, like I buy a car but then I spend lot of money having it serviced every 5000 miles or having it repaired. So, there are a lot of services that go with the manufacture of those goods, and that's become an increasing share of our output.

Now, the other reason why output growth has been slow has been because we run a big trade deficit. And of course this creates a very controversial issue. A lot of people want to blame trade for the decline in manufacturing employment. And there's some truth in that. We have been running big trade deficits, and they've gotten bigger over time, at least until -- I think the peak was 2007 of the trade deficit -- they've gotten bigger over time, and so we are in a sense losing output, losing jobs, if you want to put it that way, to foreign trade.

It's also the case -- and I think if you walked out on the street and asked people at random, what's the problem with U.S. manufacturing?, they'd probably say China. And, again, there's some truth in that. We have a very large trade deficit if you look from 2000 to 2011 here from 84 going to 319 billion, so our trade deficit with China makes up most of our total trade deficit in manufactured goods. Keep in mind, of course, that we have a deficit also in energy, at least for the time being. We have a surplus on services. But the manufacturing trade deficit is very concentrated in China.

In fact, if you look at the change in the trade deficit from 2005 to 2011, which is the right-hand column here, you can see that, really, we've been improving our trade position with everybody except China, except Asia.

One other point that we make in the paper that I want to stress is that China does take, maybe, a bit too much of the heat here. The reason is that China is really the focal point for a supply chain that is channeling goods from Asia through assembly in China. So, there's a lot of assembly that's done in China, and consequently the exports come from China. So, we say yes, the iPad is made in China. Well, it isn't really. It's assembled in China.

A lot of the high-value components come from Korea and Japan. Korea has really expanded its role in a lot of the high-tech stuff. If you look at other products, computers, we say all the laptops are made in

China. Well, again, no, that's not really true. They're assembled in China and the fraction of the value-added they make may be expanding over time. But most of the value-add comes from the chips and the stuff that goes into it. So, this is an Asian supply chain with some components coming from the U.S., many coming from Japan or other parts of Asia.

So, given that the deficit is so large with China, it seems like if we want to achieve a more balanced trade, then we're going to have to do something about exchange rate adjustment with respect to China. And the answer is we are. So, again, China takes a lot of heat.

The folks across the street at Peterson, where I was for many years, have been on a long crusade that China has to appreciate its currency. And I supported that. I think that's right. And we've seen that the Chinese exchange rate, real exchange rate, has gone up a lot. We've also seen that the U.S. real exchange rate has gone down, and that's one of the reasons we've been doing better since 2005, and hopefully, if that continues, it's a reason that we'll do better going forward.

I think the thing that we cannot really tolerate is that as the U.S. economy recovers, we start running these larger and larger trade deficits so that we're sort of fueling the whole economic recovery as we did during much of 2000. I think we need to go back to a period of more balanced growth where we have greater external balance, and that has to be achieved by adjustment, not just with China of course but with the whole sort of Asian supply chain.

And a lot of that is things that we have to do in the U.S. We have to get our capital saving rate up, because we have to --as the economy expands, I don't want to balance the budget tomorrow. It would be a disaster. But over the next several years, we have to make sure we have room for an expansion of manufacturing exports, and that mean we need to make room. We have to get our saving in line so that we can get the exchange rate and the trade balance in line.

This is a chart -- I worked some with the McKenzie Global Institute -- this is just an illustration to say that our sense -- and worked with quite a few of the folks in Silicon Valley and other innovation hubs -- is that we don't find it plausible that the sort of Tyler Cohen, Robert Gordon view is that there's no innovation taking place. That is not something that we find plausible or correct.

In the paper, I think I mention that rate of patenting has increased. Patents are not always a perfect measure of innovation, but I think they're, at least in this case, telling the right story, which is that there is a continuing strong flow of innovation in the U.S.

Now, some of these things -- you know, the 3-D printing that we talk about or the nanotechnology -- some of this stuff has taken longer than we might have hoped to come through, but I think it eventually will emerge. And the U.S. is generally in a strong position here with the caveat that even though our companies are very strong in the technology for the most part, we're not the only game in town obviously. But we are in a pretty strong position. But we don't necessarily manufacture the goods in the U.S., so that's a problem. So, we have the Apples of this world that do a lot of innovation but don't make much in the U.S.

But the innovation part of the story I think remains strong. I think there are some things that we can do to help that: supporting science and technology through federal programs, not cutting them as we are now doing here. But the basic, I think, view we have is that the U.S. remains a very innovative economy.

Another thing I wanted to mention -- and there have been some great studies, including one by PWC and stuff by IHS CERA that I've taken this chart and the next chart from, which is to say that we do seem to have a substantial opportunity in the emergence of new availability of energy. The gas is the most striking. And you can see from this -- this is talking about gas capacity -- it looks as if we will have gas in the $4-6 range indefinitely. I mean, presumably with inflation that will go up a little bit, but in that kind of $4-6 real value, which is substantially lower than any other country. Some of those may start fracking and doing those things as well. China certainly has the possibility of doing it, although they lack, I think, the technology and some of the policies to do it. But cheap gas is certainly something that is helping the U.S. economy overall.

There's a lot of investment to get the gas and the oil out, and that will help manufacturing, and then the cheap gas will help us on electricity. It will help us on transportation. They're beginning to think about liquefied natural gas for long-haul trucks and even for trains, freight trains. So, potentially, this is really quite a revolution in the way that our economy works.

We also have some improvement in the oil situation. There's a very wide variation in how much oil people think we're going to get out. Phil Velega, who is a friend of mine out in Colorado -- he thinks we're going to be producing 20 million barrels a day of oil over the next 10 or 15 years. That's sort of the top end of the scale, although a National Intelligence Council report did have that as one of the possibilities. And many others see more like 7 to 8 million barrels a day or 5 to 6.

But, certainly, this has been a turnaround. We are moving from a period -- and that's really in the blue bars there -- a declining production of traditional oil. We can now produce this shale oil and tight oil; and this is a little bit different, but basically it's new sources of oil, and we are seeing oil increasing. Unless we start hitting the 20 million barrels per day, it seems unlikely that this new U.S. production is going to have a major effect on world oil prices, because, you know, we're part of a global market. Demand is increasing. It's not clear how fast for other supplies, so we're still going to be subject to global oil prices. But the oil will be more secure. It will be basically -- certainly if you take North America as a whole, I think we will be energy self-sufficient, and that's a big lure. You are already seeing investments in petro chemicals, in plastics, and in energy-intensive manufactured products, which will help us.

Now, one caveat that I want to give, and this is one of those economist caveats that make other people's eyes glaze over, but if you tie the trade to the value of the dollar and if you tie the value of the dollar to saving in investment flows or capital inflows and outflows, then the benefits from this discovery of oil -- there is an offset in what it will do for manufacturing. We do now import a lot of energy. If we shift to being energy self-sufficient, that will change our balance of payments. It will change the value of the dollar.

If you go back and look at the Dutch Disease or the Resource Curse, you can find yourself in a situation where if you discover a lot of new energy, it pushes your exchange rate up, and actually your manufacturing sector does worse.

Now, I don't know how that's all going to play out. I don't know how much we're going to do to increase our national saving, which would help us a lot in terms of not needing the capital inflows and, hence, not having the valuation of the dollar. But, certainly, there is an offset. You can't just say, ah, energy cheap, manufacturing uses energy, manufacturing's going to export. There is that offset that's going to come from the exchange rate.

Now, Bill, who had read the paper that you have here, remarked that the policy recommendations don't seem to have much to do with the things that went before it, and I think in this presentation probably even more true, but let me try to at least make a token effort to fill that gap.

So, the first two points here are really sort of building on what I've described as the state of manufacturing. The disruption that has come to the labor market through the decline of manufacturing jobs I think most of you know about. That was a place where people who did not have college degrees and in some cases didn't have high school diplomas could go and get pretty good jobs and pretty good salaries and relatively good benefits and reach a kind of middle-class way of life within manufacturing. And that opportunity just has not disappeared but is much smaller. It's a much smaller part of total employment.

Now, a lot of people in manufacturing are getting older and they will retire, so it's not that there'll be no job opportunities, but unless something magical happens, it's not going to be an employer on the scale that it was in the '50s and '60s. Nevertheless, manufacturing is still very important. As we know, it's a big part of the economy. It's where a lot of R&D takes place, R&D that then feeds into products that are used in the rest of the economy.

So, it still remains a very important sector and one that I think we need to foster and that needs to flourish. And if it's correct, as I think it is, we need a more balanced growth path for our economy going forward, because the huge trade deficits didn't cause a financial crisis. But all this capital sloshing around the world I think did contribute to that, and I don't think we want to go down that road again. And I'm not sure we can. I'm not sure we can expect China and Japan and Korea to hold more and more and more and more and more U.S. Treasuries to finance a trade deficit. So, we need to expand manufacturing in order to reduce that trade deficit. We can't do it on services alone. Service exports are just not big enough.

Okay, so getting the macro right, I think I'm running over my time, so I'll go through this relatively quickly.

We do need to get the saving investment balanced, and I think over the long run that the best way to do that is to do something about the budget deficit, not tomorrow but over 10 years or so. I think that's going to mean more tax revenues. I don't think we can just do it on the spending side.

Now, what about corporate tax policy? Whenever there's a discussion -- I was in one of the discussions on manufacturing in the White House back when Larry was at NEC, and a lot of people in the room, who were a lot of manufacturing folks, said you've got to cut taxes on corporations because we're not competing with other countries. And Larry listened very patiently and then said, yes, but we need more revenue. So, there's a lot of resistance to the notion of dealing with this issue. Obviously, if you can do an efficiency-enhancing, revenue-neutral reform, I think you'd probably get that through.

I'm of the view -- and I want to make it clear here that I think we need to maybe raise taxes. I think we need to protect the poor and the elderly. But I think the fairness issue has to be subordinated to the competitiveness issue in terms of manufacturing. I don't think it's helpful to say we're going to whack the corporations, we're going to take more money away from them and end up driving them overseas or driving them to shift activities. That's just not something that I think in the end is helpful for workers or for the economy overall.

I'm not a tax expert, and I was reminded of that very forcibly last night at the dinner by a group of tax experts, so I'm going to leave any of the details here. But I think both in terms of taxing existing multinational corporations and in terms of how we tax small companies and startup companies, the emphasis has to be on getting incentives for growth and employment. The revenue part I think we have to get from taxing people more.

Thank you.

MR. GALE: All right, thank you, Martin, very much. I want to ask a couple of quick follow-up questions, and then we'll turn to the audience for Q&A.

Very interesting presentation. One of the things that caught my eye was the distinction between computers and the rest of manufacturing and how the computers seem to be sort of, like, all of the action or most of the action in productivity or value-added. And I'm wondering, is that a standard situation in manufacturing that there's sort of one leading edge and the rest of the sector is declining? I mean, given that production process has changed, technologies change, you know, there's a lot of innovation in the sector. Like, if we looked at the 1920s, say, would we find that, you know, machine tools were all the rage and other stuff was going down, and then if we looked in the 1950s would we find, say, that durable goods were all the rage and other stuff was going down, and now it's computers are all the rage and other stuff is going down? Is it normal to have one sector driving manufacturing growth like that and the rest of manufacturing, you know, the older technologies, kind of dying out, or are we in an exceptional situation with respect to computers?

MR. BAILY: I'm not a great economic historian, but I think this is an unusual situation. I would say that manufacturing productivity has been more broad based in the past, and so this is a surprising situation. I actually was surprised when we put these numbers together, because in work that I've done on manufacturing productivity and other industries, you can see there was a lot of change in the automobile industry, the whole introduction of lean manufacturing, a lot of innovation taking place in the components industry that raises the value-add of the cars so you have better quality cars. So, there a number of industries, you know, where you would expect to see more productivity than we've seen. I think it may be -- it would be worth -- in the paper, I think we do have some more disaggregated data, but it's worth sort of looking down within manufacturing and seeing if it's more industries that are going down and others going up.

I want to pick up a little on the manufacturing point you made, and maybe I'm straying slightly from answering your question, but we are in this odd situation, because the industry -- that we are very good at it, because after all American companies in the high-tech sector are very strong. They're not without competitors -- Apple and Samsung are slugging it out. But we are very strong. We have many of the leading and best companies in this area, but we are not generating employment, and we're not exporting from those industries. So, the industry that we're good at is the one that has probably globalized the most. And so -- and HP, which used to make in the United States, no longer does; Apple used to make in the United States, no longer does.

And so our industry of comparative advantage, if you like, is not one where we're actually doing all that much manufacturing. So, employment and the sort of share of output -- the reason output's going up so fast in the computer industry is because we have this quality adjustment. It's not because the number of boxes that we're making, so to speak, is going up; it's not -- and certainly the number of people doing the stuff.

So, we can certainly, I think, keep a lot of the R&D and the design, and the notion that you have to have the design located where the manufacturing is I think just isn't true anymore. Apple's an example where that just doesn't hold. So, we can keep a lot of those jobs, but the question is, are we going to keep more of the manufacturing jobs?

I talked to some folks from Finland recently, and they are in a somewhat similar situation. They took a big bet on phones. Now, the company, Nokia, of course has its own problem, but even before that, the thing that they were good at -- hopefully they'll remain recently good at -- is not something where they're going to be able to generate a lot of employment, because they are having to move that production offshore.

So, the computer story is a very distinctive part of what's here. If you can trust that -- and you can tell me to shut up, I've going on too long -- but if you can trust that with, say, Germany, which has a much larger share in employment and has sort of done a better job I think at hanging onto manufacturing, they have had a sort of different business model, which is that they make very unique products, whether it's a BMW or whether it's a machine tool or whatever it is, just a high-quality, different kind of product. And they make use of the skilled labor that comes up through their apprenticeship programs. And so they are more tied to their domestic production base, and they continue to run large trade surpluses, too large, by the way, for the stability of the E.U., but that's a different story. They run, still, large trade surpluses and have been able to maintain -- so, they have a different view.

Now, some of the folks here -- Caterpillar, a lot of skilled people, got the technology, keeps much of it in the United States. So, they're more like that German model. But other parts of U.S. manufacturing are more like computers, and they outsource a lot.

MR. GALE: Mm-hmm. All right, great. Let me just follow up with two quick questions and we'll get questions from the audience.

One is there are two sorts of justifications for more policy focused on manufacturing: One is what you might call the good jobs justification; the other is the externality argument, the agglomeration spillovers, and stuff like that. On the good jobs argument, it seemed to me what you were saying was we need more middle-class manufacturing jobs. In order to do that, we need to help manufacturing by raising national saving. In order to do that, we need to raise taxes on the middle class. So, the question is, is that worth it -- is that a good deal for the middle class, better jobs in manufacturing coupled with higher taxes?

MR. BAILY: You're too clever for your own good. (Laughter) I think, roughly, yes. (Laughter) I mean, the alternative, really, is that we continue to borrow heavily overseas. And I don't think that's the right thing to do. As a matter of fact, we've had a heck of a good deal borrowing overseas. We've borrowed at very low rates of interest, and so, you know, if you look back and say would we have done it differently, you could make arguments either way, that we've borrowed on very, very favorable terms. Even though we are the world's largest net debtor by a very large amount, we have a positive net return on capital so that we earn more on our amount of foreign-held capital than foreigners earn on the capital owned in the United States. And that's because a quite a bit of that consists of Treasuries paying at 1 percent or whatever, 2 percent.

So, yes, you're quite right, there is a dilemma. I think we are going to be sort of forced to deal with a saving issue and try to get to more balanced growth, even though you're also right that it does and will hurt the middle class. Can't escape that one.

MR. GALE: Okay, and my last question is, what do we know about what are called agglomeration spillovers in manufacturing or the actual externalities associated with manufacturing, particularly as a motive for, you know, policy -- either subsidies to manufacturing or other policies toward manufacturing?

MR. BAILY: There's no question that there are agglomeration effects. Michael Porter certainly pointed them out a long time ago. Paul Krugman has done so in his research on the economic geography and the impact of agglomeration effects. Do you take it into the policy area? In other words, is this something where you can create these hubs by policy? And there are a few examples where people have done it -- I think Research Triangle in North Carolina. I think the Koreans have done fairly well at creating a high-tech hub. There are also a number of examples where people have failed. Emulation technology corridor -- not clear that that's worked very well. The Japanese put a tremendous push behind catching up or coming up on the computer industry, wasted a lot of money that way. So, again, slightly oblique answer to your question.

But in a study that we did at the McKenzie Global Institute, we looked across the world and looked at all the high-tech industries around the world defined in some way. We did not find a single one that you couldn't look back and say it had some kind of assistance from the government somewhere along the line. The most successful ones were where the government was the purchaser. So, the U.S. Defense Department is the obvious place that started up a lot of those high-tech industries. In other cases, as in Korea, there was government funding that helped that industry go and created this technology cluster. But there were probably more failures than there were successes. So, you know, choose your poison -- whether you want to try to use that as a policy remedy.

MR. GALE: Okay, great. Let’s turn to questions from the audience. We’re running a couple minutes over the original session, because we started a little late.

Yes, okay. Yes. Sorry. There’s a microphone coming, and just please identify yourself and please be sure you have a question.

