Unedited Transcript

Conference: Making Sense of the Productivity Slowdown

Keynote Address: Reflections on the Productivity Slowdown
Lawrence H. Summers, Harvard University

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Adam Posen: Good afternoon ladies and gentlemen. If we could reconvene - We have an overflow house today for good reason, particularly at lunch given our luncheon speaker. It's my privilege to welcome back to the Peterson Institute for National Economics, Lawrence H. Summers, the honorable Lawrence H. Summers who of course is Charles W. Elliot University professor and President Emeritus of Harvard University.

During the past two decades, Larry has served a series of senior policy positions in Washington D.C., including as the 71st Secretary of the Treasury for President Clinton, Director of the National Economic Council of President Obama, the Vice President of Development Economics and the Chief Economist at the World Bank.

I can read off his incredible academic accomplishments prior and, in fact, during those periods. What I would like to emphasize is two-fold: First, Larry consented after leaving government to become a member of the executive committee of the Board of Directors of the Peterson Institute which means he is one of the people who determines how we stay open and whether what we do is good enough.

Larry has given us huge guidance on what our agendas should include and helped us to be a magnet for some of the best people in the field and we're grateful to him for his continued service to the institute. We honored him as best we could with our biggest honor which is the Annual Stavros Niarchos Foundation lecture which he gave now more than a decade ago in 2004 and he generously also participated when my predecessor Fred Bergsten gave it a couple of years ago with some memorable remarks on ever weakening exchange rates.

We're substantively faced versus today's topic. I've sort of hijacked Larry to come in to a productivity conference. We all know Larry can talk intelligently about any macro-economic theme but in particular, I'm asking him to make a bridge to two things that he has clearly motivated a public debate in a huge way.

The first of course, is his speech or remarks that became later a paper and a speech at the IMF Annual research conference two years ago, which prompted the re-initiation of the concept of secular stagnation. That is obviously a demand-based concept as Larry is going to [inaudible 00:02:28] the point out and has to do with the appropriate match or rate and the amount of stimulus, but it also has something to say about our concerns about a productivity slowdown and sorting out the right policy response to cyclical from the structural.

In addition, he has co-authored just recently with our newest senior fellow Olivier Blanchard who is on the other side of the world today giving a speech on productivity, unfortunately. A new working paper which we've distributed and is available on the website which further tries to unpack today's data through the insights that he and Olivier started more than 20 years ago on the subject of hysteresis looking at European labor markets, the transition of temporary recessions into permanent damage.

Again, this is not productivity per se but it is where the rubber meets the road for many of us in understanding and deciphering what's really happening to the world's major economies and for that, we're all very lucky to have Larry Summers to speak to us today. Thank you, Larry.

Larry Summers: Adam, thank you for those generous words in introducing me. You remind me since one of the duties of the Executive Committee of the Peterson Institute is to choose the Director of The Peterson Institute and to set the compensation of the Director of the Peterson Institute

You remind me of an experience I had when I was the Secretary of the Treasury, I was asked to introduce Bill Clinton at the IMF meetings one year, and so as you might expect, I worked very hard to prepare an introduction extolling President's Clinton's financial virtues and I delivered as best I could this introduction. And the President came up and he put this big arm around me and he said: "Larry, you have just illustrated one of my first laws of political life--whenever possible, be introduced by someone who you appointed to higher office."

And so, it is a pleasure to be introduced by you and let me say that it is the mark of really great institutions that they have great founders and that when the founder moves on, they continue to be splendidly led. And with Fred Bergsten and Adam Posen, I believe that is the case with respect to the Peterson Institute.

This is a bit of an Admiral Stockdale moment for me. I'd like to thank about a fair number of [inaudible 0:05:24] of Economics, total factor productivity and its various decompositions and so forth is not actually an

area of Economics in which I have ever worked. And so I'm not entirely sure what I am doing here. But those of you who know me will recognize that mere ignorance is not sufficient bar to attempting to offer some provocative observations.

So, I want to make three points. I want to discuss three things this morning: First, I want to talk to you about what is to me, the big puzzle in all of this, having to do with the fairly compelling evidence of productivity slowdown and what seems to me to be the equally compelling evidence of substantial dis-employment effects in the economy.

Second, I want to discuss the question of mismeasurement and its likely validity and also the consequences of accepting a mismeasurement view for our economy. And third, I want to argue that the traditional oppositional pairing of supply side secular stagnation and demand side secular stagnation is more of a confusion, than a truth.

