Season 2. Ep. 1 Productivity Puzzles podcast transcript

# Global and European Productivity Outlook 2023-2030

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BvA: Productivity growth has been weak in the past decade, and the last few years have been challenging; that we know. But where is productivity heading – in the UK, around Europe, even around the world? We are going to find out. Welcome to Productivity Puzzles.

Hello, and welcome to a brand new season of Productivity Puzzles, Euro Podcast series on productivity brought to you by The Productivity Institute.

I'm Bart van Ark, I'm a professor of productivity studies at the University of Manchester and I'm the director of The Productivity Institute – a UK wide research body on all things productivity in the UK and beyond.

Welcome to the first episode of Productivity Puzzles, season 2. We've taken a short break in the past few months but here we're back with renewed energy, bringing you 12 new episodes – every month you'll get one. So, do refresh your list of favourite podcasts to follow so that you will hear about our new shows when they are coming up, and we will be releasing them at the end of every month.

It's a new year so we thought we would start off with a forward-looking perspective and ask ourselves where we think productivity in the UK, and across Europe and the US, will be heading. And more importantly, what needs to get done to realise the upside of those projections, because I can already tell you that the productivity outlook isn't that fantastic for most places around the world.

For the first part of the podcast, we will focus a bit on where we are on productivity, and what the best possible projections and forecasts suggest about what might happen. But it's not just about numbers in this podcast, we also want to look at what can be done, in particular, so in the UK, to see what policy changes are possible and what measures businesses might or might not want to respond to.

And I have the pleasure of discussing these issues with three great panellists, who are very experienced on the issues of productivity measurement, productivity analysis, and policies around pro-productivity.

So, first of all I'm very happy to welcome Catherine Mann to this podcast. Catherine is an external member of the Monetary Policy Committee at the Bank of England since September 2021. She's an expert on many economic policy issues, but also on productivity issues globally, on which she has worked very extensively in her former roles as Chief Economist at Citibank, and especially also as Chief Economist at the OECD, Brandeis University, and at the Peterson Institute for International Economics in Washington.

Catherine, welcome, and great to have you on this podcast.

CM: Thank you.

BvA: Actually, interestingly, we had you on the last podcast of the previous season; our trusted listeners will remember that. And then we had a discussion about the policies that the new UK Government would have to adopt in order to raise productivity. Now, we already have another new government now, so we thought it might actually be good to have you back and see where we are half a year later because of all that's happened in the meantime.

It's good to have you here; and also, we have you here with us in the podcast studio in Manchester.

Secondly, I'm so glad to welcome to today's panel Kitty Ussher, who's Chief Economist of the Institute of Directors since 2021. The Institute of Directors is an important organisation for business leaders here in the UK, and well known for economic confidence indexes and outlooks for business and for the economy.

Previously, Kitty has held various different positions at Demos, at the Financial Conduct Authority, and also in politics as a Member of Parliament for Burnley; and various roles in government, including The Treasury and the Department for Work and Pensions. And Kitty is also a member of the Governing Council of The Productivity Institute.

Kitty, great to have you on this podcast.

KU: Great to be here, thank you, Bart.

BvA: Looking forward to your comments.

Now, as I said, this podcast is in part about numbers, and we therefore have to make sure that we have somebody on the podcast who knows what we're talking about, and who actually is putting some of these numbers together.

Klaas de Vries is a Senior Economist at The Conference Board, which is a global non-profit think tank for the business community, headquartered in

New York. And Klaas is responsible for The Conference Board's economic outlook, but also for a database called The Total Economy Database, which is one of the world's most extensive data sets on productivity measurement. And Klaas will walk us through some of the numbers on global productivity and projections in this podcast.

Klaas, great to have you on.

KdV: Great to be here, Bart.

BvA: So, Klaas, let's dive right away into some of those numbers. We obviously don't want to overload the podcast with a lot of numbers because, you know, our listeners can't see all the nice tables and charts that you are putting together. But we will put in a link in the show notes so that people can actually go to The Total Economy Database and all the numbers at The Conference Board.