MR. BAILY: You’re an expert on manufacturing. I’m not sure I should take a question from you.

MR. GALE: Ha-ha-ha-ha.

MR. JENSON: Brad Jenson at Georgetown and the Peterson Institute.

Martin, you asserted at the end of your comments that services couldn’t add enough to export growth for attention, and I just wonder if I could challenge you on that. The service sector is quite large. A lot of services are tradable. When we look at impediments to services trade, particularly in order of magnitude larger than what we see in the manufacturing sector, services account for 30 percent of U.S. exports now. We run a trade surplus in services. To me, it looks like an area that we could exploit for a lot of export growth. You seem to minimize that potential. I was just wondering if you could explain that.

MR. BAILY: Well, I think that’s a good catch, and I would back off and say that the U.S. service sector has a comparative advantage. It's maintained a surplus even during periods when the U.S. dollar has been way overvalued. And so it's certainly something we should encourage, and to the extent that we can expand access in other countries to our service industries I think that's helpful.

We may also -- if the energy situation changes around, we may also find that at the end of the day we have a surplus in services; we have a trade balance in energy; and then we actually, even in the long run, have a modest trade deficit in manufacturing.

I think I do stick to my guns that if we want to -- I don't want to -- you know, I don't want to go back to 6 percent of GDP trade deficits, and I think that does mean that we need to expand manufactured exports. We are low if you look at other countries. We think of imports as being the problem, but your colleague across the street, my friend, Robert Lawrence, always point out that it's low exports that characterizes the U.S.

Eric Toder?

MR. TODER: Hi, you mentioned the very interesting data that the E.U. has the same ratio of value-added in manufacturing to GDP as the U.S.

MR. BAILY: Same share of employment, yes.

MR. TODER: Employment.

MR. BAILY: Same manufacturing value-added must be followed there.

MR. TODER: Right, but Germany was much higher than the U.S.

MR. BAILY: Yes.

MR. TODER: And of course the E.U. has a common currency. The U.S. internally has a common currency, so I was wondering if anybody had looked at different regions within the U.S., if some regions have much higher shares of manufacturing employment and value-added than others and if there is any correlation between the value-added of manufacturing and living standards in particular regions, and if there is, what that should tell us about policy if anything.

MR. BAILY: Well, Brad Jenson has done tremendous work on the relationship between manufacturing, and living standards in those areas where manufacturing investment comes in have tended to improve living standards. David Auteur at MIT has also looked at the other side of that of what happens when industries get competed away by Chinese imports and what that does to communities. So, that I think is fairly clear.

You know, I think it had to be true historically that the manufacturing regions of the Midwest particularly were probably sort of the Germany of the United States back at that period. I think manufacturing has become more disbursed, because a lot of manufacturing has moved to the south now. So, I don't know what the distribution is. A good question, and I don't have a direct answer.

MS. WERTHEIM: I'm Mitzi Wertheim with the Naval Post Graduate School, and I never studied economics so I apologize for my question.

MR. BAILY: Good for you.

MS. WERTHEIM: I'm trying to understand about savings, because we went through this long period of saying that we're not saving enough. And it's now my understanding that a lot of corporations are saving stuff and not putting it into the economy and creating new stuff. So, if you could explain to that me so I could understand it.

MR. BAILY: No, I can't. (Laughter) This is if you like the paradox of thrift that saving is good but not always, okay? I'll tell you a story. When I was working with Laura Tyson in the White House, I wrote a memo to President Clinton saying that if we were to balance the budget and increase national saving, that would have a major effect in reducing the trade deficit. Well, I went back a few years later as chairman of the Council, and he didn't tax me with that, although he should have, because we had balanced the budget and the trade deficit was even larger. So, there are a lot of -- you know, you have an identity, but there are a lot of pieces to that identity, and private saving had actually gone down by more than the improvement in the budget deficit. So, it is really a question of what we do with total saving. And as you say, right now business is saving a lot; households are not -- a little bit more than they were at some point but not that much.

I do think we have to get national saving up but not now, okay? So, right now we want more demands; we want people to spend; we want those companies to invest. That would be the ideal. I'd rather see an investment-led growth, and that's why I'm hopeful about the energy thing and whether that will stimulate investment-led growth.

As we get back to full employment, then I think we have to be more concerned about making sure that saving rises and that we do not rely as heavily on the inflow of foreign capital. So, it's a matter of timing I think is the answer.

MR. GALE: Okay, one last question.

MR. BAILY: I've run over my time here.

MR. GALE: Back over here.

MR. SIMMON: Yes, Scott Simmon with U.S. Steel.

I was intrigued by the first question that you were asked by the moderator, and you talked about perhaps a need to tax business more or there's anomaly where Germany perhaps has higher productivity and then the whole notion about computers leading the edge. And I just wonder if part of that -- or if you have ever examined whether regulatory costs going back in and the cost of refurbishing or bringing up to current standards or future standards of existing plant and equipment is one of the reasons we don't have the productivity gains in other aspects of manufacturing outside of computing.

MR. BAILY: Conventionally measured productivity and German manufacturing is not higher than in the U.S. and has --actually, their ability to outcompete the rest of Europe really has come from wage restraint more than from productivity increase. I said "conventionally measured," because I think when we do those measures, we don't always capture the uniqueness of a lot of the products so that if you produce capital goods that no one else produces, then you can still export them. So, their competitiveness comes, I think, as much from the uniqueness of the products as it does from high productivity. In fact, you know, I think the Japanese and the U.S. actually are often better at some of the mass production high-productivity stuff.

I think I said that I thought corporate tax revenues should not go up and maybe should go down. I think we need to do something about the corporate tax rate. That seems to be a significant disincentive that's pushing companies to relocate activities. Of course, there's the issue of extraterritorial. But, you know, we've got a group of experts here that are going to talk about that stuff. I don't think I want to go into the details. But I think whatever we can work out that makes it attractive, that's what we have to do at the end of the day. You have to make it attractive to manufacture in the United States. And you can have the best R&D and all that other stuff. From a tax point of view, from a skill point of view, from an infrastructure point of view, that has to be in shape to make it attractive to actually produce the stuff in the U.S. and hopefully export it as well, and taxes are part of that story.

MR. GALE: All right. Well, thank you, Martin, for an excellent presentation and discussion. The last answer was the perfect segue into the next session, which will just start in a second on the impact of taxation on the location of manufacturing activities.

MR. DESAI: Thanks very much. It's a great pleasure to be here. My name is Mihir Desai. I'll be your guide for the next hour. We have a wonderful panel with two wonderful panelists -- Paul Oosterhuis and Fritz Foley. Before I introduce them, I just want to very quickly say what the premise of the panel is.

The premise of the panel is really three fold. The first premise is if you want to understand manufacturing and tax policy, intellectual property is a big piece of that puzzle. So that's a way of saying where intellectual property is located, how it's treated ends up mattering where manufacturing decisions are made. So I think that's the first premise of this, you know, generally.

The second premise of the panel is that if we want to understand taxation and manufacturing, we should think about multinational firms seriously. We should understand what their locational decisions are. We should understand how they treat their value chain around the world so that any tax policy that we do actually incorporates their responses on those various margins.

And then the third premise, of course, of this is that tax policy is not nearly so simply when one talks about intellectual property and multinational firms, that there are a variety of intricate and interrelationships in the tax code which make simple comparisons of statutory rates or simple comparisons of a manufacturing carve-out insufficient to understand these things.

So these three premises are what we're going to have and we have two wonderful speakers. So just very quickly, because I want to make sure to give them lots of time, Paul Oosterhuis will speak first. Paul runs the regulatory practice at Skadden, Arps and it's really hard to think of anybody better to think about taxation and the location of IP and manufacturing activities and he's got some wonderful slides to walk us through.

And then we have Fritz Foley who is an economist and a colleague at Harvard and it's really hard to think of anyone better to talk about (a) multinational firms -- the way they think about locational decisions generally, (b) intellectual property within multinational firms, and, of course, finally (c) how those tax rules affect all those things.

So I'm going to get out of the way. Paul is going to go first.

Fritz will go after that. And then we'll open it up for your questions.

MR. OOSTERHUIS: Thank you, Mihir. We'll let the slides come down. Let me get a glass of water. What we thought we'd start out doing is giving you a primer on how tax policy influences manufacturing decisions by multinational companies. Thank you. And what I'm going to describe are rules that have been put in place over time -- not with the singular focus of their impact on manufacturing location decisions, but with other focuses, but have had the result of making it pretty clear that the tax incentives are indeed to locate manufacturing off-shore or outside of the United States, rather than here for export. And so what we're largely talking about is manufacturing for foreign markets, not manufacturing for the U.S. market and as world markets have grown, obviously, U.S. multinationals have had to focus on where they're going to do their manufacturing for those markets.

We're focusing on the sector of manufacturing that has a high intellectual property component. That includes computers and other electronic products that Martin talked about. It obviously includes pharma, biotech, medical equipment and other sectors that have high intellectual property components as well.

The key from a multinational perspective, you know, tax is one of the biggest expenses you have on your profit and loss statement, if not the biggest expense. And it's viewed as an overall expense, not differentially viewed as to which government you're paying your taxes to. And so the key when you're thinking about selling into foreign markets is (a) how do you reduce the foreign taxes that you're inevitably going to pay because you're selling into foreign markets, and (b) how do you do that in a way that doesn't create an offsetting and maybe even larger U.S. tax. And, as we say, the conclusion we will come to is that, in most cases, you can achieve those goals by manufacturing outside the United States more readily than if you manufacture inside the United States. And to understand why this is, it seemed to us the best way to develop that understanding is to go through kind of common structures that multinationals now use and have really developed over the last 20 or so years to organize their operations for selling into foreign markets.

A little history -- after the '86 Act, the U.S. tax rate went down to 34 and then 35 percent on corporations. And most foreign rates were in the 45 to 50 percent range. So tax planning was radically different back in 1987 and well into the '90s than it has been since then.

There were really two things that happened throughout the '90s. One was that gradually foreign tax rates went down. We're going to be using examples of a company that has manufacturing in Germany, where the tax rate is now 29 percent roughly, depending on which municipality you're paying part of your tax to. And Italy, where the tax rate is 27 and a half percent compared to our 35 percent. The U.K. is now down at 24, 23 percent coming down to 21 percent. France is an outlier which still has tax rates more comparable to ours. But even the Japanese have tax rates now that are coming down below 30 percent. So there's been a fundamental change in global taxation of multinational income that has driven the thinking. And that really started in the mid '90s.

The second thing that really influenced all this is what we tax practitioners call check-the-box. And that was a regulation that was adopted at the end of 1996 by the Treasury Department that allows taxpayers to elect as to whether an entity that they set up should be treated as a corporation or treated as transparent -- treated as a partnership in effect, or what we call a disregarded entity. And, as you'll see as we go through the slides, that has given considerable flexibility in tax planning for U.S. multinationals to achieve some of these goals.

So let's start with the basics. And this is kind of the common -- what in the parlance we call a principle structure of tax planning for foreign operations. And the concept is that you have one entity that's in a tax favorable jurisdiction. We picked Ireland, but it could have been Luxembourg, could be Switzerland, could be Singapore, could be Hong Kong -- could be a number of places. And you have that entity take the risk of the business and therefore earn the residual profits.

When you're dealing with transactions among affiliated entities, we all have to deal with arm's length transfer pricing. And under those rules, risk is very important. Risk and function are the two things that determine the allocation of income to various entities under transfer pricing. And it's perfectly legitimate for a particular affiliate to take very few risks to have a steady stream of income and to, therefore, earn a fairly low return. If you do that with your high tax affiliates, and you then have the residual income be earned by a low tax affiliate, if you're a successful business, then that residual profit will drop into a relatively tax-favorable jurisdiction.

Now, in the -- when we're advising clients on these things, we always talk about the potential for getting Xeroxed. And that's a term in the industry because back in the '90s, Xerox had this strategy with Ireland and they were losing money and their effective tax rate bounced way up. And the reason why it did was they had economic losses, but they were only deducting them against the Irish tax rate, not against the U.S. tax rate, and so they suffered a detriment.

So that's the reality of these types of structures. And we show it here -- just to give you the specifics. The Irish would be the entrepreneur. It would hire its affiliated -- or it could be an unaffiliated, but typically an affiliated contract manufacturer. We put it in Germany and give the German entity a fixed return -- a take or pay type contract so that no matter what the volume of business is and no matter what the profit is on the selling of the products, the German entity would earn a good return on its investment. And then sell into Italy, where you'd have what we call a low risk distributor operation, which would again get an essentially a guaranteed positive return on its cost, but not a lot more than that with the residual profit being thrown back to Ireland.

Now Ireland has a 12 and a half percent rate, which is a lot lower than the 27 and a half percent in Italy and the 29 percent in Germany. There are techniques you can use, and there's been some press about that, to get the rate down even further than that in Ireland, but, for our purposes, we're just trying to show the basic structure.

Now the question is how do you move the intellectual property into Ireland if its origin is the United States in order to maximize the amount of profits you can get there and how is the U.S. being compensated for that part of it? Because with most of these companies, there are really two sources of their real profit to the extent they are successful. One is the technology that largely does originate in the United States. But the second is their market presence if you will. You can call it an installed base. You can call it their brand awareness with customers. But whether you're a computer company like an HP or an IBM or you're an Apple or you're more of a service company like Google or even Amazon, a lot of what the value is is in the customer side of the business, not just in the technology side of the business. And that is more inherently in Europe if that's the market you're talking about. That's not something that's necessarily shipped from the United States. Whereas the technology side is a side where the U.S. has a role in the development and, obviously, asks for a return on that.

So there are two ways of transferring the intellectual property in broad brush. The first is what we call cost sharing. Cost sharing is a transfer pricing mechanism that's been in our law going back to the 1960's and it essentially treats your foreign affiliate as a joint venture partner with the U.S. company and says we will jointly fund R&D based on our relative expectations of profit over time and we'll split that cost -- no mark up on it. We'll split that cost without regard to where it's performed. So the R&D could be 100 percent performed in the United States and if you have a cost sharing agreement and you project say 60 percent of your revenues and maybe 60 percent of your operating margin to be outside of the United States, then that percentage would be funded by, in this case, the Irish entrepreneur and the remainder would be funded by the U.S. And that percentage would adjust over time as your expectations adjust as to what portion of your revenues and things like operating margin you intend to get outside of the -- you expect to get outside of the United States.

So it's a model that basically says R&D is an input and as long as the foreign affiliate is bearing its fair share of the cost of that input, then it can reap the rewards of it. Some would say it's a very generous model. I think the key is how you switch to that model because there weren't that many companies that used it say in the 1960s and 1970s and '80s. But as we got into the '90s, more and more companies did switch to this kind of model -- particularly in the technology sector. And today I would say it's the dominant model for technology companies.

But when you switch to it because the foreign affiliate is now starting to bear this cost but is also getting the advantage of intangibles that were funded prior to that time, you have to do what we call a buy-in payment. And a buy-in payment is essentially a royalty that you pay for the pre-cost sharing intangibles. That can temporarily be a negative for the Irish affiliate because you're paying both the royalty on old IP and you're paying the cost of newly developed IP in the form of the cost sharing payment itself. But once you get through that transition, the system will work that you just bear your fair share of the cost. So that's one model.

The second model is a licensing model. This tends to be used more in the pharmaceutical industry for a variety of reasons where you license individual products or a set of products -- maybe a product line -- to the Irish affiliate at a particular point in time when the products are close to coming on the market. The Irish affiliate would then pick up ongoing R&D costs after that in most cases, but the royalty would essentially split some of the profit between the U.S. company and leaving some profit for the Irish company. If you're in the pharmaceutical industry and you have this model, most of the major pharmaceutical companies have a lot of in-licenses of technology that they're acquiring from other, for example, start-up biotech companies from Japanese companies that don't have the big presence, other companies that don't have the global reach that they have. And so they have databases of third-party in-licenses and what the terms were in those licenses that are actual third-party transactions and how the economics were split between the licensor and licensee based on projections. And so you use those databases to determine the licenses under these agreements.

Now that means that the U.S. is being -- is, in some sense, being well compensated for the technology that's being transferred because you are using real transactions as your models. That said, you could argue there's a significant difference between -- just to pick an example, Warner-Lambert and then Pfizer licensing Lipitor to its Irish affiliate, which is where Lipitor was made and a third-party drug that maybe has a, you know, projected market of 500 million in revenues a year instead of five or 10 billion in revenues a year. But in transfer pricing, that is the world we live in.

So those are the two models by which you transfer IP to the entrepreneur and try to set yourself up to maximize, if your business is successful, the income that's in a relatively favorable tax jurisdiction.

Now the question is why does U.S. law encourage you, if not force you, into that kind of a structure rather than exporting from the U.S. in order to reduce this huge tax expense that you have around the world? Well, if you manufacture in the U.S. for export, you're obviously subject to tax at our normal 35 percent rate. We did try -- starting in the late '60s -- we did try different incentives for exports. We went through three iterations of the -- DISC, FSC and then ETI -- and they were all shot down by the WTO. So, I think we have learned that while you can encourage -- come up with a policy that explicitly encourages exports and have it last for quite a while before it gets shot down, nonetheless, that will likely happen. And that's becoming very relevant in the debate we're having now on international tax reform because encouraging exports is back on the table and seeing if we can do it in a way that doesn't create these same WTO problems is an important aspect of it.