So let me take those three points in turn. A clear aspect of economic reality in the United States certainly and probably throughout the industrialized world is that there has been substantial dis-employment of relatively unskilled workers. If you looked in 1965, 19 out of 20 men between the ages of 25 and 54 were working. If you look today, that number is more like 17 out of 20 even as we approach a business cycle peak. Or to put it differently, the rate of non-employment has tripled. To put the same, essentially the same point in a different way, if you are a 47 years old male in the United States, you are more likely to be on disability insurance than you are to be doing production work in manufacturing.

And it has recently been pointed out; this is associated with the whole range of maladies that find their expression most clearly in the absence of any progress in life expectancy for middle-aged men. It also finds its expression in a very substantial decline in the relative wage particularly of men with less skill and indeed the non-employment of men with less skill.

Economists will debate the extent to which this is the result of globalization and is the result of technological change. The fact that there are 20 million fewer manufacturing workers in China than they were in 1995, despite China's remarkable improvement in competitiveness makes me very skeptical that it is all sensibly attributed to globalization and that technology can be dismissed.

Without believing that the era of The Jetsons has already come, it seems hard to believe that the fact that you move through an airport with much less contact with ticket takers, the fact that you can carry on all kinds of transactions with your cellphone, the fact that you can check out of an increasing number of stores without human contact, the fact that robots are

increasingly present in manufacturing, all it seems to me makes a fairly compelling case that it is hard to think about what is a major development in our economy, increasing dis-employment without thinking about technical change.

And yet, if technical change is a major source of dis-employment, it is hard to see how it could be a major source of dis-employment without also being a major source of productivity improvement. In part, if the technology is replacing people that means that productivity should be expected to go up at least if you measure simple labor productivity. And if more of that is happening than used to be happening, then you would expect productivity to be rising more rapidly than it used to be rising.

There is the further wonkier, but not that wonky observation that if the lower tail of the workforce is increasingly not working, than if you remove the least productive people, the average productivity of those who remain should be increasing. So, I think, the largest thing that I do not understand in this area, is how to square the "new economy is producing substantial dis-employment" view, with the "productivity growth is slowing" view.

Now, one line of argument that tends to come to mind, I've at least tentatively decided is wrong, that is there are a whole set of arguments that take the form of, and people always cite Paul David on electricity to make the case for them, which is that the technologies take a long time to show up in productivity and that's because it takes a lot of people and it takes a lot of work and a lot of effort to install the technologies.

That's fine if what you want to explain is why technology doesn't increase productivity. It is not fine to explain why there is dis-employment without productivity growth because if it takes all those people to – if you have to like, continue to operate your old cash registers while you have a bunch of people who are installing your new cash registers and so that's why the spiffy cash registers aren't improving productivity, well then they shouldn't be associated with dis-employment either.

So, how one squares the technology and dis-employment view with the productivity view seems to me to be a very large question, which I have not seen reconciled to my satisfaction. Obviously, the nature of the potential explanations fall into three categories: It could be that there really isn't so much of a productivity slowdown once you measure things correctly. That's going to be my next topic. It could be that there really isn't a set of dis-employment events or if there are a set of dis-employment events, they are all being motivated on a the supply side or it could be that there's some aspect of all of these that I'm missing and some way of thinking about of a production function that will generate higher

productivity while at the same time will generate slower productivity growth while at the same time generating more dis-employment.

And I suspect there will be great rewards for the economist who's able to conceptualize the answer to the third question, that if this conference produces an answer to this question, that will I believe, be its greatest contribution and if people think they know the answer, I'm happy to engage during the discussion with anybody's proposed answer.

Second, I think it is at least possible that there are substantial mismeasurement aspects and that there is a reasonable prospect at accelerating mismeasurement as an explanation for some part of this puzzle. I do not base this judgment on calculations about the consumer surplus from Google or Facebook; I think those are important conceptual issues for measuring the welfare of the average citizen. I am not sure that they are important conceptual issues when quantified for measuring market GDP, as economists traditionally understand market GDP.

Rather, I am struck that there is likely what may well be an increase in unmeasured quality improvement. To take the first example that comes to mind and I'll do an experiment with this group. I've done this experiment with other groups – which would you rather have for you and your family, 1980 healthcare at 1980 prices or 2015 healthcare at 2015 prices? How many people would prefer 1980 healthcare at 1980 prices? How many people would prefer 2015 healthcare at 2015 prices?

There are a fair number of abstainers but your answer was pretty clear. What does that mean? That means that healthcare inflation was negative from 1980. That is very different than the 6% or so that is reflected in the national income accounts.