But let's, sort of, have a very high-level talk about this. And maybe a good starting point is just to look at, you know, the growth of the economy being made up two things essentially, right? You grow the economy either by adding more hours work to the economy – more people, and more working hours of those people; or you grow the production, or the output per hour – the labour productivity of those people. These two things add up to economic growth.

So, if we start with thinking about what happened, sort of, in the decade before the pandemic, it looks as if we already were looking at a slowdown in economic growth driven by that slowdown in productivity growth. Even before the pandemic, so before 2020, correct?

KdV: Yeah, that's broadly correct, Bart. So, productivity overall is by far the most important driver of economic growth, and growth in living standards, at least over longer-term periods. But indeed, over the last decades we've seen quite a bit of a slowdown, in some places even a near stagnation in productivity growth.

I think it's been most prevalent in the, sort of, mature or what you could call developed economies – so, think about Europe or Japan or the US. And the record for emerging economies is a bit more mixed but we also see, you know, some slowing in productivity growth there as well.

BvA So again, we can talk for hours about the reasons for this, and actually we do quite a few episodes in this podcast series on what is…explaining that slow productivity growth. But at a very high level, when you just look at your numbers, what would you identify as the key measures that you're looking at that are explaining that productivity slowdown?

KdV: Yeah, it depends a bit on the country and the region, but largely I would say it's really two things. So, first of all, there's been a slowdown overall in the growth in investment, or in the growth in the amount of capital that's being used in the production process. And I guess the other part is related to a slowdown in what some call a TFP, or Total Factor Productivity, and that really relates to changes in efficiency, but also technical progress.

BvA: Yeah, then when you look at the emerging markets, I think the other part of the story here is actually a slowdown in what you would call investment, right? And I think we have seen quite a few countries, both in the mature economies and the emerging markets, which have been seeing a slower growth in investment in the past decade.

KdV: Yeah, particularly in the UK. But also, Italy and Spain as well. And even in the US I think it's also…at least over the last two or three decades we've seen a clear downward trend.

And indeed, in some emerging economies, you know, even though maybe investment hasn't levelled off that much, we still see, you know, the, sort of, return on investment is slowing down. In other words, sort of, the efficiency of that investment, that you can measure by TFP for example, has been slowing down, yeah.

BvA: So, this was all already before the pandemic. And then this pandemic hit, and now we're, sort of, three years past the beginning of the pandemic, and then something strange happened to productivity. Because in the first instance it actually seemed to go up a bit, but now that we're, sort of, three years down the road it, kind of, looks like the pandemic hasn't made the picture on productivity much better. Is that right?

KdV: In some countries, even in 2020 we saw a huge jump in productivity. But that…I think it wasn't really because of a huge actual increase in productivity, it was really because of shift effects. Because these COVID lockdowns, they really impacted, you know, some of the low productive sectors of the economy. So, think about accommodation or, you know, restaurants or things like that.

So, it was really a shift effect and that, sort of, you know, corrected itself in the next year as these sectors opened up.

BvA: So, does that mean that we're, sort of, now where we were before the pandemic with productivity growth?

KdV: I think it's still…we're still in a very transitional phase in the economies. Overall last year, as the data's coming in, we still see very low productivity growth. Actually, much lower than before the pandemic. And I think that's because we have all this scarring for a lot of sectors that are in the economy.

We also had a lot of, you know, significant challenges that popped up last year. So, think about the energy crisis, particularly in Europe, for example, and also, inflation globally.

So overall, you know, the first estimates for global labour productivity for 2022 are for actually, sort of, stagnation, or maybe, you know, virtually zero. And even slightly negative in a number of large economies.

BvA: Right, that's actually pretty unique. I don't think that we have really on record anything of a global productivity growth rate around the world pretty much being zero. So, we are, sort of, in a pretty unique situation. But things don't really…haven't improved so much in recent years.