You can reduce your effective tax rate, of course, through accelerated depreciation, which you get for a U.S. plant. You don't get for a foreign plant -- particularly even if you were to have the income be subject to U.S. tax. We have the Section 199 deduction that is a small reduction in your effective tax rate. And, of course, you can use interest deductions from third-party financing.

It used to be that a peculiar provision from the '86 Act really helped exporters. And that was that we treat half of your export income as being, what we call, foreign source income and therefore eligible to be sheltered by foreign tax credits. That was left in the law after the ’86 Act even though we knew the U.S. rate was going to be a lot lower than foreign rates and companies were going to have a lot of excess credits. It was left as an implicit export incentive which went away largely through the ‘90s as foreign rates came down and the U.S. rates stayed high. So the benefit to exporters of having this what we call cross-crediting provision has dramatically changed since the mid ‘90s, but was a very important implicit incentive in the late ‘80s and early ‘90s.

So for high value IP-laden products, exporting is pretty expensive. You have a high ratio of income, high operating margins for your revenues and depreciation doesn’t mean very much in those industries. I give the example of pharma products where cost of goods sold is about five percent of revenues and operating margins can be 30 to 40 percent of revenues. So things like depreciation -- and also those companies aren’t big borrowers, so interest deductions aren’t that important to them.

So let’s compare if you want to use the off-shore IP structure -- how it works if you have your factory abroad compared to if you have your factory in the U.S. in more detail.

The first example is when you have your entrepreneur have its own factory. And most pharma companies are set up this way. You’ll see major pharma facilities in Ireland, in Singapore, in Puerto Rico -- not just of U.S companies, but of all the global pharma companies. Similarly, if you're looking at the high tech companies, while you see a lot in China no question about that. You also see a lot in Singapore. Martin was mentioning Hewlett-Packard. For a long time, they were the largest private manufacturing employer in Singapore. And you see a lot in Ireland if you look through the lists of companies that have major facilities. This is the simplest way to set it up to actually have the factory in the low-tax country and many companies have done that to the extent they can. But you don't have to do it that way. You can use, as we alluded to before, contract manufacturing in another country and still be able to get all but a modest amount of income into your low tax affiliate. And there's really three different techniques to do that.

The first one we show is the royalty model where we have a German manufacturer and it's licensed by the Irish company. You try to make that license obviously generate as much of a royalty as the Germans will let you generate. And because of rules that were enacted in 2004 that exempted related party royalties from one CFC to another CFC from U.S. Subpart F taxation, this model allows the Irish entrepreneur to earn its royalty income without an overlay of U.S. tax and, in most cases, the Irish would allow its 12 and a half percent tax to apply to it.

This model is not used that much. And, by the way, before 2004, you could do it. It really came into effect with check-the-box, because if you check-the-box on the German manufacturing company and on the Irish entrepreneur, so they were disregarded entities, then for U.S. tax purposes, the royalty goes away and so, therefore, there was no subpart F income. And, in fact, that's the genesis of the rule in the 2004 Act that allowed you to make that payment even it's regarded and not having to be subject to subpart F, because it was just allowing you not to have to check-the-box in order to get that result.

This model is not favored so much because royalties from a local tax point of view are sticky. I mean you usually end up doing royalties not as a percentage of profit. You end up doing them as a percentage of revenues. And so as the business grows and the profits grow and your operating margins grow, the income that gets shifted to Ireland, it gets disproportionately less -- or proportionately less. And so that model isn't favored as much as a true contract manufacturing model where, again, you have a take or pay contract with the German company and you guarantee its returns no matter what. Which means, at arm's length, it would get a return that would approximate a cost of capital or even a cost of debt capital-type return on its assets. And the Germans would have a hard time battling with that given the nature of the contract.

For there not to be an overlay of U.S. tax on that kind of income earned by Ireland, Ireland has to be treated as a manufacturer because we give -- we basically don't tax under Subpart F manufacturing income. We do tax selling income in certain circumstances where it's separate from manufacturing income. And under regulations that were put in place several years ago, if the Irish affiliate makes a substantial contribution to the manufacturing income that's earned through the German manufacturer, it could keep that income in Ireland -- we need to move onto the next slide -- and whereas if it didn't substantially contribute, then we would pick it up under Subpart F.

So that's what most companies do. They use this model rather than the royalty model and we show here the lists of the kinds of things you have to do in Ireland to manage the contract manufacturing that's going on in Germany. The key is undertaking these activities from Ireland, not actually having people from the Irish company that go into Germany, because if they start going into Germany, then Germany's going to treat you as having a presence there and they'll tax you. So you have to thread the needle a little bit.

Now if you did -- well, let me give one more model.

The other model that you could use if substantial contribution is a problem, is what we call the same-country exception. We have an interesting exception the manufacturing rule for Subpart F that if the CFC is manufacturing or if the goods are manufactured in the CFC's country of incorporation, then even if it's being done by a separate affiliate, then the selling affiliate you are okay. You don't get picked up by Subpart F. And here's where check-the-box really helps because we could set up a German pass-through entity -- a partnership from a German perspective as the parent, check-the-box on it to be treated as a corp, and then have the Irish manufacturer be a disregarded entity of it so that from a U.S. point of view, the manufacturing is being -- the principal is a German entity. Even though from a legal point of view, it's an Irish entity. From a U.S. tax point of view, it's a German entity.

This is a structure that's used most frequently in China because China is very strict on your contract manufacturer and what work your Irish entrepreneur, if you will, could do with respect to a Chinese manufacturer before it starts attracting Chinese tax to the Irish manufacturer. So it's very hard in many cases to meet the substantial contribution requirements with respect to Chinese manufacturing. And so what you do is you set up this Chinese pass-through entity. It's called a China Business Trust. And you have that be a reverse hybrid on top of the whole structure. And that allows you to most frequently get your IP profit off-shore.

So why don't people do this with the United States? Why don't people set up these structures with a U.S. contract manufacturing company and similarly ship the income off-shore? It's really practical reasons. Once in awhile people do it, but I think the tax folks in companies really don't want to do it because of the risks. And so as a practical matter, very few companies in my experience actually undertake it.

The first risk is that the only way you can make it work is to meet the substantial contribution test for contract manufacturing. The same-country exception that we showed on the earlier slide -- if you had a U.S. entity on top, you would be taxed. So that just wouldn't work. And, similarly, going back to the royalty model, if you had a license to a U.S. manufacturing entity, that would always be picked up in subpart F income. You can't check-the-box to get rid of it and there's no 954(c)(6) exception for royalties that are paid by the United States.

So you just can't do any of those models with the U.S. You have to run through the substantial contribution rules. And when you think about it, if you're a U.S. parent company and you have a factory in the U.S. and you're going to manage that factory from Ireland, it gets a little tenuous, right? Because your key manufacturing people are likely to be U.S. people. Their natural home is likely to be in the U.S. and you're going to tell them you're going to move to Ireland and you're going to manage it from Ireland and you're not going to come back here very often to supervise that plant. Just as a practical human matter, that's a very difficult thing to do. And so the tax people get very nervous as to whether the facts on the ground will really support your case.

And the second thing is that it's the area where the service is most active. Not surprisingly because when the service sees that the manufacturing is done here, when they see that the R&D is done here, they say wait a minute, why isn't the income here, right? That's just kind of a common sense approach. And so their audits tend to be a lot more intensive of whether you meet the substantial contribution test if you're manufacturing is here than if it's just between Germany and Ireland. And there's a practical limitation. It's a lot easier for them to interview U.S. executives than it is to go interview executives who are in Ireland. The IRS budget is not accommodating for their trips to Ireland.

So for the reasons of the service review, both of transfer pricing and whether you meet substantial contribution and just the facts on the ground, very few companies try to do contract manufacturing in the U.S. And when you put all those facts together, that's what gives a real incentive to move your manufacturing off-shore or to expand it if that's where you are.

Now, how do we fix this? There's a couple of ways you could go to try to fix it. One, obviously if we repealed deferral and currently taxed all of the CFCs, that would fix it. No question about it. I think most people believe that's throwing the baby out with the bath water because we would be subjecting our multinationals to a global 35 percent rate, when in fact the rates in so many foreign countries are much lower than that. And given the tax is the biggest or one of the biggest expenses of any global operation, that's just too big of a competitive disadvantage to make work. So we have to come up with something that is much short of that but that allows more of a neutral decision making on plant location. And there -- I think there can be some tweaks, if you will, to the way the rules work that would be revenue-losing tweaks admittedly because it would be more on the carrot side than on the stick side of eliminating deferral. But by doing that, I think you could make the rules much more neutral for plant location decision. And that's by narrowing Subpart F with respect to contract manufacturing.

If you would allow somebody to contract manufacture in the United States and have their IP for foreign markets off-shore say through cost sharing, then you could largely neutralize the plant decision. Now that is not a big change in the law. I don't even know if that would cost a huge amount of revenue. It's very hard to know how they would score it. But if you just got rid of the Subpart F sales provision that says you have to be a manufacturer in order to defer your income or to exempt it if that's where we are, that would be a big change.

The second thing we could so is we could say that royalties paid by the U.S. to its foreign affiliate -- with respect to foreign sales. Again, we're not talking about sales back to the United States. We're talking about sales into foreign markets. That that royalty could be exempt from Subpart F just as royalties from one CFC to another CFC. I think that would be useful. I don't think that's nearly as important as making the rules clear that you can do contract manufacturing in the United States without triggering a Subpart F tax and without worrying about whether there is a presence for the foreign principal in the United States with respect to that manufacturing.

So, hopefully, in the debate that we have on international tax reform, if we get uncomfortable with some of the more explicit incentives for exports that kicking around like in the Camp Bill Option C, because of WTO concerns, we could at least think about some of these narrowings of subpart F that could allow plant decisions to be less biased toward foreign manufacturing from a tax perspective.

MR. FOLEY: Alright. Good morning and thanks a lot for the opportunity to participate on this panel on the impact of taxation on the location of manufacturing activities. I'm Fritz Foley and what I'm going to do is think about some of these issues from the perspective of U.S. multinational firms. And I think that they provide a powerful perspective because these are firms that are making very explicit decisions about where to locate productive activity and thinking hard about taxes when they make these choices.

So what I'm going to talk about -- I am going to first begin by showing some basic patterns in manufacturing activities of multinationals and comparing this to some of the trends that have been discussed. One of the things that I want to come of that discussion is a sense that the choices that multinationals are making with respect to manufacturing are reflecting some more global trends that are going on in manufacturing. And while some of their choices do seem to reflect tax considerations, there's a lot more at play there.

Then I'm going to turn and talk about some of the theoretical and empirical work that's been done on how multinationals make production location decisions and talk a little bit about the extent to which taxes appear to be important in that literature. Because they do play a role, but they are certainly not the only thing that matters. And then I'm going to come back and think about Paul's discussion and provide some evidence that the factors that he has described are, in fact, really quite important empirically.

So let me begin by just showing some data. And I tried to -- at some sense, tried to make the most alarming picture that I could with data on U.S. multinational firms. And these lines are showing shares of employment compensation. The top blue line is constructed if we sort of think about all activity that U.S. multinational parents engage in and say what share of that is in manufacturing. And what the line shows is that that share has fallen quite dramatically since the 1980s from more than 60 percent to now less than 40 percent.

The red line asks okay, if we look at all of the manufacturing activity that U.S. multinationals perform all around the world, how much of that happens abroad? And we see that that increases pretty dramatically from around 10 percent to around 25 percent. And, you know, if you sort of show a chart like this in a conference about tax issues, it's sort of easy to begin thinking wow, you know, taxes matter a lot and it must be explaining a lot of what's going on here. But I want to point out that the trends here are reflecting more general trends in global manufacturing. So if we look at the manufacturing share of GDP for the U.S. -- and this looks different than the numbers that Martin had showed us earlier. I'm not exactly sure why that is. These data are from the U.N. His are from BEA.

But this shows a decline in the extent to which manufacturing share in GDP for the U.S -- from about 10 percent to around 12 percent. I'm sorry, from 20 percent to around 12 percent. And I think one of the points that he mentioned, but I think is important to see, is that this decline is one that is not specific to the U.S., right? So we have a pretty significant decline in manufacturing share of GDP -- not just in the U.S., but also in the U.K. and France, which are the lines that surround the U.S. And even in Germany and Japan, which have higher shares of manufacturing as a share of GDP, but still the same trend.

And you even see declines in many emerging markets. So, you know, Brazil is quite striking. It is the red line here. But there have been declines even in China, again from higher levels. Declines in India. Mexico has remained relatively stable.

So at one level, what we have going on with U.S. multinationals is reflecting sort of some of these global trends that are going on more generally in manufacturing. And so I thought it was useful to revisit that U.S. multinational data and to throw a couple more lines on the shares that I started with. What I've done -- the sort of purple line up top is constructed to sort of take all activity that affiliates conduct and ask what share of that is in manufacturing. We see that it falls a lot -- sort of the same way that the parent shares fall. So U.S. manufacturing abroad as a share of total activity abroad is also declining.

And then in the bottom here, I just look at the sort of at share of aggregate activity performed by multinationals that happens abroad. And it tracks that red line that we started with quite closely. And so what this is telling us is that, you know, we're living in a world where U.S. multinationals are doing more stuff abroad, but the sort of patterns with respect to the extent to which they're engaged in manufacturing are similar domestically and abroad.

So the basic facts I want to sort of take away from this is that these changes in manufacturing activities that U.S. multinationals have been experiencing reflect more general changes in manufacturing activities. So the manufacturing share falls for both parents and affiliates.

That share has declined in many countries and it reflects productivity gains and relative price changes as much as anything else.

We also do see that there is a larger share of U.S. multinational manufacturing activity that is going on abroad. It is true that the U.S. share of global manufacturing has fallen. But what this is reflecting is there are two forces. One, a slightly smaller decline in the share of manufacturing activity for affiliates relative to parents, but really a bigger trend which is just a large increase in the extent to which U.S. multinationals are doing things abroad.

And so this sort of brought me back to sort of like, okay, well what we can conclude about U.S. tax policy given these trends -- the sort of subject of today -- and I don't think U.S. policy can easily explain this -- our global decline in manufacturing that we see in many countries. But it certainly can plausibly contribute to the general increase in the foreign activities of U.S. multinationals. So this might be one of the reasons we are seeing firms do more and more stuff abroad relative to in the U.S. But that wouldn't necessarily be specifically to manufacturing. That's just a general fact. And I'll return to this in my sort of concluding thoughts and thinking about sort of why are we so focused on manufacturing if it appears that U.S. tax policy could have similar effects not just in manufacturing, but services which has been discussed in other sectors.

Okay, so let me back up and say a little bit about the work that has been done by academics trying to understand the location decisions of multinational firms. And there's really kind of two frameworks people have used that are related. One of them is called the proximity-concentration hypothesis. The idea that this is based on is that the firms are trying to serve some foreign demand and they can do that either by exporting or by producing abroad. And you're going to produce abroad when shipping costs and tariffs are high and will be more likely to produce domestically if there are large economies of scale and it just makes more sense to have one big plant say in the U.S. and export. The sort of types that investment that this framework envisions are sort of horizontal type investments, where firms are doing similar things abroad to what they were doing in the U.S.

An alternative perspective on this is one based on the idea of vertical expansion. And here the idea is that firms are locating different types of productive activities in different places -- largely in response to differences in cost, right? So wages are emphasized and taxes really don't receive much play in this literature. And the idea is that you're going to do -- if you need low cost labor to do something, you're going to do that where there's an abundance of low cost labor.

And there's mixed empirical evidence for the kind of idea of vertical foreign direct investment. So we see most U.S. affiliate activity is based in developed countries like Germany, Japan, U.K. Very little affiliate output is, in fact, shipped back to the U.S. But there is evidence that, for example, less skill-intensive work does get done in places where there's an abundance of unskilled workers.

One general concern with respect to the vertical expansion literature is we don't really have great data on arm's length contractual economic exchanges. And so it's just really hard to see the extent to which firms are moving certain parts of production processes to places on a contractual basis.

I did want to mention the proximity-concentration hypothesis does receive pretty strong empirical support. Neither of these frameworks really say much about taxes. In fact, sort of tax variables end of coming in in an unexpected way in empirical tests of the proximity-concentration hypothesis. Meaning that, you know, in some of these regressions you see that it appears that U.S. firms are more likely to export as opposed to locally serve low tax jurisdictions.

There is alternative evidence in the vertical expansion literature that is, I think, kind of more consistent with work that has been done on taxes and investment more generally in the field of foreign direct investment. In that work, we both cross sectional as well as time series evidence that taxes do matter and that foreign direct investment levels are negatively associated with local tax rates and the estimates are pretty sizable. So common estimate is an elasticity of point six, meaning that if tax rates are 10 percent higher, then multinational firms are going to locate six percent lower assets in those types of jurisdictions.

One of the points that Paul made, and I wanted to show graphically, is what's been happening with respect to foreign tax rates and U.S. tax rates because I think that those patterns could help us understand some of those general trends that I started with which were indicating sort of a shift of the extent to which multinationals were expanding abroad relative to at home.