Now here's the next point. Healthcare as a share of GDP, has risen by 6 or 7 percentage points since 1980. And so if the share is 6% larger and the underestimate is 6%, just from that compositional change, you get between 3 and 4 tenths of a percent of GDP.

What's present in healthcare, I would suggest is to at least some degree, present in many other areas. You go to the store, there is much more variety in the store than there used to be. It really is easier going through the airport with my boarding pass on my cellphone than it used to be when I carried a ticket to a ticket counter, which was swapped for a boarding pass. That is something for which I, probably, more affluent in valuing time than the average person but I would happily pay 30% of the call or more accurately, I would happily have the Peterson Institute pay. But even if I was to pay, 40% of the price of my Boston-Washington ticket, to have the extra convenience associated with the way we travel now.

As we move from tangible manufactured goods to intangible services, it seems to me plausible that the fraction of the economy where we're doing really badly on quality is likely to be increasing and that means that mismeasurement is increasing. Here's another way of seeing the same point. It is a staple of political rhetoric and a fair amount of economists' rhetoric, to observe that the median family income in the United States in real terms is the same as it was in 1973 and that's a calculation from the median family income in dollar terms, which is measured accurately and the price index.

So here's another set of facts. If you compare the under the poverty line population today with the median family in 1973, they're more likely to have a television set, more likely to have a colored television set, more likely to have individual bedrooms for their kids, have substantially more square feet per capita, are much more likely to have air-conditioning, are far more likely to own a car. And I could rattle off a set of further indicators.

And remember, that's a comparison of the sub-poverty line population today with the middle income population in 1973 and the poverty line is about 40 % of the median income. That too, suggests that the price indices are substantially overstating the properly measured rate of inflation.

Suppose we were to take the view that the price indices overstate the rate of inflation by a percentage point a year and that a substantial part of that is new relative to what used to be the case, how does that change our view of the world?

Well it means that we have significantly less of a productivity slowdown to account for. It means we have more GDP growth than we did traditionally. It means that we have much less inflation than we thought we did. If you think there is mismeasured productivity growth – so if you think the people who say, you know, there is a line of thought that likes to say: "Well, GDP growth's been slow but that doesn't really mean much because the labor market is tight and so maybe the GDP growth has been mismeasured." If you want to go down that line of argument, you have to say: "Well the inflation rate is 1 percentage point less than we thought we are." And that those raise a question which is if the inflation rate is 1% less than we are measuring it, why would we be thinking about tightening monetary policy?

And so if you take mismeasurement as a hypothesis seriously, you have to take its consequence for inflation seriously and that is a consequential judgment about macro – about macroeconomic policy. And also, to be fair has an implication for views that I and others have expressed about secular

stagnation, at one level you can say, well real interest rates really aren't that low once you subtract inflation. Once you subtract properly measured inflation, there has been less of a decline in real interest rates than we thought. That's one way of looking at it.

Another way of looking at it is if you're trying to figure out whether we're ever going to see 2% as the intercept of the Taylor rule again. If you think we now have substantial mismeasurement, more substantial than we did before, then that is a reason to think that the real interest rate as measured would, by our statistics, will systematically be lower in the context of TIPS or in the context of other ways of constructing, measures of ex-ante real interest rates.

So I think it's plausible that there is mismeasurement, I think the case, just to be clear – I think the case that there is mismeasurement is overwhelming. I think I could go on about this at length. I think it's almost impossible to disagree with the view that the price indices overstate inflation and therefore the quantity indices understate quantitative growth. I think it is significantly more contestable whether that process has accelerated or not, but I don't find myself with an alternative way of thinking about the dis-employment through technology which seems to be a pervasive phenomenon and that leads me to assign more weight to the mismeasurement hypotheses than I otherwise would.

Third observation: it seems to me that demand side secular stagnation, supplies side secular stagnation and hysteresis are all very closely related phenomena and that there must be something going on amidst all of that.

Notice first that if you had supply side secular stagnation, it would likely have, as a consequence, pressure towards demand side secular stagnation, not as some critics point out, because of the consumption Euler equation. I was writing papers in 1983, saying that the consumption Euler equation was nonsense and it has not influenced my thoughts ever since. Rather, the much simpler minded and traditional argument that if income is growing less rapidly, the accelerator means there will be less investment demand and with the accelerator meaning there will be less investment demand, natural equilibrium levels of interest rates will tend to be lower. That is surely the case for a declining labor force.