And so this chart here shows effective tax rates -- foreign effective tax rates in blue and U.S. effective tax rates in red. There are some issues with exactly, you know, how you should compute this. I've computed this using the data that U.S. multinationals report. There are some double counting issues in those data. But simply taking the net income they report, the income tax payments that they report and computed some rates off of that and what you see is that the foreign effective tax rates fall very considerably and in the kind of mid '90s, as Paul was describing, become lower than U.S. effective rates which have remained relatively high. So this would certainly create some incentives that could generate some of the initial patterns that we had seen with respect to the extent to which firms are doing stuff abroad as opposed to domestically.

Okay. So now let me turn to Paul's presentation, right? So I think the, sort of, initial points about taxes I think apply generally to manufacturing, but other sectors. But Paul's presentation really opened my eyes up to some very specific mechanisms that would be likely to affect manufacturing. And I was trying to think about that types of empirical evidence there are for the types of practices that he discussed. And so as he explained to you as the tax incentives to move IP abroad have strengthened over time -- over the last three decades let's say, in part because of these differential changes in rates that I showed and in part because of this introduction of this thing called check-the-box meaning that sort of after 1997, that the differences in rates are going to be in some sense supercharged with respect to the incentives they create to move IP abroad.

And so one prediction is that firms should shift a lot of IP abroad over time and firms, therefore -- multinational firms should be doing more R&D abroad, should be more likely to engage in these cost sharing agreements that Paul discussed and we should see more within firm royalty payments that are flowing to affiliates in low tax jurisdictions.

So we can look for some data on this and here again, I'm looking at the multinational data -- U.S. multinational -- where they conduct R&D. And the blue line is showing the extent to which they conduct R&D or perform R&D in the U.S. and we do see that that declines over time.

The red line is showing the R&D that is performed by the parent for others. So and from others, I've taken out the Federal Government, so it's not that. It's really largely for other foreign affiliates. And that has increased.

So we have some pretty good evidence that IP is being shifted out of the U.S. over this period. And the royalty payments are also consistent with that. So the blue line shows affiliate royalty payments to the parent, right? And we would expect those to be pretty high. You know, historically parents have developed most of the intellectual property that U.S. multinational firms use. Affiliates that are using that IP are going to pay a royalty back to the parent. So that line is high and growing.

What was very striking to me about these data is the red line, which is the extent to which affiliates are paying royalties to other affiliates. And this increases very dramatically, especially in the last year for which data are available in 2009. And it's also I think very striking to look at where those royalty payments go. So the affiliate host countries with the largest aggregate receipts in 2009 are Ireland, Bermuda, Luxembourg, U.K and the Netherlands. These places seem to have something in common. I'll let you try to guess what that is. I think it's also noteworthy that these numbers are pretty sizable. So, in 2009, we have 50 billion in intra-firm royalty payments. I tried to think about what number one would want to scale that relative to and one number that I would argue is worth thinking about is a parent net income number, which in some sense tells you the profits or rents that are earned by the parent which will include investment income that the parent earns in its subsidiaries. And that numbers was about 620 billion in 2009. So 50 billion is a sizable number relative to that in my view.

Okay, but what about the effects of where production takes place, right? So, you know, kind of we see IP shift, but about production? And here I think we can borrow from some of the types of variables that have been studied in this prior literature, in the proximity-concentration hypothesis literature and elsewhere. And sort of first, we can think about U.S. exports versus affiliate sales, alright?

So if U.S. multinationals are serving some foreign demand and they are increasingly shifting IP and real manufacturing activity abroad, then one would expect to see U.S. exports as a share of U.S. exports plus affiliates sales fall. And by exports here I'm thinking about not exports in general, but exports from the U.S. parent itself. So these firms within firms, we're seeing a shift to serve foreign markets from foreign production as opposed to domestic production.

And I think Paul's -- Paul's practices I'll call them -- would predict that these changes would be especially noticeable in IP-intensive sectors. Alright? So we can look at U.S. exports.

We can also look at U.S. imports and think about how consumers in the U.S. market are served and look at U.S. imports as a share of U.S. imports plus parent sales to the U.S. And, here again, when I'm thinking about imports, I'm thinking about the parents being the ones that are doing the importing as opposed to general imports. And that should increase over time, right? So if we're doing -- if we're shifting production abroad, we're going to be bringing more stuff into the U.S. to serve U.S. consumers and that change should be especially prevalent in IP-intensive sectors.

So let's have a look at the data here. These are parent -- sort of export ratio. And I've plotted for all industries as well as manufacturing, but we certainly do see that fall over time. So the extent to which foreign markets are being served by U.S. parent exports relative to foreign production is falling. This doesn't say anything about the IP-intensive part of that. I'll get to that in a minute. But first let me show you the import side.

Those import ratios are increasing. So the extent to which U.S. consumers are being served by multinational firms through imports, that is especially increasing in manufacturing. And as it turns out, to really kind of pinpoint this IP-intensive piece, you really need to sort of dig into the firm-level data and figure out which firms are intensively using IP and which ones aren't. And I present here some regression results of some analysis using the firm-level data in which I look at the export ratios and the import ratios and so let me just sort of talk about those first two columns first.

So these are columns that analyzing that export ratio the extent to which foreign demand is served by parent exports as opposed to by local subsidiary sales. And there is that general downward trend that I showed in the previous picture, but the coefficient that I'm very interested in is this interaction term that's picking up whether or not that downward trend is particularly pronounced in IP-intensive sectors. And that negative coefficient is telling us that it is. That it's really especially in IP-intensive sectors that foreign demand is increasingly served by foreign production.

And the last two columns look at similar things -- the import ratio and show that, you know, again we had seen the sort of increase in the extent to which U.S. based demand is being served by foreign productive activity. And that positive coefficient is telling us that, you know, after check-the-box ninety-sevens or when the tax rates disproportionally change, we have this very large increase in the extent to which U.S. demand is being served by foreign production as opposed to domestic production. So this is very consistent with what Paul was telling us about.

There are some potentially confounding effects that I want to flag. I haven't dealt with these yet. I only saw Paul's slides a couple weeks ago, so I have been trying to think about how to show evidence for them. One is that there's been a lot of intellectual property rights reform around the world. So to come into compliance with TRIPs, a large number of countries have strengthened their intellectual property rights and this would create an incentive for U.S. multinationals to engage in productive activities, especially IP-intensive productive activities, in reforming countries and that might be part of what is driving some of the results I just showed you.

And there has also been considerable liberalization of host country practices with respect to foreign direct investment. And some of those practices also might disproportionately matter for IP-intensive firms, right? So there have been a lot of liberalization, for example, of ownership restrictions and if I am running an IP-intensive firm, I'm going to care a lot about wholly owning my subsidiaries.

So to conclude, I think we have considerable evidence that U.S. corporate tax rates and tax policy have contributed to the decline in the share of manufacturing activity that's performed in the U.S. I think we have some growing evidence that suggests that the mechanisms that Paul has discussed really matter and I'm interested in considering them further.

This is one of these odd discussions. Normally I discuss papers at academic conferences and the outcome is I hope to make someone's paper better. Here, this is a great opportunity to see some legal practices that may actually generate a paper that I can write.

But I did also want to sort of flag a couple of questions that I hope the next panel will take up. And one of those is, you know, why should manufacturing receive special treatment? I think we see manufacturing accounting for a declining share of GDP globally. U.S. multinational share of activity abroad is increasing in services as well, so shouldn't we be thinking more generally about that? I appreciate the stories of a good manufacturing job and how this helps and the sort of notion that this contributes to a strong middle class, but I don't know if people really want the types of jobs that Foxconn, for example, is offering.

And then I think that Paul's last slide is a very important one. What is the appropriate response -- policy response to these practices? And I encourage the panel that follows this to think about that in broad terms, right? I mean we already have a R&D tax credit. So how far do we want to go with respect to providing incentives for IP-intensive firms?

MR. DESAI: Alright. So we are in the Brookings tradition running behind schedule, but we do have a few minutes for questions. I'm going to give up my prerogative to ask the first question in the interest of time. So if you have questions, we can get started there. Alright. All the way in the back. Robin.

MR. BERAN: Thank you, Mihir.

MR. DESAI: Please introduce yourself.

MR. BERAN: I'm Robin Baron with Caterpillar and we do make a few things, particularly in the U.S. A couple of comments maybe on Paul’s slides. I’ve got to resort my thinking here again, but one of the most important ones I guess in looking at Subpart F and exports, I think most of us would agree that the foreign activity related to selling exports is important. One of the quirks -- historical quirks of the U.S. law that’s actually works against producing in the U.S. and selling outside the U.S. is that any of the foreign profit earned related to selling exports is subject to U.S. tax currently. And so we’re still paying very high rates for all of the profit that we make outside the U.S. related to the selling efforts, which doesn’t seem to make a whole lot of sense in the current world.

The other thing I guess I’d point out in Paul’s comments and I appreciate your thoughts on this is the -- you talked about things like check-the-box and look through and things like that, I guess I’d say most of the foreign competitors we deal with don’t even have to go through all of those steps. Their systems don’t have the subpart F rules that we’re dealing with, so really all those two did was put us mostly on a more competitive footing. So I don’t particularly have a question other than --

MR. OOSTERHUIS: No, but they’re both very good points. And particularly the first one when a company like Robin’s exports, as we talked about, because there are really two types of intangibles. The technology intangible -- if you’re exporting the technology intangible, it’s going to be imbedded in the product and the U.S. is going to tax that you're giving that up. But the market intangible is still something that you might be able to push into an Ireland, for example, instead of having it be in Italy and yet subpart F would always pick that up, as Robin points out. And so it's really kind of a double barrel disincentive. Not only are you paying tax on the technology intangible, but you end up paying tax on the marketing intangible.

And you're absolutely right. Foreign countries have CFC rules like we do, but most of them reduce down to do you have a real business in this country? And the entrepreneur would be a real business in most of those systems. I see academics saying oh, the Japanese would tax that and that is just wrong. I wish our academics would actually talk to Japanese practitioners because that is not the way it works in Japan. You can talk to any experienced Japanese practitioner and they will tell you that contract manufacturing-type entrepreneurial operations, if they had a substantial number of people involved, would not be taxed in Japan. And so their rules are not a model to hold up to us in terms of taxing that kind of income.

MR. MAHIR: Other questions? Right there.

MR. MUSICK: Hi. Nathan Musick, Congressional Budget Office. I've got a question about the growth in foreign R&D performed by affiliates of U.S. multinationals. It seems like if you look on the regional basis, a lot of that growth has come from R&D performed in Asia and so it might be not just differences in corporate tax rates, but, you know, broader economic political considerations such as the opening of China to foreign investment that would be driving that R&D growth. And even if it is tax rates, isn't it more useful to look at the tax preferences for R&D in particular in differences across countries in that? Rather than just the overall corporate tax rate?

MR. FOLEY: Yeah. So certainly I had mentioned IPR reform as being one issue that has taken place in fact in several Asian countries and that is one other factor that does move R&D activity to those locations and it's one of the drivers for why it's growing faster in other parts of the world than in the U.S. for U.S. multinationals. So the tax piece certainly does have to be put it in context.

Regardless of whether or not taxes provide the incentive for where R&D takes place though, I think once it's been conducted abroad a lot of the issues that Paul discussed become very important to think about -- the ramifications of that and with respect to where production takes place.

MR. DESAI: John.

MR. SAMUELS: John Samuels from GE. So the question this panel is addressing is when do taxes effect the location of real investment, I take it. What I think is, from listening to Paul's presentation, it's pretty simple. From a business perspective, you would move an operation off-shore if the tax savings were great enough to justify any friction --non-tax friction in moving it off-shore. So you ask yourself when are tax savings big? And the differential is the U.S. rate at 35, let's say, and Ireland at 12 and a half or lower. They're big when you have big profits, high margins. How do you have high margins? Only if you have protected -- over time protected IP. It's easy to move your IP to a low tax jurisdiction. You just have call up Paul, I guess. But relatively easy to migrate it.

The question then becomes can I manufacture in the U.S. if I want to scale that IP? And what I'm hearing is not really. That I can manufacture in Ireland. If I don't really want to manufacture in Ireland, I can manufacture in China with Foxconn through a contract manufacturing arrangement or maybe a licensing arrangement. But I cannot manufacture in the U.S. And am I missing something or is that --

MR. OOSTERHUIS: No. That's the essential conclusion. That -- and it's leveraged, you know. Fritz's data was interesting on the import side, because I was really focusing on export versus foreign manufacturing. But because so many companies have one plant that does the product globally, if you're being driven by tax considerations with respect to your foreign sales to be manufacturing in a foreign plant, then that might dictate where you're manufacturing for the U.S. sales even if, for example, you're a cost share and so you're not getting any U.S. tax benefit out of the U.S. sales piece. Do you see what I mean? But because, let's say, 60 percent of your sales are abroad and 60 percent of your profits relate to those sales. If the tax savings by manufacturing abroad is sufficiently large with respect to that 60 percent, then you might move that plant abroad to do 100 percent, even though you're only getting the tax savings on the 60 percent.

MR. SAMUELS: And so -- just follow up. So some of the policy responses to this that you suggested in the first bullet would be to stop -- repeal check-the-box. Repeal (c)(6), which would make it very difficult to have your IP in say Ireland and manufacture in China. But you could still have your IP in Ireland and manufacture in Ireland.

MR. OOSTERHUIS: That's right.

MR. SAMUELS: So there would be that --

MR. OOSTERHUIS: You really have to repeal deferral if you want to tax that.

MR. SAMUELS: You have to repeal deferral. So there has to be some other way out of this. What would be other ways?

MR. OOSTERHUIS: Well, that's one on the last page. That's the carrot rather than the stick, which is to allow people to contract manufacture in the United States and not pick it up under Subpart F. How the revenue estimators would estimate that, I don't know because if they estimate it as losing money, that means we're getting a lot more manufacturing in the United States, so maybe it's less expensive than coming up with another version of FSC or DISC that, you know, might last 10 years before WTO throws it out.

MR. DESAI: Well, let me just reassert my prerogative and then we can finish which is Paul. The one way to think about what you describe is there are two things going on. One is there are these great incentives to locate IP income abroad. And then that's coupled with these linkages in the tax rules which make you want to take manufacturing and pair it abroad. So you've, I think, emphasized the latter in your solutions, which is let's remove those linkages so you don't have those incentives to necessarily manufacture abroad. But, you know, if we step back and ask ourselves maybe a more basic question, which is, is this fundamentally a transfer pricing problem? Which is if we got all the IP pricing right, would all this go away?

MR. OOSTERHUIS: No. It's not.

MR. DESAI: Okay. So that's what I don't quite understand. Why is that?

MR. OOSTERHUIS: Well, again, if you think of the licensing alternative and, granted, cost sharing -- you could do away with cost sharing if you wanted to and say maybe that would improve transfer pricing. That's another debate we could have. I don't think that's right, but just in the licensing models. You know, the companies that use licensing are basing their licenses on real third-party transactions that they have. Now they're not of the same scale, admittedly. And so you can say well that's means it's totally bogus. But the U.S. is getting -- look at all the royalties that are coming back. The 50, 60 billion dollars a year of royalties that are coming back to the United States and the United States is getting, under arm's length pricing, an appropriate return.

MR. DESAI: But, I guess let me just try to push this, Paul?

MR. OOSTERHUIS: So, I don't see how. If you abandoned transfer pricing and went to something like formula reapportionment, first of all, all the IP profit from foreign sales would be outside the United States, so I don't know that that would be any better result either.

MR. DESAI: Okay. We're well behind and I know Jim is anxious to get up here with his panel to answer all the remaining questions. So let me just conclude, and thanks, Paul and Fritz for a great presentation.

MR. HINES: This is our final panel. We are going to discuss policy options for the United States here. We have really a five-star panel and they have long and extensive and glowing biographies that are available in the book.

I won't go through all of the qualifications and experiences of the members of the panel, but instead we'll iconically describe on the far left, we have Rob Atkinson, who is the president of the Information

Technology and Innovation Foundation here in Washington. To his right is Donald Marron at the Urban Institute who is the director of the Urban Brookings Tax Policy Center.

This is to the right of me from your perspective is Pam Olson. She's at Pricewaterhousecoopers in Washington, where she is deputy tax leader and Washington National Tax Services practice leader. And on the far right is Damon Silvers, who is at the AFL-CIO, where he is director of Policy and Special Council.

We're running a little bit behind, but fortunately, the question that the panel is asked is an easy one to answer, which is should the United States reform the taxation of manufacturing, and we will start with Rob.

MR. ATKINSON: Yes. (Laughter) So, all right, well, thank you so much.

So, really, I'm going to do this in seven minutes, I hope. There are really three questions, I think, that have to be asked first, which is, first of all: Why privileged manufacturing? Second is: Does it need any help? And the third is: What are the specific policies?

Let me make it clear, I don't want privileged manufacturing in tax policy, but what I do want to privilege though is I want to privileged traded sectors and I want to privilege innovation and manufacturing happens to be -- that's what manufacturing is all about.

Manufacturing does 70 percent of R and D, and despite what we heard this morning, manufacturing really is the principle driver of our trade balance, positive trade balance if we ever get one. Services can't do that and won't be able to do that for 20 years no matter what we do. So, if we want to address the trade balance problem, which is critical to our country's economic future, we have to do it through manufacturing. And that is why some increasingly analysts and economists are recognizing that we should be taxing non-mobile income at a higher rate than mobile income. In the *Mirrlees Review* from the Institute of Fiscal Studies in the U.K. noted that it's efficient to tax mobile activities at a lower rate than non-mobile activities. So, that's why I think we should privilege manufacturing.

Now, the response from a lot of economists is that we shouldn't do that. Instead, we should broaden the base and lower the rate. The president's Recovery Commission stated "because certain assets and investments are tax-favored, tax considerations drive over investment in these assets at the expense of more economically productive investments." In other words, the pre-tax market gets it right 100 percent. There are no externalities, there's no spillovers, you should just get tax policy out of the way and that is why much of the debate which I can understand from politicians, but I'm a little more disturbed by it when it comes from economists. It's really quite pejorative and value laden when it comes to this. They use terms such as “distortions,” “special interest tax breaks,” “picking winners and losers,” “corporate welfare.” Simpson-Bowles recently called them in their report “perverse economic incentives instead of a level playing field.” I got to tell you I actually think perversity is a good thing. (Laughter) I like perversity, not in my personal life. (Laughter)

Now, it would be one thing if there was empirical evidence to support this, but there really isn't, there really isn't. As Phil Ageon and Paul David and Dominique Foray noted in an article on this, the empirical foundations for such sweeping statements remain remarkably fragile. In fact, there is good evidence that some of these “distortions” are growth-enhancing. Virtually all of the literature on the R and D credit makes it quite clear that the R and D credit is growth-enhancing, not growth-reducing. It’s welfare-enhancing. Yet, this doesn't always deter folks from saying this.

I would encourage you to go back to a classic 1979 article by Larry Summers and Alan Auerbach, who modeled the impact of an investment tax credit on the economy and to their no big surprise they found that an investment tax credit leads to more investment. Okay, good. And machines and equipment and software. Also, because of that, because machines, equipment, and software drive productivity growth, it led to a higher GDP, which then *ipso facto* meant we should get rid of it, which is what Summers and Auerbach argued, because it was distorting the pre-tax marketplace and making housing a little bit more expensive. I wonder if we had gone the other direction after 1986 that we wouldn't have been in this dire a strait.

So, the second question is: Does it need privilege? And I think the evidence is quite, quite clear. A study we've done called *"Worse than the Great Depression"* showed and I think Martin Baily alluded to that a little bit, that if you really look at the real accurate measurement of manufacturing output and BEA simply doesn't measure it accurately and they will acknowledge this, it's not quite their fault. It has to do with funding issues and other things like that, that manufacturing output went down in the U.S. This is the first time even though we don't have data going back to 1776; I would surmise that this is the first time in American history where we see manufacturing output decline over a decade's period, which we argue did by 10 percent. Others have, as well. Brookings Metro Program, Susan Houseman and Mike Mandel.

So, what do we need to do? I think we really should do three or four big things. I think that as much as a lot of economists look at the domestic production in Section 199 with disdain, I actually think it's a very useful tool. Some have argued, including the president's Recovery Commission, sort of mockingly, that the Domestic Production Deduction funds hamburger restaurants, and, therefore, we should do it because it's not targeted well enough. In fact, the study evidence shows that the 199 at 83 percent of the value of the deductions are by traded sectors, manufacturing, mining, or software. That's pretty targeted to me. Yes, there are a few other sectors that get a little benefit that aren't traded, but overall, this, to me, is an effective tool because it lowers the effective rate on traded sectors, makes them more competitive. I think the president's proposal for an advanced manufacturing provision is a good one.

The second thing I think we need to do, there is in the last decade very convincing evidence that there are actually the spillovers from investing in new machinery equipment and software or as large as the spillovers from investing in R and D. This is relatively new evidence and a lot of economists really only look at spillovers from R and D and most economists would acknowledge those spillovers are real and that's why we have the R and D credit. But, again, a lot of evidence that we've reviewed that says that investment in machines, not buildings or vehicles or things like that, but in machines and software, there are big spillovers. So, that's why I would either go to first year dispensing and permanent. I know Chairman Camp proposed something like that for small business. I would just make it for all business and do it permanent or I would go even further and say we should have some kind of investment tax credit.

Third, we've got to expand the R and D credit, as we've shown in a recent study that Jay Seward did with us. We now rank 27th in the OECD in R and D tax credit generosity. Excuse me, in the world. We used to be number one as early as the mid-90s. So, we should expand that at least up to 20 percent as Senators Hatch and Baucus have proposed.

Fourth, we've got to get the global territorial part right. I won't go into a lot of details there, but as we've heard earlier, that causes significant problems. I think a lot of the issues of exactly why we have this "does the tax code drive offshoring," I think what drives offshoring is our high rate at the end of the day. At a lower rate, we wouldn't go offshore as much.

And, so, I'll just close by saying this is my major concern with tax reform is that both parties have locked themselves into revenue neutrality and I think there's pretty clear evidence in a number of studies that we've cited that show that while our statutory rate is the highest in the world, our effective rate is not that low either and in some studies, it's been as high as one, but a lot of other studies, it's six or seven or four. We have a very high effective rate, and, so, by definition, doing corporate tax reform in a revenue-neutral way will not change that one iota.

We will still have a very high effective rate. All that will happen will be some companies get benefits. Some industries win and some industries lose and as Martin Sullivan just showed in *Tax Notes* that the winners probably are going to be banks and financial services companies and the losers are going to be manufacturers. I don't really think that's what we want to do in the country. I think we want to if anything go the opposite direction. So, I think we've got to bite the bullet on corporate tax reform and just say that we're going to put more money into it and raise taxes elsewhere, whether it's a carbon tax or that or higher taxes on the rich.

I'll stop there. Thank you.

MR. HINES: Thanks. Just one thing to point out, that 1979 paper that you didn't like by Alan Auerbach and Larry Summers, it was never published. They tried and tried and couldn't get it in. So, no journal would take it. So, I don't know if that makes you feel any better about the economics profession. (Laughter)

Donald Marron.

MR. MARRON: Hi, everybody. It's a treat to be here today. I think it's a fascinating set of questions. And I want to be honest and upfront with you to say that I don't actually have a completely well-defined sense of views yet on how exactly manufacturing or international aspects of things ought to be taxed. I think there is a whole host of interesting questions and what I'd like to offer you is the framework I've been developing for myself to help guide me through this. The framework will actually use many of the words Rob just used, although may put them together in slightly different combinations. (Laughter)

The tradition I was raised in was that when you think about tax policy towards business, there is a rebuttable presumption, and it's important to have rebuttable presumption upfront, that there is a rebuttable presumption that you want to have a level playing field and the reasons for that are good, but they're rebuttable, right?

And, so, the reasons for that are first, as Rob mentioned, they're sort of the economic argument that if you for not lacking a good reason, if you have an unlevel playing field, you're going to create distortions in the activity that people undertake and that relative to a world where people can make decisions based on underlying economic fundamentals, having arbitrary tax differentials to that that favor any particular sector are going to lead to economic losses and that seems straightforward. There's a correlative that which is a fairness concern which is that why should you pick particular people to be winners while other people are going to be losers unless there's some good, affirmative rationale for that.

And then third, and I think actually for many economists or at least economists who've step foot inside the beltway and attended events like this and looked at all the people wearing ties and tried to add up what the hourly rate is of everyone in the room, there is a concern that once you go away from a level playing field, you open the door to rent-seeking, right, that people will then petition the government not for things that are going to be for the benefit of society at large, but for the benefit of carving out a particular benefit for what they do if they can figure out a way to get it under some approved name that makes people happy.

And, so, without picking on anyone in the room, I will say that you certainly observe that, for example, in there's a certain group who go weak-kneed and goo-goo-eyed over the idea of small business and there is a category of people who work very hard to get whatever they do be categorized to small business so they can get the goodies associated with that. A long tradition in agriculture, as well, right? Being a yeoman farmer, I will not have any opinion yet on whether that’s true of manufacturing, but just keep in mind that once you go away from a level playing field, you open the doors to rent-seeking activities that wouldn’t exist if you had a level playing field.

Now, a correlativeness is that the real world is a complicated place and even if you're very well intentioned, you might design tax rules that were in some sense intended to be a level playing field, but failed. And, so, to the extent that you have an argument that a particular tax design is disfavoring manufacturing or disfavoring a particular activity, you can certainly have a pro level playing field argument for correcting that.

Now, I tried to emphasize upfront the rebuttable presumption part because I think Rob is right that a lot of people who think about cleaning up the tax code tends to have an overly expansive notion of what a distortion is and sometimes throw the baby out with the bathwater, that there are distortions and there are things you're doing for a reason and there are some times you don’t want a level playing field. And the two, I think, strongest examples of that are first the spillover argument, right, that if there's some positive spillover that comes accrues to the people of our nation from some particular activity, you may want to tax it lightly or give it different tax rules just as if there's some negative spillover that comes, you may want to tax them harder, right?

So, I talk and evangelize a lot about doing a carbon tax because I think carbon is bad and that you could have a better world if that were accounted for in prices. Similar thing with positive spillovers, and, so, you have discussions about R and D tax incentives and those sorts of things.

The second is this issue of mobility which is that even if in a perfect world where things didn’t move around and people couldn’t hide from you and people couldn’t avoid taxes, you might like a level playing field. The reality is that if you have a tax system whose purpose is to raise revenue, there is another longstanding strand of economic research that says you want to tax more heavily the things that are less mobile, that are less able to escape the tax and you want to tax more lightly the things that are able to escape and particularly in this context able to move abroad. And that’s something where from a moral point of view you might find it troubling, right, because the guys who are going to face the lower tax rate are the guys who are the sneakiest at avoiding you. But, nonetheless, if your goal is to raise revenue while doing as little economic harm as possible is a good way to think about things. You want to tax more heavily the things that are less mobile, even if it might trouble you in some separate ethical sense.

Now, obviously, both of these are very important issues in manufacturing, right? So, we've had a lot of discussions today about the possibility of spillovers. To me, there's this issue about to what extent can you capture those appropriately with policies that are focused on the spillovers themselves rather than sectors?

So, R and D incentives, for example, are a good example, where R and D is an issue in manufacturer, right? As Rob says, it's very important at manufacturing, but, obviously, there's R and D, as well, in the service sector, the software folks of the world. And, so, you can imagine designing incentives that will identify that and target that without making a big deal specifically about manufacturing. You simply have the set of issues about mobility and really in this world, there are two types of mobility, there's kind of the IP moving around the world mobility, which is mostly a matter of lawyers and electrons. (Laughter)

And then there's like the actual physical activity moving around the world, right? I mean, I don't mean to belittle, as we just heard, right, those things may, in fact, be correlated with one another. And did you want to think carefully about rules about international tax and all those very complicated things to get that right? Again, there's an important aspect of manufacturing in that, but it isn't limited to manufacturing.

Similar issues arise with call centers, with software, and whatnot. And then once you've gone down that route, the question I'm left with is suppose magically you got your research and development policies exactly correct and your international tax treatment rules exactly correct, would there be then something that's left over that's special about manufacturing? And I yet have not kind of found that answer that says affirmatively yes to that.

I'm still open to that possibility, but where I stand today is that more I think about it more about focusing on the activities and concerns, you want to get the spillover set of issues right, you want to get the mobility set of issues right. Both of those could argue for more favorable tax treatment than other non-mobile, domestic undertakings get, but once you've done those, it's not yet obvious to me that manufacturing beyond that deserves special treatment.

MR. HINES: Thank you very much.

Pam Olson.

MS. OLSON: Good morning. So, I think maybe I want to start by associating myself with the comments of Don Marron. I'm not an economist, but I've consumed a lot of economics in my years in Washington working on the tax space. I'm a tax lawyer by training, and, so, maybe what I'll talk about is a little bit more the practical side of some of these things.

I'll also say that I spent probably over a quarter of my professional life in government and there's one thing that I learned from years in government and that's the government doesn't do a very good job of choosing winners and losers. So, I guess I would also say if government adopts a policy in support of manufacturing, then I think it would probably be preferable to do it through the tax code rather than do it through spending because doing it through the tax code does allow for some more market-oriented kinds of decisions than decisions that are left purely to the government on the spending side.

There are, however, real problems with delivering benefits through the tax code. The first I'd mention is the law of unintended consequences. It's sometimes said that the one law that Congress can't repeal is the law of unintended consequences and that certainly has been the case in the area of the tax law and I think we've heard some of the anomalies discussed already this morning.

The next problem I identify with delivering benefits to the tax code is just one of administrability. In 2003, perhaps, I guess, when Congress was first looking at the manufacturing deduction, I had I think maybe the misfortunate of being the administration's witness at the Senate Finance Committee when I was asked a question about how the administration felt about the manufacturing deduction. I explained what we saw as the complexities and difficulties associated with it and after I was done, the chairman of the Finance Committee announced that my position was ludicrous. (Laughter)

So, a point that I think was reported at some point in the *Wall Street Journal* thereafter with questions about whether or not it made sense for Congress to be directing investment through the tax code. But I think my position was fully justified when shortly after the provision was actually enacted at a conference, one of the largest manufacturers in the country announced that it did not intend to claim the manufacturing deduction because it was going to cost more to compute what the benefit was than it was worth. (Laughter) I think the 199 deduction did create a lot of jobs. Unfortunately, they're all in tax departments and accounting firms and law firms and very few of them on the manufacturing floor.

Next thing I would say is that when we do something through the tax code, we in effect put the IRS in charge of industrial policy, and, again, having spent time in government, I'll tell you that I think that is not where we want to be.

Next point I would make is that when we do something through the tax code, what we end up with is a benefit that is in many cases uncapped, unverified, and at least in some part unverifiable. We simply can't have enough coverage to determine whether or not all of the dollars that go into the benefits are appropriate.

The next point I would note is that the more that we do through the tax code, the more that we increase the differences that exist between book and tax numbers.

I was testifying at a Budget Committee hearing a few years back and one of the points that I had made was that there were a lot of differences between book and tax and that could have some effect on the government’s revenue estimating, at which point one of the members of the committee interrupted me to say you mean to tell me that there are different numbers reported to shareholders than are reported to the IRS? I suggested that he should get introduced to the chairman of the Ways and Means Committee. (Laughter)

Anyway, but so the differences between book and tax lead to a lot of misunderstanding, they lead to a number of reports about corporate America that are simply inaccurate because people simply fail to recognize the things that have been put into the code that they're intended actually to create differences and I think that we’ve gotten to the point where it’s actually damaging our society.

And then the last point I’ll note in this regard is that the differential treatment, I think, undermines support for the tax system at large. So, if there's a benefit for one industry over another industry, the un-benefited industry thinks that the system is unfair and perhaps quite properly takes objection to it and of course also creates a whole lot of what Don mentioned of rent-seeking and if you look at Section 199 and how it was enacted, you can see a good picture of all the activities that one might not have thought of were manufacturing that got jammed into that provision.

One of the things that's interesting to me is we've talked this morning that tax reform could actually raise the effective tax rates of manufacturers and it seems to me that is actually a recognition that manufacturing currently has preferential treatment and if we look at the continuing decline in manufacturing, it does, perhaps, suggest that the tax preferences either don't work or that there are other forces out there that are accounting for the decline in manufacturing and there may not be anything that we can do through the tax system to offset it.

So, what should we do? Well, I think first of all, there are a whole lot of non-tax issues that are affecting the level of manufacturing in the U.S.

One of them is the litigation premium. We need tort reform in this country. I've heard investment bankers say that the litigation premium in the U.S. is somewhere between 2 and 4 percent versus investing somewhere else. Those unintended consequences that I mentioned, we have enacted laws particularly on the environmental side that have been well intended, but they have put so much liability on people who would come in and investment and clean things up that it has actually had the effect of driving them away. One example of that is some of the circular rules.

Another point, education and training. This is a point that was made earlier. In that regard, if we look at the tax system, we might think that our current tax incentives have it backwards.

So, when it comes to education and training, if you take something that's intended to improve the way that you do your job, you can deduct it. On the other hand, if you're being trained for a new job, that's not deductible. Well, given how much change we have in the society and the need for more training, we probably ought to reverse that rule. We also need to look at changing our educational system so that it does a better job of delivering people who are capable of working, including in particular in the manufacturing sector, where all of the new high-tech stuff means that you've got to be much more than an ordinary high school graduate in order to function successfully.

Having just written a couple of weeks ago my last tuition check for my children, I can tell you that I wish our educational system did a better job of preparing them for jobs in the real world.

Another point, this is not tax, but it’s related to training, we should rationalize our job training programs. We have something like 41 national job training programs that are overlapping, they're inconsistent, and they don’t really do a very job good of ensuring that what we continue to do is move our workforce onto the next level skills that they need to succeed in a global economy that is much more technological and much more reliant on machines.

A couple more points, we should make our savings incentives more accessible to lower and middle-income folks. I’ve talked and written about that a number of times in the past.