So supply side secular stagnation is likely to lead to or induce pressures towards demand side secular stagnation. Conversely, demand side secular stagnation is likely to reduce at least productivity growth simply by reducing capital accumulation to a substantial extent. And if one believes as it seems to me one has to, that firms engage in a substantial amount of what is in fact investment activity, meaning, activity where money is spent today, in return for rewards in the future, not all of which shows up as

investment in the accounts, then it stands to reason that that type of expenditure will tend to fluctuate with the type of investment expenditure we measure. And so one has a channel through which slow growth would be likely to lead to reduced total factor productivity growth as well.

How important are these effects? I think the research Olivier Blanchard and I have done, represents at least a reasonable first pass at the problem along with work I've done with other collaborators.

Here's what I think is pretty clear and then I'll tell you where there's more room for argument.

I think it is pretty hard to escape the conclusion that contrary to the implication of simple textbook macroeconomic models. When a recession happens in 2020, a sensible person's view is the GDP in 2028 will be significantly lower than it would have been without that recession. You can see that, if you like time series econometrics. You can see that as the observation that GDP has a unit root. If you believe that official forecasters have practical good wisdom, you can see that by studying CBO forecasts which embody that same idea, that whenever GDP goes down, somehow CBO is deciding the potential GDP has gone down as well though they often see other reasons for the decline in potential GDP. There is an eerie overlap between the at performance of the actual GDP and the judgments about future potential GDP, or you can see what Blanchard and I have documented looking essentially at all the recessions in the OECD since the 1960s, which is most of the time what happens is that the level of GDP is lower 5 to 10 years later than any sensible trend forecasting exercise before the recession could have predicted. Well that's the baseline case. Reversion back to trend is actually less common than evidence that the recession not only reduces the level of GDP, but reduces the trend rate of growth of GDP, what Larry Ball has referred to as super hysteresis

I think it will be hard to massage the data away from the conclusion that when there are recessions, subsequent output growth is lower. The question is, is the relationship best thought of as causal. After all, if productivity slowed down, you might expect investment to slow down, you might expect the stock market to go down. And so, if events were happening that were reducing the underlying rate of growth, and people came to realize that those events were happening, you might expect the economy to go into recession.

And so the question where there's certainly much more room for argument is whether the relationships I described are causal. And here, there's no God's truth. We don't get to contrive recessions to do a controlled experiment on the question. Blanchard and I do what I think is the sensible

way to approach the question, which is we look at recessions with different causes. We look at recessions that are associated with tight money to reduce inflation. That seems like a relatively pure case of a demand side reduction. We look at recessions that follow the bursting of bubbles. We look at other recessions not associated with those kinds of events. We look at recessions associated with fiscal contractions. We look at recessions associated with credit contractions.

Separately, I have looked at declines and output associated with fiscal contractions and what has happened to potential GDP revisions in response to those contractions and I would say that a summary of that research is that economic logic is borne out the apparent hysteresis estimate from a demand side recession is lower than the apparent hysteresis estimate if you look at all recessions. That's what you'd expect – but not that much lower.

And so if you believe, that by looking at just this inflation recessions, you are doing a much better job of isolating the causality than you do by looking at all recessions, you'll find that there is still a very substantial amount of hysteresis present.

So I think the right presumption at this point is subject to a lot more checking and a lot more examination, and people using different statistical techniques, and people having other better more clever ideas for isolating causality is that the classic model of cyclical fluctuations, that assume that they take place around the given trend is not the right model to begin the study of business cycle. And that increasingly, the preoccupation of macroeconomics should be on lower frequency fluctuations that have consequences over long periods of time and the set of ideas around demand side secular stagnation which are motivated in part by the recent experience of the United States, and in part by the twenty five year experience of Japan, which I note was deemed to have gone into recession yet again yesterday seems to me to be an idea that deserves increasingly serious discussion in the time ahead.

Thank you very much.

Adam Posen: Yeah. Thank you very much, Larry. It was productive even if not entirely about productivity.

There we go. I don't want to hijack—we have so many good people in the room who I know want to respond to your comments, I just want to ask you two questions: First, your paper with Olivier and Eugenio Cerruti which we have on the website is available, is focused on the monetary policy side. And if, as you say, no matter what way gets us here, we are in a hysteresis situation, there is obviously some role for monetary policy and

your paper argues looking cross-sectionally that there is even a medium-term argument for putting more weight on output fluctuations than inflation fluctuations if you didn't know what your paper uncovers.