On the more radical side, I think we should look seriously at significantly reducing the take of the corporate income tax and replacing it with a Japanese style VAT, subtraction method VAT which would have the benefit of eliminating deductions on things that are imported into the country and eliminate any tax from things that are exported.

And then, finally, we should just be aware of the repetitivity of change. Things are moving in terms of ownership, of assets in terms of the companies that are dominant, the technologies that are dominant, and we just need to make sure that whatever we do, we don’t bake things in on such a permanent basis that it makes it harder for us to change.

MR. HINES: Thanks, Pam. One caveat, you never really know that a tuition check is your last. (Laughter)

MS. OLSON: I do.

MR. HINES: You don't. (Laughter)

Damon Silvers.

MR. SILVERS: I guess discipline as it's placed in many realms of life.

So, like Pam, I'm a lawyer, but I've been to business school, and, so, instead of talking about law, I'm going to start by talking about numbers. And I thought that I was running a risk that in what I'm going to say that I would be repeating things that other people had said. At least in the part of this event I've been to, no one has said these things, so, and I think that's a telling thing that no one has.

So, let's start with this: Over the last generation, corporate profits, the basis on which corporate taxes are paid have grown as a percentage of USGDP and even grown significantly within the last 10, 12 years from 8 percent on average in the 2000s to 11 percent today. And while this has gone on, we just have shrunk as a percentage of USGDP going from there are now 43.5 percent. During the Postwar Era proper between 1945 and 1975, wage share was always over 50 percent and it was as high as 49 percent at the end of the 1990s, the last time we had approaching full employment in the United States. But while these underlying trends have occurred, corporate taxes as a percentage of GDP have shrunk dramatically. Corporate taxes represented 3 to 4 percent of

GDP in revenue in the 1950s and 1960s and today and over the last 10 or 15 years, it varied between 1 and 2 percent of GDP. At the same time, individual income tax revenue, which is based on wages in large part has remained relatively constant over the same period as a percentage of GDP. It was 7.8 percent in 1960 and it’s 7.3 percent in 2011.

Now, the shrinkage of corporate tax revenue as a percentage of GDP has serious fiscal consequences. It’s interesting in this conversation we haven't really talked about why do we tax corporations. We actually need money to run the government. And the shrinkages in corporate tax revenue is a percentage of GDP, meaning as our society and our economy has grown and as our need for things like public investment has grown, that shrinkage is 2 percent of GPD per year.

And now to get to some numbers that are going to wake you up if you’ve been paying attention to say the sequester, 2 percent of GDP per year, right, which represents $300 billion or $3 trillion roughly in terms of the 10-year fiscal window. I know the people from CBO here who could probably run the real number in their head, but I can't. I know that’s roughly 10 times.

At the same time while this has gone on, manufacturing in the United States as a percentage of GDP has shrunk from 21 percent in 1980 to 12.2 percent in 2012. And while other advanced countries have seen declines in manufacturing as a percentage of GDP, ours is proportionately greater than other advanced nations even assuming that we are counting it correctly. And Rob has mentioned that there are very serious issues about whether or not the Commerce Department numbers is properly counting the way the value added in manufacturing in the United States. But what we do know is that manufacturing employment has fallen dramatically by 5 million lost jobs since 2000. And manufacturing output has done no better than remain constant as our economy has grown and as Rob said quite possibly has shrunk.

Now, there has been a significant recovery in manufacturing employment since 2009, however, and this is important in relationship to the assertions that are made about manufacturing as a very valuable, important thing, however, the way in which manufacturing has recovered since 2009 has been providing incomes to manufacturing workers that are far below the U.S. manufacturing average as exemplified by GE's opening of appliance plants that pay $12 an hour and final assembly auto plants paying $15 an hour.

Now, understand in case these numbers are not familiar to you that $12 an hour is roughly $24,000 a year, which is literally the poverty level for a family of 4 and this is for the type of job that was generally understood in our society and by the way I just came back from Berlin, is understood in Europe to be a job that provides the economic foundations of a fair and just society.

Someone mentioned earlier the question of whether Americans want Foxconn-level wages. The drift of things is in the direction of wages which in the context of our society are Foxconn-level wages.

Now, corporate taxes in the U.S. are high in nominal terms, but they are at the same time -- and this is undeniable, but people keep ignoring it -- actually slightly below average for OECD countries in terms of GDP-weighted averages, meaning if you just run a raw average including countries like Ireland, you'll get a lower number, but that's the relevant number. The relevant number is a GDP-weighted number.

Against this backdrop, what should tax policy goals be in relation to manufacturing? Now, I'm not enough of an expert and particularly in this room to start rewriting the tax code on the fly, all right. There are people here who can do that far better than I can, but I just want to talk about goals, all right. It seems to me the first goal should be that we do no harm. Meaning that our tax policies should not be incentivizing manufacturing activity to move offshore. And may be a lot of disagreement about how you achieve that goal, but that should be something we ought to be able to agree on.

What makes things difficult is that a second goal really must be given everything that's going on around us that our corporate tax policy should contribute to addressing our structural fiscal deficit. In other words, that as long as we generally in a period of fiscal consolidation, corporate tax policy should add and not subtract from our nation's revenue base.

Now, a third goal, which is sort of similar to the first, but is not quite the same is that our tax policy should not increase our nation's trade deficit. And by the way, our nation's trade deficit is a problem at many levels in terms of its ability to finance it long term and in terms of its impact on the ability of our economy to keep our people employed, which is a significant issue right now.

A fourth goal should be fairness within the manufacturing community, meaning that small to medium-sized enterprises should on the whole be paying lower and not higher rates than large, global corporations. It's a bunch of different reasons for that and one of the issues is the issue of movability that was just discussed, but the other is sort of a fundamental principle about how we do our tax system generally and much as we do with individuals.

To the extent that GE has a competitive advantage over a small manufacturer, it should be based on the ideas of GE's engineers and the skills of its workforce and not the budget of its tax department.

Now, a fifth goal should be reversing, and this is, I think, the hardest one, requires the most ingenuity on the part of policymakers, but if you think about issues like climate change, which have been referenced a couple of times today, this is, perhaps, the most important. A fifth goal should be reversing a generation-long, worldwide race to the bottom in corporate tax rates. Ultimately, similar in nature to the self-defeating competition among states for manufacturing activity by gutting the revenue base of their public school systems because this global race to the bottom is undermining not just the U.S.'s ability to maintain our tax base, but our global capacity to fund public goods, just when those public goods are most desperately needed.

Now, unfortunately, some of these goals are intention and it'd be easy to say well, let's just do everything, right? But the goals are fundamentally intentioned, meaning that one way to encourage domestic manufacturing and to reduce our trade deficit would to, in fact, for the United States to become a tax haven and that idea has kind of been in the air in many discussions in Washington. But that would be fiscally destructive and if you think about what the actual sources of manufacturing competitiveness are, it would be self-defeating in terms of our nation's ability to maintain the underpinnings of a successful manufacturing economy in the form of infrastructure, education, telecommunications, energy, and the like.

But being explicit about these goals makes it relatively easy to rule out ideas that both encourage offshoring and at the same time contribute to increasing structural deficits, like the territorial tax system which would add $130 billion to the nation's deficit over the 10-year budget window according to CBO and would ineffectively encourage companies to move employment offshore.

In contrast, repealing deferral, which has come up a couple of times here as the kind of pie in the sky of tax ideas would be repealing deferral, treating all corporate income the same wherever it was earned would reduce the deficit, remember that, over the 10-year window by $583 billion, enough to entirely address what President Obama has asked for in revenue to replace the sequester.

The harder question is what to do in relation to the current menu of tax benefits for manufacturers that do not subsidize offshoring, but do provide support to specific business decisions, most notably R and D and investment in capital plan and equipment and other depreciating assets.

Repealing these tax expenditures is part of an effort to fund an overall reduction in nominal corporate tax rates, would amount to a shift in tax incidents from non-manufacturing to manufacturing firms. Given today I went through about the state of U.S. manufacturing, this may not be the wisest of ideas, and, by the way, to put a note of practicality on, as far as we can tell, this approach is actively opposed by all the major manufacturing employers that employ the members of the AFL-CIO.

It is, of course, possible to imagine a comprehensive rationalization of U.S. manufacturing policy which would include a reorientation of trade agreements, including treating tax as a component essentially of trade barriers or trade subsidies. A much more serious approach to currency manipulation and an end to the tax subsidization of offshore activities in the U.S. tax code.

In that context, it might turn out that each and every one of the current tax supports we give to manufacturing might not be the most effective way of supporting a manufacturing revival, but given the overall position of U.S. manufacturing, in the absence of a comprehensive set of large scale policies supportive of manufacturing, and, frankly, the confidence of those with an interest in manufacturing that the government was serious about it, withdrawing the current targeted benefits for manufacturers seems to us just one more nail in the coffin of U.S. manufacturing. There are plenty of nails in it already and doing that is about the last thing the United States needs or the American public wants.

I want to comment about something that's been talked about a lot today for one moment, which is the notion that tax incentives and tax subsidies of various kinds is part of large economic strategies, represents economic inefficiency. I've made something of an amateur study of economic history and those types of arguments are made by societies in decline. Societies that are serious about their economic prospects have strategies; they execute them; they don't worry about those arguments. Those arguments get deployed in countries like Spain in the 18th century and Britain in the late 19th and 20th century when, for a variety of reasons, the political power has shifted to favor economic and social forces that are encouraging large-scale national economic decline.

Now, the great obstacle to rational corporate tax reform is fundamentally the desire of American business to have its cake and eat it, too. The demand that we cut business taxes and fix the debt and that we both lower rates and preserve business tax expenditures.

Now, the depth of the passion for these positions suggests to me that despite the number of lobbyists out there that are making payments on their BMWs by promising their corporate clients that they will get them tax reform, just send another check, please, that really and truly until there is genuine public-spirited business leadership that can get beyond this have your cake and eat it, too, mentality, the prospect of large-scale rationalization of the corporate tax system or public-spirited tax reform in any form will likely remain an ever ceding mirage.

MR. HINES: Thank you, Damon. (Applause) And thank you to the panel.

In the spirit of having our cake and eating it, too, we've had these presentations, but we have a few minutes for a question and answer on the small chance that any of this prompted some thinking on members of the audience.

SPEAKER: Yes, my name is (inaudible)

MR. HINES: Please --

SPEAKER: I'm a trade lawyer. I teach at Catholic University Law School. I'm not an economist, but my understanding is when you look at GDP formula that when you have net exports minus, you're taking away from your GDP growth and your job growth. And the United States just in the last 10 years has probably run at least $3 trillion worth of trade deficits.

Now, the Democratic Party of Virginia has adopted a resolution that we should set a national goal to balance our trade by the end of the decade. That way all these discussions would have some goal that would drive us to do something very important for the country and I'm just wondering what do the panelists think of setting a goal that then drives the policy that we put in place to deal with the big national problem like we have here.

MR. ATKINSON: Well, look, there's only one deficit that's allowed, credibility in Washington, and that's the budget deficit and the trade deficit is seen as not a similar kind of deficit, which it is. Trade deficit is basically a debt we're passing on to our future generation. So, I think some kind of aspirational goal, maybe not a hard and fast goal, but I think we'd just be better off if we could just acknowledge that it's a problem. That'd be like step number one if you're an alcoholic, you have a problem.

Each four years, the average American household gets a Jeep Grand Cherokee without paying for it. That's the amount of the trade deficit that we all get to have because we don't have to pay for it. So, why would I give that up? I love my Jeep Grand Cherokee every four years. So, I think we need to have a rational discussion and say we just can't do that anymore and set a goal that says at some point, we should get the surplus.

MR. HINES: I'm glad to hear you buy cars made in Michigan. (Laughter)

Are there other questions?

MR. NEXTROTH: I'm Dan Nextroth with Maypie.

Has there been any thought at all of eliminating corporate taxes and making corporations distribute the book profits to the individuals who own it, to shareholders, and then tax to shareholders to individuals? So, in fact, you don't tax corporations, but you tax the individual on the corporate profits.

MR. MARRON: So, if you visit our Web site taxpolicycenter.org, you will find a paper by one of my colleagues, Eric Toder, sitting back there, with this idea of lowering corporate taxes and then replacing it by increases in dividend capital gains taxes, I'm not sure you guys consider an actual forcing of sending the money out, but there is this idea that you could get rid of some of the problems of corporate income tax while keeping the distribution of the tax burden relatively similar by offsetting that by an increase on taxes on individuals.

I should note there is one challenge in this and this is a delicate thing to say in an organization that gets foundation funding, spoken by someone who gets foundation funding, but if you reduce corporate taxes, one set of beneficiaries of that are organizations like college endowments and foundation endowments that otherwise have no tax, and, so, there are some issues there about what exactly the full distributional effects of a proposal like that, but it is something that has gotten some attention.

MS. OLSON: And the latter point is why the Treasury Department in 2003 put forward a proposal to allow a credit to flow through to the extent taxes were paid so that dividends would be paid without tax, capital gains would be paid without tax to the extent that it reflected taxes that had been paid by the corporation, but that was because of the leakage that would occur because of the portion of stock that’s held by tax-exempts.

MR. SILVERS: I think this subject has gotten a lot of attention as you can tell by the eagerness of my fellow panelists to step forward. I think in order for it to be a serious idea, you'd have to have a conversation with a Delaware Chancery Court, which is probably a body that very few people here thought very much about, but that’s the court that determines what's an acceptable corporate act because I can tell you right now that as the law stands today, you can pretty much do anything you want with corporate assets as long as you're not burning them in the street in relation to essentially the distinction between a corporate purpose and, how should I say it, the personal benefit of the employees and officers of the corporation.

Now, it’s just very hard to draw lines, and for good reason, by the way. I’m an admirer of that court and if you don’t have this very loose regime, to my fellow panelist’s point about litigation, everything becomes litigate, but the problem with this then is if it makes it possible to park assets in a corporate form and not pay taxes on them, right, you can them essentially consume them. It’s very, very hard to stop under the current legal regime and that’s a big obstacle. That’s obstacle one.

Obstacle two is that you really have to be serious about the idea of much higher marginal rates on individuals, right? Much higher if you're going to make this change.

Now, the AFL-CIO is all for that, but we’ve watched these processes a little bit in Washington and look at how hard it was to get from what was it, 36 to 39, right, for just a tiny portion of the population. And I think in terms of the amount of energy one would want to invest in this question, I think those points should give you some pause.

MR. HINES: In the far back.

MS. CRONIN: Brenda Cronin with the *Wall Street Journal.*

Given all we've heard this morning, then how sanguine are you for any significant reform, corporate tax reform say in the next two years?

MR. ATKINSON: Oh, I think it's the likelihood is the highest it's been in a long, long time. I think there's commitment from the leadership in both chambers to do something. There seems to be this growing consensus around the growing parameters around revenue neutrality, getting rid of deductions and incentives and doing something around territorial. But I worry that at the end of the day, we'll be back really with the exception of maybe some changes on territorial which will have some impact. I just think at the end of the day it'll be a lot of ado of about not much because it won't change the fundamental problem that we have, which is that our corporate tax code is uncompetitive in global markets. I don't see any evidence that there's a willingness to take that on in a serious way.

MR. MARRON: Yes, so, like Rob, I think there's a lot of sincere interest in attempting this. You see it in the House, you see it in the Senate, you see it in the White House. The challenge is doing corporate reform by itself becomes problematic because of all the businesses that are structured as pass-through entities and whose taxes end up being paid on the individual side. That then leads to the direction of doing business tax reform rather than just corporate tax reform. Once you're doing that, however, then you're starting to effect what is scored and thought about as being the personal income tax understandably, and you're getting to then kind of go down the route of doing personal income tax reform and at the same time you're doing corporate reform, which of course is what we did in 1986, but you will all have looked around and noticed that we are no longer living in 1986. (Laughter)

And, so, I think there's a lot of sincerity and a lot of leadership trying to think about how to do tax reform, but it’s actually hard to see how you draw the boundaries around relatively small, medium-sized corporate or business reform without getting into the whole code and the more you get into the whole code, just the more complicated and hearted as to get something done.

MR. ATKINSON: There are two things that I want to amplify about this question. One is and you got to go back and look at the Obama Administration’s white paper on corporate tax reform, which lays out the math of some of these things that a lot of work has gone into kind of paper over some fundamental economic collisions between different interests in the business community and when you actually go try to run the math to support those words, it becomes very, very challenging.

So, let's just assume for the moment that the idea that you'd want a lower nominal tax rate and a higher real tax rate is kind of where you want to aim for, right? Or maybe it's not. Let me leave the higher real tax rate aside for the moment. You want a lower nominal tax rate, all right, and fewer tax expenditures to make up for the revenue loss. You start trying to make any serious motion in that direction and you start stepping on some giant sacred cows with the American business community, starting with all those corporations that actually don't pay any taxes, right, with S Corps and the like, partnerships. In order to get the numbers to pay for meaningful reductions in the rate, you've got to touch a whole bunch of other stuff, right? You got to look at not just the manufacturing times we've talked about, but you've got to look at the interest tax deduction, right? Just to make the numbers add up.

Now, is that an exercise that the AFL-CIO would be open to? Sure. We can have that conversation. I'll tell you the conversation though that we're not open to. And this is the other problem, right, because the only way the business community papers this stuff over and the absence of real leadership is to suggest that in an era of fiscal consolidation, nothing should be asked from the business community net, nothing, right?

Revenue neutrality -- your answer is Michael Corleone's answer in *The Godfather.* Remember when he's asked what are you going to pay, what are you going to pay for a bribe? His answer is nothing. That's your answer. That's the business community's answer, nothing. Meanwhile, we're talking about cuts in Social Security, taxing workers' health benefits, closing down parks, cutting food stamps, cutting home heating aid. We'll never stand for that. We will never support revenue neutral tax reform as long as it is going on in an atmosphere of fiscal austerity when those kinds of things are being threatened against working people, never.

MS. OLSON: So, I guess I'll say that if this were easy, it would have been done a long time ago. Of course, it's hard and that's why it hasn't been done, but I think that there's as much progress as could possibly be made towards tax reform over the course of the last couple of years with the work that the administration has done, with the work that House Ways and Means Committee and the Senate Finance Committee have done separately and together and I think there's actually been a lot of groundwork laid for us to move forward with reform that would be good for the economy, good for investment, and good for growing jobs in America.

And I do think that we need to keep our focus on growing jobs in America. I also think that it's important for us to not sort of mindlessly focus on corporate income tax as the only contribution that's made because we don't want to drive capital out of this country, we don't want to drive business out of this country, we don't want to drive jobs out of this country. And, so, we have to remember as we look at this, all of the other things that business does for us in terms of the jobs that they create, the health benefits that they provide, the payroll taxes that are paid, the real estate tax that are paid, the consumption tax that are paid. So, there are lots of contributions that are made by business and we've got to make sure that we have as an environment that is good for businesses to grow and invest.

MR. HINES: Alas, that's all the time we have. I think I can summarize the panel discussion by saying that the answer to the question should the United States reform the taxation of manufacturing is yes, but we're still ironing out the details on exactly how. (Laughter) But please join me in thanking the panelists. (Applause)

MR. SAMUELS: So, I'm back again. I was actually just telling Damon that I agree with a lot more than he thinks. So, I have the privilege of introducing our keynote speaker, Laura Tyson, and I've got to tell a story about her last night. We had a dinner last night and she said, "John, I want to be very clear with you." I asked her a couple months ago to speak and she said, "Well, I came to do this as a favor to you. This is a personal favor." And then this morning she saw me here and said, "I really came here because whenever I'm with you, I learn something." So I said to Laura, I said, "Which is it? Is it a favor to me or is it that you learn something from me here?" She said, "It's both." So, I know where I stand in the pecking order.

Actually, there's many facets to Laura's very impressive background, and you can read about them all in her bio. Very impressive career in the Academy. She is currently a professor of global management at the Haas School of Business. She served as the dean of the London Business School, and the dean of the Haas School of Business before that. A very distinguished career in government service. She was chair of the CEA under President Clinton, and then became President Clinton's Chief National Economic Advisor. She served in the Obama administration as a member of PERAB. This is where, I think, she tells me she got into tax rule. We'll find out in the member of the PERAB or the President's Economic Recovery Advisory Board which came up with a number of recommendations for tax reform. And most recently was a member of President Obama's Jobs Council where my chairman, Jeff Immelt, was the chair of that Jobs Council, and I got to work with Laura a little bit on that. She's also very active in the private sector serving on the boards of directors of Morgan Stanley, AT&T, CBRE, and Silver Spring Networks. I'm not sure what that is but I'm -

MS. TYSON: Pre-IPO.

MR. SAMUELS: Pre-IPO. Okay, good. So, she's going to be rich some day, too. But we are really very lucky to have her. I told her she could talk about whatever she wants to talk to talk about, and she's going to, but she's a -- well, that's it. Join me in welcoming Laura and thanking her for coming here. (Applause)

MS. TYSON: So, if any of you haven't worked with John, he is true pleasure to work with. He's lots of fun in addition to knowing many, many things. And by the way, if I ever do become rich, I intend to give my money back to universities so I can think of a distinguished professorship to look at tax policy for manufacturing, things like that. Okay? That would be my goal.

So, I will talk about some aspects of tax policy we've heard about today. I want to start with two observations. The first is it is true that I really had not thought very much at all in my life about corporate tax policy until I was asked to be on President Obama's Economic Recovery Advisory Board, and in the second year of that board it was decided to ask a subgroup of the board to look at tax reform options, including tax reform options in the corporate sector.

And by the way, we were explicitly told to make recommendations. We were told to evaluate options, but a significant chunk of what we did was to look at options in the corporate sector, and I had the good fortune of working side by side with a true tax policy expert.

I don't agree with him on many political things, but that's Marty Feldstein, and on this set of issues he and I worked very closely together with lots of expert help like Eric Toder and others coming and talking to us about corporate tax issues. So, that's the first point I want to say.

The second point I want to say is it is possible to listen to that last panel and agree with many, many things that Bob Atkinson said and many, many things that Damon Silvers said. So, there is, somehow in the middle of all this, some room for some common concerns. So, I just want to start with those two observations.

Now, I also then will start with the observation of the OECD that most economists have that corporate taxes are the most harmful of all taxes to economic growth. So, if your goal is you have to raise revenue, and if your other goal is you want to promote growth, well, corporate taxes are a particularly bad way to achieve those two goals. They're actually in conflict with one another because corporate taxes reduce the incentives to save and they reduce the incentives to invest.

The U.S. does have the highest statutory corporate rate. It does, by many measures, have one of the highest, certainly above average, average effective corporate tax rate and marginal effective corporate tax rate, so economists debate which rates are most important; sometimes statutory, sometimes average, sometimes marginal. The U.S. doesn't look particularly competitive on any of these measures, and I think that's important to start with.

Another thing important to start with is we focused on tax here today, but going on behind all the grass we saw are these major forces which all of us are trying to grapple with, and that is global interdependence and technological change, which do make capital much more mobile across national boundaries, and therefore make the differences in statutory, average, marginal effective rates much more important because capital can make decisions much more actively about where to invest, where to invest real economic activity, where to put your intangibles, and how to mix them all up in that wonderful mix of things you saw this morning to basically try to reduce your tax bill to any national entity as much as possible.

So, lately we have heard the concern of finance ministers all around the world saying, "Wait a minute. Nobody is taxing this income because the rules we have set up are so wonderful to allow institutions to make decisions to reduce their effective tax to very close to zero that no national entity is taxing very much." I proposed last night at dinner that there's at least the possibility that all of this publicity about hugely profitable high-profile global name brands around the world antagonizing finance ministers every place, we might get to a tipping point.

And the tipping point -- one thing that's happening right now is the G20 has asked the OECD to look carefully at what's going on in base erosion. That's the mobility of capital to avoid being taxed anyplace. Let's define it that way. And the OECD has been asked to look at this and to advise the G20 on possible recommendations.

So, at the end of the day if you believe that this difference in statutory rates or effective rates is becoming a more important driver in a world of mobile capital, to where capital goes for tax reasons, then clearly that's driving the major players of the world to look for some kind of harmonization solution, at least at the margins, some kind of harmonization solution.

And by the way, one of the harmonization solutions that in aversion President Obama proposed, but it's a solution which is now academics are looking at, would be to have some kind of minimum tax that's just paid every place. And it's going to be related to your real economic activity in that place, so it doesn't matter if you're doing real economic activity in a place, but it's not enough to just put your intangible assets in that place. I don't know if that's going to happen. I'm just saying the tipping-point issue here as we see this sort of coming together of major differences in tax treatment, mobility of capital effecting real economic activity, location, and location of intellectual property, can possibly lead to a different outcome.

Now, in terms of U.S. debates, one of the things that happens as soon as you deal with the issue of what to do in corporate taxation is you confront at least three issues. The first issue is Larry Summers. "We just need more revenue." I'm a very good economist, Larry Summers would say. I'm a great economist. I know corporate taxes are really distortionary to growth, but I'm sorry, I need the revenues. Okay? So, that is the starting point here of a lot of the discussions. And the estimates are that if you just start with reducing the statutory rate, it does cost some money. When we did the PERAB estimate a couple years ago, it was that every percentage point reduction in the corporate tax rate would cost $120 billion over 10 years. That number has come down a little bit. The current estimate is more like $110, but it's pricey when you're dealing with sequesters and cutting social security benefits and all the rest. Really? You're going to be willing to give up that amount of revenue for a reduction in the corporate tax rate? Very hard to do.

A second thing which really didn't come up today much at all except in Damon's comments, and it's always right the second point. The second point in any discussion of corporate tax policy is distributional concerns. It's distribution of income. So, the other thing that's happened in the United States as we've been buffeted around by globalization and technological change and major changes in our budgetary outlook is our distribution of income has become more and more and more unequal. And we do have one of the most unequal distributions of income in the developed world today, and we have one of the least sort of mobility indices in terms of intergenerational mobility of the developed world today. So, whenever you raise corporate taxes, if you go to the Hamilton Project 15 sort of indicators of tax policy, one of the things they say is look, if you want to reduce the statutory rate in corporate taxation, it's going to have a hell of a negative effect on the distributional concerns. So, to the extent that matters to you, you need to worry about it.

So, you can see, you've got two big barriers to getting a significant reduction in corporate tax rates. One is we need revenue. Two is it looks bad from a distributional point of view. And three, of course, as you heard today, there are huge vested interests involved here. So, the truth of the matter is, as the PERAB Report says, and as the President's business framework -- and by the way, the taxation and framework issue (inaudible) Damon was not a corporate tax framework. It was a business tax framework, and basically they said things like we really have to go after S-Corps. We really have to do this. We can't possibly finance anything significant here through dealing with corporate tax expenditures, particularly since Obama said, and I support this, we want to increase and make more generous the R&D tax credit. Well, that takes one corporate tax expenditure right off the table. He then says we want to refocus but strengthen 199. Well, that takes another one off the table.

He says, well, we'll deal with accelerated depreciation, but he doesn't say much about it other than saying we needed to worry about it. Now some people have taken that as an interpretation, let's get rid of accelerated depreciation, but that doesn't get you nearly enough to get to the rate that he has proposed getting to. Okay? Maybe accelerated depreciation, I think, gets you less than a 4 percent point decline, so you're left with a whole bunch of other space.

So, you're going to have to go after S-Corps. Well, we haven't had a lot of luck with going after carried interest, and I believe a lot of S-Corp. income is in large organizations which may actually be paying themselves, in part, through carried interest. I don't think so. I'm a little worried about this as a solution.

And then, of course, going after interest deductibility. So, we know we have this wildly different treatment of equity financing and debt financing. We know that over the past 30 years this has not been a good thing to do. It has increased leverage. It's increased risk. It's led to increased bankruptcy incidents. It's crazy. It's crazy to have a negative tax rate associated with debt financing, and a significant causative tax rate associated with equity financing. Do I think we are going to be able to solve this problem politically? Well, I'm concerned about it, let me put it that way. So, there are serious issues to actually getting a significant reduction in the corporate tax rate, right? Let me just say possible. I think it's the right thing to do.

I disagree with Damon. I think that if had my druthers -- here

I'm really sort of summarizing a lot of what I was going to say in slightly different order based on what you've heard already. I would actually do as much as possible to get rid of the corporate tax rate and to substitute raising taxes in another way, so I am very taken with the idea that Don Marron and others have worked on.

There was a very good paper that a woman named Adele Morris did for the Hamilton Project just last week. She's here at Brookings, I think. She did a wonderful proposal for a carbon tax that the first lines of revenues would be used for a, I think, 7-percentage-point reduction in the corporate income tax. And at the same point, there would still be revenues left over for deficit reduction. There would still be revenues left over to offset any distributional concerns on low-income families for a higher cost of energy. This is like at least a two-for policy. It may be a three-for or four-for policy.

Two-for -- we have to deal with climate change. We have to. And sooner or later, and I'm afraid it's sooner now, we're going to have to deal with that. And a carbon tax is a very powerful way to do that. It is also a huge revenue generator, and it can be used to help reduce the corporate income tax rate. I would be all in favor of that kind of tradeoff.

A second possibility, and I don't know where Eric is in the room here, but I actually like the paper very much. Another TPC proposal that -- and other countries have moved in this direction. So, a number of the OECD countries that actually reduced their corporate tax rate, how did they pay for the lost revenue? Well, they did some base broadening, so a lot of them said relative to mobile capital around the world, accelerated depreciation doesn't matter that much. And that's not what drives these mobility decisions. What drives the mobility decisions are the rates. So, I am going to reduce the rate because I'm competing for keeping my domestic companies at home, competing for foreign companies to come to me. I need to make up some of the revenue from a lower rate. I'm going to make it up partly through making my depreciation allowances less generous. So, that was one thing other countries have done.

But another thing they've done is they've said, "All right, we're going to reduce the tax on the corporate entity." That income is highly mobile and can, in a variety of ways that humans can barely understand -- there are only a few people in the world that understand what you heard today -- (laughter) can move that income to the most attractive tax location. You can't do that with shareholder income. Actually, the OECD has gone after this issue. We actually now have much better transparency around tax havens, much better reporting requirements on interest income, and any kind of capital income, so that national tax authorities can follow their resident shareholders around the world and say, "Ah, you got some corporate income coming to you in terms of dividends and shares. We're going to tax that. And we're going to tax that a higher rate." So, the U.S. has been going, as Eric and his colleagues observed, we were going in the opposite direction. We were raising the rates on the corporations that are mobile.

And by the way, U.S. companies -- it's surprising that we did this, historically speaking, because U.S. companies led the charge in being global development around the world. They were the ones that went out first and established major FDI beachheads and subsidiaries and marketing organizations. They were the big players, and then we actually inadvertently, I think, at least I hope, raised the statutory rate, and unfortunately the last time the corporate statutory rate was raised was under Bill Clinton, so I have to note that.

And I was out of government by the time the check-the-box stuff came up. I don't even know how it came up, but the point is we actually took a trend and accelerated it. We encouraged mobile capital to be mobile. We didn't need to do that.

So, other countries, recognizing that this was going on, actually did start aggressively cutting rates. They aggressively cut rates while we just sat there with our rate. There it was. We weren't budging. We'd moved it up a little bit and we were sticking to it. And other countries aggressively moved rates, and indeed there has been a competition for mobile capital, no doubt about it. And particularly for the really attractive kinds of mobile capital, that which is intangible intellectual property, cheap to maintain. You just put it there, and then you generate some revenue from it. You want to get R&D activity going on in your environment because you know that there are wonderful spillover effects from locating it in your environment.

So basically, the rest of the countries, the developed countries to the emerging-market countries figured this out and started to compete, and we chose not to compete on those grounds. We chose not to compete on those grounds, and I think you could fairly -- one way to describe that is it's been a race to the bottom. That is a way to describe that. Another way is to say it's been a competitive race which now, if I go to the G20/OECD point, countries are now figuring out, "Oh, my goodness. By having these very low rates and having territorial systems, there really is very serious base erosion going on. It's going on even more than we thought. There are even more ways to do this than we thought. We're going to have to come up with another solution." So, each country that has reduced the rate and introduced territoriality has put in its own particular base-erosion means. We heard about one today. It was alluded to in terms of how Japan does it. But they're leaky. They're leaky, and therefore there is a consideration going on of can there be something more common like, as I said, some kind of minimum attached to a tax haven, you have to do some real economic activity in the place in order to get the reduced rate, that sort of thing. So, maybe we'll see something there.

I wanted to mention some of the tax expenditures in the corporate sector because they're very related to what the topic of this morning was. First of all, I want to agree completely with Bob Atkinson. I was going to say myself, economists use the word "distortion" when a lot of us would mean an intended goal, a strategic preference. Someone decided that R&D was a good thing to do, and therefore supported it. Is that a distortion? No, it's not a distortion. It's just a decision. You could then go and say, "Do we want to support that goal anymore?" No. "Is this an efficient way to support it?" No. Those are the right questions.

We decided years ago, and it's very clear in Obama's tax document, and it's very clear in the behavior of our country to support massively construction in residential housing. We have a much higher investment rate in that compared to other countries than we do in corporate investment.

In fact, we have a relatively low corporate investment rate in the United States. Well, we made that decision. Maybe we want to rethink that decision. So, maybe we actually want to distort, to use an economist's phrase -- I would not put it that way -- we want to think about if there's a preference for manufacturing production in the United States, is a tax deduction that we have a defective way to do it? So, I do agree that distortion is a pejorative term, and that we should think, again, about what it is we want to achieve, which brings me to my concern about -- so, last night there was a general consensus that, I think, maybe it was Bob or Eric said up here, that right now the odds for a revenue-neutral corporate tax reform in the United States are about as good as they've ever been. I don't really like the concept of revenue-neutral corporate tax reform. Corporate, okay? Maybe business tax reform, but then you get to my S-Corp. problem and my interest deduction problem.

But for reasons that I've mentioned earlier, I think corporate taxation is something we should try to move away from as much as we possibly can. So, I don't really like the idea of a revenue-neutral tax reform because I actually think the R&D tax credit is a tax credit which has been proven time and again, and I reviewed the studies a couple a years ago for the Center for American Progress, to be an effective policy. It could be tweaked to be improved, but it is effective. It is no longer as competitive as it once was because as Robert has pointed out in the work of his foundation, the U.S. on many dimensions is not as supportive of its research-intensive activities as it once was on a comparative basis. So, I don't want to endanger the R&D tax credit at all.