Could you say a bit more then, about where you think the Fed, the ECB, the Bank of Japan should be now and what do you think about places like, my friends in Japan, who seem to have been doing everything they could possibly do on the Quantitative Easing side and not getting as much traction as they would want. I mean, just because you say this is implications from monetary policy doesn't mean you think monetary policy is necessarily the best response. So, if you could say a few words about that.

Larry Summers: I am giving a lecture on Friday-

Adam Posen: Okay.

Larry Summers: - at the Bank of Chile's annual conference at which I plan to address the kind of question that you've asked at length.

Briefly, I have a kind of intermediate position on QE and negative interest rates and stuff. There are people who believe that these are artificial provisions of liquidity morphined to the economy that creates speculative bubbles that will be the death of us all. I do not share that view. There are others who believe that if the zero-bound is important then the obvious thing to do is to just find a way to let interest rates be negative or to let interest rates be lower whether that's Quantitative Easing that reduces term and risk premiums, whether that's moving to negative rates, whether that's locking in sufficiently committal forward guidance that people believe real rates are low and that that's all that needs to be done.

I am of a view that is in a sense intermediate. I believe that if the only game in town is monetary policy, the risks of excessive unemployment hardening in to structural non-employment and structural output losses exceed any risks associated with financial instability. And so, when the only game in town is monetary policy, I tend to be supportive of finding ways for monetary policy to be expansure.

But I take very seriously, unlike some of my friends who share that view, the ideas that sufficiently low rates - A, are of questionable efficacy in stimulating investment; B, the investment they stimulate is likely to be of dubious quality. After all, think about the investments you would do with a 1.5% tenure rate but you would not do with a 1% tenure rate, what is their likely quality to be?

I find the notion that that leads to excessive risk taking as people search for yield which promotes leverage which sets the stage for instability down the road to be a plausible one. And I have sympathy with the notion that asset price inflation is an exacerbater of inequality. And so it seems to me that getting one stimulus, not by driving the relevant interest rate down further, but by increasing the increasing the demand for capital or the propensity to spend on consumption at a given interest rate is the stronger and better way to respond to this problem. What the best way to do that will be is, I think, very much dependent on where one lives and what country one's talking about.

In the United States, Federal Net Infrastructure investment last year, was zero. That was the lowest level since 1947 and it was zero. That cannot possibly be rational at a time of epically low interest rates.

Just to say something new about it that I haven't said a hundred times before - the American Society for Civil Engineers estimates that - and this is massaging their estimates downwards to be conservative - that the damage to automobiles each year from unrepaired roads that could be repaired is the equivalent of a 40 cent a gallon gasoline tax. It is madness that we are not making those kinds of investments and it is even a higher order of madness that as best I can tell we are making no preparations to make them the next time we have a recession.

And here's the final thing I want to say about this. There are different ways of doing the calculation, but I believe that done in any sensible way, it will be in line with the conclusion I am about to draw.

Here's my preferred way of doing it: If you ask what is the probability looking at the last 60 years or the last 30 years, you get the same answer that the American economy is more than 5 years into recovery with an unemployment rate below 6%. Conditional on those two things, what is the probability of a recession within the next 2 years? The answer is above 50%. What is the reduction in interest rates typically associated with a recession? Four hundred basis points.

Is it remotely plausible that we will raise interest rates by 400 basis points in the next two years? No.

Is it therefore likely that we will have another moment when monetary policy will be substantially constrained in the next few years? Yes. That is overwhelmingly probable. Is there any serious reflection underway about how that situation is going to be confronted not that is visible? And I think that's a serious, a serious problem.

I think the single dumbest idea in the current policy dialogue is the suggestion that well, yes this is a problem and it is a reason to raise rates now, which it seems to me is a little bit like saying that I should start beating up Adam so that in an hour for now, he'll have the option of getting arrested from being beat up and therefore, feel better.

And that seems to me to be an incoherent suggestion and the suggestion that we should raise rates so that we can lower rates absent some demonstration of asymmetric effects of monetary policy of a kind I've never seen, seems to me to be highly incoherent and it seems to me that the preoccupation of central bankers rather than giving speeches about the importance of their independence should be about their readiness in the societies of which they are a part's readiness to deal with what I think is the pressing problem that unlike, you know there are lots of stuff that the central banks like to say about 'Well yeah, productivity growth's a problem. That's not our problem though. Inequalities a problem; that's not our problem though. Cyclical stability is the center of the reason they exist! And I would suggest that no major central banker in the world, is seriously engaged with this as an issue.

Adam Posen: Another good research topic for us preferably we can resolve in the next thirty days. Having had the respite from being beaten, I will push you a little bit further on this because I mean you obviously have had an incredible impact on the public debate but also a very coherent world view taking us at least in the US context infrastructure spending and given the need for productivity growth and discipline and all these things that seem self-evident. We heard earlier today from [inaudible 00:46:46] who's running a commission in Germany on the long-term underinvestment in Germany both public and private, we heard from Kyoji Fucao talking about in Japan, a relative dearth of productive investment for many years and of course, Japan has cut back on public sector infrastructure investment except in response to the crisis.

So beyond the perversions of our own domestic political economy, why is it that the three economies in the world that are least dependent – can issue their own debt as much as they want and have the lowest interest rates, why do you think they've all gone down this path? I mean I don't want political speculation, from a more political economy point of view, how do you think about this?

Larry Summers: So first of all, I gave a version of this, what I've just said in The Netherlands about nine months ago and I must say I was impressed in The Netherlands, sort of in the same way that – sort of roughly anything I say in the United States appalls me about the state of our infrastructure, you know, roughly I have the opposite impression with respect to The

Netherlands. The airport was fantastic, it seemed to me there were like seven-lane highways to places where you only needed a two-lane highway. I mean, it did not seem to me that I was compellingly right that this was a place that was badly under infrastructure. So, I think it varies from place to place and so, what the role of public investment versus flexibility enhancing private structural reforms that promote private investment will differ from country to country.

I think that basically, aggregate demand is a counter intuitive concept because it runs afoul of the fallacy of composition and basically it is intuitive to people that saving is good and every political leader, you cannot find the U.S. President who has not at least once, drawn the analogy that just as people are tightening their belts at this difficult time, so must government. And that is basically a raw confusion but the fact that every president finds their way to it, speaks to the fact that it is kind of a resonant confusion that makes people happy to hear it. And I think in places where [inaudible 0:49:43] is less permeated, in Germany and Japan, as you wrote many many years ago are famous examples of that - I think that's an additional portion of the explanation

Adam Posen: Terrific. Thank you.

Let me turn over to our audience. Larry has graciously agreed to take questions. On the record, I'm as usual going to ask the first couple of questions come from our guests and not from our internal cacophony who Larry can experience anytime but we'll let you in later. There's a microphone up front. Just could you give to John first please? And there's also a standing mic at back, please feel free to come to the standing mic and be recognized, if you could identify yourself please.

John Fernald: Hi, John Fernald, Federal Reserve Bank of San Francisco and AF. I mean you mentioned the puzzle of squaring the new economy productivity, disemployment effects with productivity growth slowing. But you've emphasized slowing, you could have said slow. Because for most of the past 40 years, we've had labor productivity growth around 1.5% with an exceptional period when you were Treasury Secretary and right after.

Larry Summers: I'm sure that's a tremendous amount of causation there.

John Fernald I figured I would imply it but not say it. And so it could be that 1.5% productivity growth is enough to reshape the economic landscape in many ways in the same way that glaciers move slowly but reshape the landscape. So, that does raise come to the mismeasurement side, maybe did the mismeasurement problem start in 1970, which is more or less what [inaudible 00:51:37] has argued in the past of is it that you think the

problems got worse after that or only in the past dozen years, or how do you think about the timing of when those quality changes got worse?

Because certainly, a lot of work some by people in this room, talked in the 1990s were highlighting expanding varieties and quality change. So I was very interested in your views on the timing of that versus the alternative that we have an awful lot of great innovations before 1970 and since then, we've basically had information technology.

Larry Summers: There are a lot of parts of that question. Nothing I said should have been heard as a claim that there was no sense in which 1920 to 1970 was a better period than 1970 onwards. I'm quite prepared to believe that that might well be the case just as I'm quite prepared to believe that you're right that the productivity slowdown, the post-2004 productivity slowdown antedates, the crisis. Those are separate propositions from the proposition that the crisis didn't exacerbate the productivity slowdown and those are separate propositions from the proposition that there isn't something going on with respect to mismeasurement.

I adduced a simple mechanism that would explain rising mismeasurement namely that what we think of as slow productivity growth sectors are becoming a larger and larger share of the economy and that there is more mismeasurement in what we think of as slow productivity growth sectors than there is in what we think of as high productivity growth sectors. And so, that mechanism would lead one to think that the extent of mismeasurement had accelerated over time.