On the manufacturing production deduction, I think that the Obama team got it right. We need to refocus it. I've heard one percentage this morning was 83 percent of the activities getting it are tradable. Yeah, but I think only about 60 percent of them are manufacturing, so we have to say is it well targeted?

I'm conscious of the notion that was also raised up here that administration of taxes is very difficult, and by the way, I was really struck by a very small point that, really, think about this. We're dealing with global companies. They're locating their activities all around the world. Any one of us, most of us in this room, lawyers, economists, could get on a business flight, go over and talk to these people about what they're doing. An IRS couldn't do that. So, basically, we're not even supporting the administration of the rules that we have, so I do worry very much about what I say. I think we should have a strength in manufacturing production deduction. I am very sympathetic to the notion of how do you enforce that. So, I don't want to say that I don't realize that.

So, I want to keep R&D. I want to refocus but maintain the production deduction, so I'm left with accelerated depreciation. Well, I'm going to get to deferral in a minute, but if we take accelerated depreciation as one of them -- I've already mentioned that one of the things here, maybe that is something to go after a bit. Now, it goes exactly the opposite view, expensing everything up front. But there is some evidence that a number of tax experts, much more expert than I, have put together to suggest that from a company mobile capital point of view, differences in statutory rates are the major driver of decisions, particularly when you're dealing with large discontinuous investment decisions where you expect to earn very large, supra-normal profits. These are not marginal decisions. These are very big either/or decisions. Differences in statutory rates matter a lot to those decisions.

Expensing decisions really don't matter very much, so maybe there's a way to get some money from accelerated depreciation. As I said, that could raise, maybe -- I just looked at the numbers here, but maybe could reduce the corporate tax rate if you eliminated it by up to 3 percentage points. The Joint Tax Committee says up to 4 percentage points, in that range. But even as I said, that's not enough. If you put aside R&D, and you've put aside manufacturing deduction, and all you're dealing with is expensing and accelerated depreciation, you can't get enough.

I want to say a little bit about the S-Corp. I've talked about it before, but it is true, and this is something where I would say to Damon and his concerns about Busasis. I believe that corporations as a share of taxes -- taxes share of GDP has been roughly constant over time, low, constant. It's one of the lowest in the OECD countries, despite having the highest statutory rates. We have one of the lowest corporate income revenue shares of GDP, so that kind of suggests something. We're not doing this too well.

But a major difference here is that we have a much larger share of our business income coming through the non-corporate sector. I mean, a lot of tax experts say if you advise a new company, you would basically say, “Why do you want to be a corporation? You have to have a compelling reason to be a corporation, otherwise don’t, because there’s so many changes in the rules which actually allow an S-Corp. to behave is most ways, particularly a large one, as a publicly traded corporation. You don’t have the governance issues. You don’t have the reporting issues. Yeah, maybe have the access to public capital markets, but I don’t think these large S-Corporations are having any trouble raising capital for themselves.

So, I ask myself why would you become a corporation? But the truth is, this is very, very different from the rest of the OECD world. It’s just very different. This is a distinctive thing that we have put in our system where we now have something like 80 percent of net business income is going through S-Corporations. And the other thing is we have really large S-Corporations, so the path through organizations in the other OECD countries tend to be relatively small. We’ve got these big things going, calling themselves S-Corps. So, I think that is an important thing to think about. I don’t know how we deal with that because you immediately get, and this is the other concern -- so, I have two concerns about the discussion of corporate tax reform right now.

One is the embrace of revenue neutrality, and then you say well where’s the revenue going to come from? And two is sometimes the discussion involves non-corporate forms and sometimes it doesn't, but if you're going to say we're going to break business tax reform from individual tax reform, you can't get to S-Corps. You're kind of done with the debate, so I worry a lot about this desire to break the two because I don't see how you then solve the problem.

So now, let me get to just some alternatives. I want to get to territoriality, but before that I just want to make sure I've gone through my list of alternatives. So, I said that I liked the idea of shifting from the corporate to the shareholders. I definitely do. Michael Graetz, another person who advises this group has said, "Cut the corporate tax rate and offset by an imposition of a corporate withholding tax on dividends and interest payments." So, it's not that they can do anything they want with the money. I mean, we've got to figure out a way that it doesn't just sort of sit there in the corporation. I agree with that. I think there are ways to deal with that. Shareholders don't want it to sit there either. They want to get dividends back. They're the ones that are complaining about all this offshore Apple income that they're not getting, so I think you could handle this, but I think it's important.

You could do another Graetz proposal, a Toder proposal, a TPC proposal. A VAT could clearly finance a significant -- you don't even have a big one. Michael Graetz has 4.5 percent VAT, reduces corporate tax rate from 35 to 20 percent. I talked about the carbon tax proposal at

Hamilton.

How about Milton Friedman's favorite tax? Milton Friedman's favorite tax, a progressive consumption tax. You could get a lot of progressivity there, a lot of savings effect there, a lot of revenue there.

How about one that I've never really understood, but I understand my colleague enough to know it's a really good idea. He's not here today --Alan Auerbach. Destination-based business cash-flow tax, okay? His proposal would allow immediate expensing, eliminating all net new tax on investments, and would remove the corporate incentive to shift profits abroad because they would all be destination based. It's all destination based. Now, his proposal is very complicated. I don't understand it completely, but I think he's onto something here in terms of business cash flow, destination based. His problem is going to be WTO compatibility, but nonetheless, why don't we look at it?

Hey, a new one I'm just going to throw out there. We don't know what's going to happen with it. Financial transactions tax. Okay? The EU is going in that direction. That can raise a significant amount of revenue. Do you want to move that into manufacturing? Do you want to -- interesting question.

Okay, I am just going to end with a few observations on territoriality which is separate from the rate, but is obviously a very charged issue in the United States right now among people who even understand what territoriality is, which I will confess at the beginning of the PERAB, I did not. So, now I completely do. The truth of the matter is that people who worry about territoriality -- so the U.S. system, which basically, essentially, says to corporations using all of the very sophisticated methodology you've seen here today, okay, if you earn income outside the United States, as long as you don't repatriate it, we won't subject it to additional U.S. tax. You're going to get the tax credit. You know, if you ever bring it back you're going to get the tax credit relative to taxes you paid abroad. But if you bring it back right now in the U.S., if you're stupid enough to do that, if you have to do that, if you're a capital-constrained firm and you need the money, you have to bring it back, well, you're going to pay the additional U.S. tax. Okay?

But most companies are not in that position. They don't need to bring it back and they don't. So, there are certain negatives to this. Significantly, the system is playing like a defacto territorial system. To any company that can manage to adjust its earnings around the world and all the way as you saw this morning, and keep its earnings out, they are essentially playing a territorial game. They don't have to pay the U.S. tax as long as they don't bring the money back.

Now, the disadvantages to the current system? Well, unlike a simple territorial system, it's extremely complex and costly to administer. But it turns out, territorial systems are, too, because that's what our fellow countries in the OECD that have gone to territorial systems have realized. Oh, my God, there are all these anti -- a territorial system really does increase at the margin the incentive to move income, and when sensible, activity to low-tax locations. It increases that incentive. There's no doubt about that. That's what economists say. That seems to be true. So, they're trying everything to sort of deal with that base-erosion problem. Okay?

We already have it because we have a de facto territorial system, so we have the same -- they have a base erosion problem which is a little more advanced than ours, maybe. I don't know.

But here's what we currently have. We have a system where all of that, a significant amount of those profits that Damon mentioned, all those wonderful cash balances you hear about that U.S. companies are holding, they're not here. They're not here. They're not available for use here.

Now, people have looked at the repatriation tax holiday from 2004 and 2005 and said "Well, we don't want it here anyway because when the companies bring it back, they pay it out in dividends, and they give it to their shareholders." Yeah, and what do their shareholders do with that money? Do they do nothing? Do they put it under the mattress? Is that the end of the story? We mostly think in other macro thinking that something that lifts the value of a stock or something that increases a dividend payout to an investor or consumer might have positive effects on economic activity.

But our sense of the repatriation holiday, which I think is wrong by the way, is that the money just went to shareholders, so nothing good must have happened, and that isn't right. That isn't right. Actually shareholders put the money to work in terms of consumption, and they put the money to work in terms of investment and re-allocating their portfolios, and actually I have done work to suggest that the repatriation tax holiday -- all that unexpected money that came back, and it was unexpected in terms of magnitude, actually was put to purpose that benefited the economy, not exactly the way the writers of the law thought, but benefited the economy.

So, right now all that money is just locked out. It's not here. It's not available, and second thing, of course, is it's not being taxed in any way. Hey, if it was given to dividend holders right now, we got a higher dividend tax rate. We could actually get some money from that. If it comes back with some tax so that not all of it is exempt, there's going to be some corporate tax revenue from that too. So, right now none of those revenue streams that might be associated with that growing amount of assets in nature of -- Peter probably knows better than I -- a couple trillion now, we could be getting some revenues from it.

And then the last thing is the incentive effects or the costs to the firms from the lockout, because not all of -- it's costly to do the lockout. Here's some things you might do. You keep your cash abroad, and then you borrow because you can't use that cash abroad to invest in certain things in the United States, so you borrow. That changes your debt ratio. That changes your balance sheet. That changes, over time, your rating. That changes how your shareholders feel about you. Your shareholders get mad at you because you're not paying dividends, and all that cash is sitting abroad.

There are now more examples than one would like to know, that companies really are sitting there with this cash, and as it accumulates, basically making investments abroad that probably they would not make in the United States because they don't meet their kind of rate of return estimate in the United States. But they made it abroad because to bring it back in the United States, you'd have to pay the rate of return high enough to pay the tax, so invest in a lower return.

So, in a recent study, Rozanne Aushheiler and Rubert estimated that perhaps the cost to the firms themselves from holding these assets, this cash abroad, is about 5 percent of the earnings. Well, as these numbers get larger and larger, that's a big cost. That's an inefficiency cost on the system, a lockout cost on the firm that would disappear if we moved to a territorial system. So, I am actually in favor of moving to a territorial system.

So, here I am. Damon's, I think, gone, but he would not be surprised for me to say at the end, I would like to get rid of the corporate tax. That's probably not going to happen. I would like to get a significant reduction in the corporate tax without undermining in any way the corporate expenditures that actually have been proven to have an effect, and particularly manufacturing production deduction and R&D. I'm open-minded about what to do on accelerated depreciation. I would like to get moved to a territorial system with learning from the experiences of some of our competitors about anti-base erosion. I would like to work with our competitors on the harmonization of rules, and I would like to think about a simple minimum tax solution, which might be part of the harmonization of rules outcome. Thank you. (Applause) I'm happy to answer questions. We've gone a little over time, but I'm happy to answer questions if -- yes, back there.

MR. NUTTING: Andrew Nutting at the University of Idaho. In your article in the program you discussed that the manufacturing wage premium had declined. Are there any reasons to think that decline has stabilized, or if it's going to continue on for a time? And if so, what would that matter towards (inaudible)?

MS. TYSON: So, I had an article. So, one of the things I should say, my longer history in this set of issues is I once was involved in the Berkeley Round Table on the International Economy. My colleagues wrote a book on why manufacturing matters. I want to say one of the embrace of manufacturing in the Clinton White House today should not be divorced from Bill Clinton himself embracing those ideas back in 1992 and saying “Manufacturing Matters,” and we need to worry about it.

The issue for manufacturing wages, I think is -- you heard a little bit about it today when Damon made the point. There is some evidence now that there’s some re-shoring going on in the United States, but if you actually look at the wage levels of the re-shored jobs, they are at the wage levels that we once saw in U.S. manufacturing, and I think what you would say is a couple things. You’d say, number one, there’s more competition. There’s more competition and to the extent Larry Summers -- another paper Larry Summers wrote years ago, was the concept of rent sharing, and that if you’re in a sector where there’s a lot of rent, a lot of supra-normal profits, that will show up in higher than average wages. Well, that was the case in U.S. manufacturing when the U.S. was way ahead. The U.S. has actually, in many sectors, lost out relatively, not absolutely, to competition. That drives down the return. That drives down the wages. That’s one thing.

But a second thing going on here, and this is not understood, really. Damon mentioned that profits are, as a share of national income, at near all-time high, and the wage share is at near an all-time low. There is a growing gap, and it’s large, between the productivity growth of workers and the growth of the wages, or the growth of their compensation including benefits, all in. There's a growing gap there. I can have several hours on why that's the case, but the point is that part of the compression of the manufacturing premium is more competition, and part of it has to be why is it the case that more of the productivity gains in manufacturing are not going to workers? I'm afraid, I think, the answer lies in technology, so I would go to the book *Race Against the Machine*, and you can sort of see that the machine itself is actually undermining a lot of middle-income wages. Yes?

MS. WIRTH: I'm Mitzi Wirth. I'm with the Naval Post Graduate School. So, as we look into the future, what do we do about 3-D printing and manufacturing? I was at a session last week where someone from the Transportation Association said when we really get into 3-D printing, we won't be needed because we won't be shipping things across the oceans.

MS. TYSON: I'm afraid, Mitzi, I don't quite know the answer to this because I've been in two conversations lately about this, and one says the pace of this is much -- it's the ability of 3-D printing to do things like major pieces of machinery is highly limited and not likely to occur very fast. So, there is that. On the other hand, if you read the *Race against the Machine* book, what you realize is that again and again we've underestimated the speed of the technology to be deployed, and so computers are doing things today that we didn't think they could do a year ago. So, right now we think, well, these computer-aided machines for manufacturing can only do certain kinds of inputs, not other kinds. I think this is a huge issue which is beyond the scope of this, which is what do we do? How do we organize our society? How do we organize work? How do we organize rewards as technology, basically -- it drives up the skills of certain kinds of workers and substitutes from most workers. That's a big, big issue I don't have an answer to. Yes?

MR. MALOY: I'm Pat Maloy. I'm a trade lawyer, but I teach at Catholic University Law School, and a few years ago I was part of a group set up by the Democratic Policy Committee of the Senate. Rob was on the same group. Something called the Horizon Project, and one of the recommendations there, thinking that the trade deficit is partially due to the outsourcing of production and importing back, was that we provide a lower tax to companies on profits produced in the United States, and a higher tax if you're earning your profits by producing abroad. And that would encourage production in the United States and reduce the trade deficit.

MS. TYSON: So, I have two reactions to that. I didn't see the proposal. One is I've been struck over time, and a number of people in this room have worked on this, on the point that there is, again and again, there is complementarity between what a company does abroad and what it does at home. Now, that doesn't mean complimentary in terms of the same jobs or even the same number of jobs. It means that the U.S. manufacturing base may actually be stronger today, probably is stronger today because of outsourcing than not. So, therefore, if you do something like this, you're actually making the U.S.-based manufacturing activities -- you're putting them at a competitive disadvantage because it's more costly for them to do outsourcing. So, that's one thing you have to deal with here, which is that outsourcing has, while it's almost certainly been bad for U.S. employment, has not necessarily been bad for U.S. manufacturing as a share of GDP. That would be, I guess, my main point in that regard.

The second thing I would say is that a lot of those charts show this very dramatic thing that happened around the early 2000s. So, I think we have to look at Rob's work because he's trying to show us that -- actually if you look at where the manufacturing employment losses were the greatest, you will see one surprise, and then some no surprises. The no surprises are labor-intensive activities, so with China's entry to the WTO, with the elimination of reduction of trade barriers and elimination of risk of outsourcing to China, there was a massive movement of labor intensive things to China as you would expect. And the law of comparative advantage would say, terrific, the U.S. was better off from that, and we're left with all the transition costs which turn out to be substantial.

There's an MIT study that's coming out, and actually David Altor's already done work on this to say, you know, when you think about all those wonderful labor-intensive things we lost for comparative advantage reasons, we didn't try to measure the very substantial local and even state-level cost associated with that loss. That was a big, big cost saving.

But then, the other surprising thing here is, of course, the computer industry itself because you wouldn't have expected it to be so dramatic and so significant to what happened to employment and trade. So, maybe the right way to think about this to look again at sectors and to think about what was going on it the sectors themselves.

So, one of the famous comments that was reported by Steve Jobs to President Obama very shortly before Steve died was, "I can't bring these jobs back because there are no people to do them in the United States." Now, actually what he was talking about was not that nobody in the United States wanted a (inaudible) job. That's not what he was talking about. He was talking about we don't have enough process engineers to run these systems. These are huge-scale process-engineering jobs, and we weren't training such people, so maybe we can train such people in the future if we bring them back. Okay? All right, great. Thank you all very much. (Applause)

MR. SAMUELS: So, you can see what a quick study Laura is. This 3 years in tax and she knows as much as any of us, more than most of us. I'd just like to ask you to join me in thanking again Bill Gale from Brookings and Peter Merrill of the ITPF and all of our moderators and panelists for the work they did on this very important subject. It's a conversation that I think is going to continue and is very important to the welfare of our country. So, thanks for coming and participating. (Applause)

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