I don't have any intelligent view to locate with precision the timing of the mismeasurement. It has always struck me that it would be valuable in terms of understanding these phenomena to look across countries at their national income accounts and at their relevant deflators.

I would assume that quality change on an iPhone has been roughly the same in the United States as it has been in Germany and I would have assumed, I would have guessed that different sets of official statisticians were better and worse at understanding qualitative change and looking at the relationship between countries where they're likely to be better at it and countries where they're likely to be worse at it. By the way I'm suggesting that this as a research methodology with no prior knowledge as to whether it would bear out my views or whether it wouldn't, but I would have guessed that the United States was better at measuring quality change than some other countries were and you know, to the extent that you can learn stuff by looking at that. If you go from countries that are terrible at measuring quality change to countries that are mediocre at measuring quality change that would give you some insight into what it would be like

to go from countries that were mediocre to countries that were really excellent.

But I can't give you an alternative narrative that does this. I guess I would express a kind of broader sort of methodological view which is that under the influence of Lucas I suppose, but many others, we have taken to viewing the questions of macroeconomics as being to understand the statistical properties of macroeconomic time series.

And I'm not sure whether that is a better way to understand it than to study major events and to try to understand their consequences. Supposed you were given data on my body temperature everyday over the last ten years, a really stupid way to approach the data would be to say, "Well there were these spikes when it went to a 101 to a 102 but they each have a special factors. So I'm not going to study them. So what I'm really going to focus on is the normal times and we'll look at 98.7 versus 98.6 and 98.9 and we'll observe that really between 2004 and 2007, I didn't get sick, so we'll call that the great moderation in Larry's fever." And you could study that way but you'd be missing more or less everything that was interesting. And I think there's a little bit of that in the way macroeconomists do their business

Adam Posen: Brilliant. Next question, please? Someone dare? Yeah. Please. John.

John van Reenen: So, John [inaudible 00:58:08]. So Larry, you spent a good bit of the first part of your talk on the displacement, employment displacement of facts of technology. And I was surprised you gave so much play to these ideas. I'm extremely skeptical over the show over the recent periods, whether the technology had anything to do with the employment problems we've had.

I mean, for one, we know that in the long run, as in like the fact of the technology for a long time in this normal trend of unemployment. We do think there's a fact of technology on demand for skills. There's good evidence for that. But the fact that taking your point about living across countries, different countries that have different employment experiences - Germany did pretty well over the great recession and the UK hasn't done too badly. In the U.S., things have gone badly with the participation rates but it seems to me, I mean I'm just making sure you'll agree with this that that probably has very little to do with technology but much more to do with things like division of demand as you were arguing. So, why give technology so much play in terms of thinking about the short run fluctuations in the labor market?

Larry Summers: Look. I think there are - maybe I'm making it too complicated. But I think there are issues at multiple frequencies. Let's take my numbers - which I think we do it different ways but I think basically that stand up that in the

1960s, 1 in 20 men between 25 and 54 weren't working. And today, 3 in 20 men between the ages of 25 and 54 aren't working. I think if you looked at that and you did cyclical adjustment and so forth, you'd conclude that it's more like a steady trend than like it all fell off a cliff in 2007.

And now, you know, maybe the natural rate of unemployment is 4%, not 5%. But you're not going to succeed in explaining - of the movement from 1 and 20 to 3 and 20. I would submit that you'd have a difficult time explaining more than 10% of it by saying we have cyclical slack right now and if you worked to include hysteresis effects, and I'm a guy who's big on hysteresis, maybe you'd get to explain a third of it.

If you worked in hysteresis effects from the 2008 recession, but you can't escape the conclusion that there are a lot more men who aren't working. You can't escape the conclusion that on every bit of medical evidence, the population is healthier than it used to be.

John Van Reenen: Most of it

Larry Summers: But every bit of occupational evidence, work is less physically demanding than it used to be and the fraction of people who are on disability insurance is up, not down. And so, something is going on and you know, the epiphany for me on this and I'm not sure where truth lies but the epiphany for me was I was an undergraduate at MIT in the early 70's and we were taught about the automation debates in the 1960s. And basically what we were taught were that there were these smart people who were exemplified by Bob Solow and there were the stupid people who were exemplified by a bunch of sociologists.

And the stupid people said that technology was going to remove the jobs and the smart people said, "Well the technology will remove the jobs. If there's more productivity than people are going to have more money and if people have more money, they're going to spend it and then everybody's going to be employed. And so, it's like the Luddite fallacy to think that technological progress reduces jobs and this is stupid. And that's basically what I believed and you know, that's basically what I went through life believing because that's what I've been taught and it seemed to me to make sense.

And then at some point, it sort of occurred to me that suppose the stupid people were right, what would it look like? Well what it would it look like would be there'll be some large categories of labor who would see their relative wage go way down. And then as part of a process where their relative wage went way down, fewer of them would decide to work or be employed. And so you would see a substantial decrease in employment for

large subgroups within the population and you would see a substantial decline in wages. Now I notice that that's kind of what we did see. And so I decided maybe the stupid people weren't quite as stupid as I thought they were and that this was at least a serious concern that had to be thought about.

So, I guess I think there is both a, you know, Keynes as usual I think was pretty smart and you know, Keynes began his essay on economic possibilities for our grandchildren by saying that there was this really pressing cyclical problem that had to do with demand which was really important but not all that profoundly fundamental. And there was this more fundamental thing which was that technology was marching on and he thought the dis-employment effects would show up as everybody working 15 hour weeks. And it doesn't look like that's quite what they're showing up as. But the basic idea that technological progress comes with reduced labor input, sometimes it's early retirement, sometimes it's people who aren't able to get themselves employed, sometimes, it's lower hours, but that is basically the story of the last 150 years.

So, I would not back off of my putting a lot of weight on technology as something important here.

Adam Posen: Okay. For our last question at the back please.

Ted Truman: Ted Truman [inaudible 1:04:45] Peterson, you're former employee. I want to comment. You might want to try to figure how you're going to fit in to your pattern the increase in white male obesity.

Adam Posen: He's lost weight, I haven't. So [inaudible 1:05:02]

Ted Truman: Yup, but he's probably less than his counterpart would have been in 1920. He's more than his counterpart would have been like in 1920. That's a joke. And you--

My question is and I think you've covered this or might want to clarify it, I think you left it as a possibility that one could say starting from the end of World War Two, we've had a dramatic growth in GDP. Unprecedented in terms of the world GDP. And it is possible that basically we've been going through success. One of the best story about the hysteresis, successive periods in which you've gone down, you've sort of gone up and then you've had a crisis of one sort or another and then you've gone down because in some sense you're leading a gradual diminishing rate of return. You told that in terms of I think, you told the story though I don't follow everything as well as I once did.

In terms of sort of part of one of the sources of recessions would be people get there and then say: Oh gee, we now can't have the demand out there and then they cut back. So, did I understand you correctly on not as a possibility even if you dismissed it? And I haven't read your paper so, I wish I should, but I wonder whether that's right.

Larry Summers: Not a hundred percent certain I understood your question, but I'll say this.

So, between the penultimate draft of Olivier and my paper and the ultimate draft, there was a longer than usual time period because we became quite seized with the issue that if productivity growth slowed down from after the Second World War till now, and there were periodic recessions, then it would be easy to blame that on the periodic recessions rather than a separate process and without trying to explain it here, I hope I just convinced you that I understood the issue and we did a bunch of statistics in different kind of de-trending and adjusting for secular slowdowns and superimposing the whole thing on quadratic trends, we did to the best of our ability econometrics that satisfied us that yes, when one made that set of corrections, there was less hysteresis than what's suggested in our original draft - so, excellent point.

But that the broad conclusions I'm asserting continued to be valid once that point is recognized. What I'm going to go away and think about after this is a point that John Fernald made which is I think, though I'm not certain, that it is closer to true that this decline in employment, in the employment share has been steady since the late 60s. Than it is that it's all sort of calm at the end, which does raise his glacier-shaped-rivers-slowly-hypothesis.

It is not true that during the period of more rapid productivity growth between 1940s and 1960s that there was more of this dis-employment effect. In fact, there was much less of this dis-employment effect. So there's at least some anomaly down that line. But I will have succeeded in what is my most fundamental purpose here, if I've gotten you all to think about whether you have a decent explanation or a decent reconciliation of the dis-employment phenomenon and the productivity growth slowdown phenomenon or if you don't have a decent reconciliation which one of those views you're prepared to relinquish as a way of thinking about the world?

Adam Posen: Awesome. As I mentioned, Professor Summers is a member of our executive committee and additionally, he generously comes in a couple of times a year in person and sometimes by e-mail and tells us what we should be working on. Today, he sent us all a bunch of, I think, very stimulating assignments that I'm hoping not only Pearson Institute but the profession at large picks up.

Thank you very much for your time.