So, looking forward now, and looking at your projections, you know, you could always say, yes, stuff comes down…it goes down, it may go up at some point in time, so maybe there is some hope for productivity growth ahead. So, you are doing these estimates of projecting productivity growth, that seems to me awfully difficult to do, right? Because that's not an easy measure to predict because there's so much going on that influences productivity, as you already mentioned.

KdV: Yeah, that's correct, it's really hard to predict productivity. And also, if you look at the historical records of people who said, you know, productivity's going to be great, or productivity's going to be bad, you know, oftentimes these predictions have been proven wrong. You have to look at, you know, what are the factors that consider why companies are going to invest or not. And that depends on a lot of things, you know, not just policies but also uncertainties over in the broader economy.

And then you have this TFP, or this technical progress, this efficiency measure, and that really stems from gains in, you know, how labour and capital are being used. It also relates to overall technical progress. And you can have great inventions but then, you know, how are these technologies adopted and diffused, not just throughout one economy but also throughout different economies. So, there are many factors to take into account.

BvA: Yeah, and for those listeners who really want to get into the detail of how this is being done, we will actually put in the show notes a link to a paper by The Conference Board that explains everything in detail. But that's really for the productivity nerds on this podcast.

So, very briefly, at a very high level, what does the crystal productivity ball tell you in terms of what's happening to productivity in the next couple of years?

KdV: So, with all the, sort of, economic challenges that we see ahead of us, I think it's hard to see a large acceleration in the contribution of investment and capital to productivity. So, we expect that for mature economies the contribution will, in the course of the decade, sort of, recover to its longer-term trend. So, that's capital.

And then, you know, in TFP it really depends on whether that can, sort of, drive productivity growth. And that's most likely to happen if technology and innovation will strengthen. And again, as I said, most importantly, whether these technologies and innovation will be adopted throughout the economy by business and diffused. And that's a big uncertainty.

I think in emerging markets and developing economies, overall the investment contribution is probably also going to drop off a bit. You know, we have the effects of a very fast globalisation era. I think it's a bit of a debate whether we're going into deglobalisation or not, but it's clear that, you know, we're moving into a different period than we were before. So, that's, sort of, limiting the investment growth in those economies.

And I think there are also structural changes going on. So, for example, if you look at China, there's been, you know, a clear shift away from the, sort of, investment and industry-led development model. And that's also, you know, overall leading to a slower capital contribution to labour productivity.

BvA: So, we really try to avoid discussing numbers here, but then just to close this part of our conversation, at a high very level how much is productivity going to grow for the globe, for mature economies, and for emerging markets?

KdV: Sure, so the annual growth rates of labour productivity in mature economies that we are projecting is for about 1.5 per cent for the remainder of this decade.

BvA: Per year.

KdV: Per year.

BvA: On average.

KdV: Yes, this is annual average labour productivity growth. For emerging markets we're a bit more optimistic, you know, given the continued catch-up potential there. So, overall, we think it's more likely around 2.7 per cent for emerging markets and developing economies for the next decade. And that gives you a global figure of about 1.9 per cent annual growth.

So, overall, it's not too bad, but you have to…you know, if you look at it in a historical perspective, for example, you know, going just back to two decades before, it is a bit lower because they're…you know, often we had more growth rates in the range of 2.5 to 3.0 per cent global productivity growth. So, we're not expecting to go back to that era, so to say.

BvA: And that's important, because as you already mentioned, we already had a slowdown in the past decade and it's not really going to recover even to that slower growth pace. So, even though we will see an improvement from what we had in the last year or two, it's not going to be back to even where we were in the past decade.

Now, it's obviously not an incredibly optimistic perspective, and it's a bit surprising…well, you already mentioned that given we're living in this era of technological change or innovation, we'll talk a little bit more about that in a minute.

So, let's go to our other two panellists, and Catherine, let me start with you.

What I find particularly interesting in what Klaas is saying is that this productivity slowdown, it has become a global issue. This is not…you know, in the past we were talking about maybe mature economies at the frontier, but now pretty much around the world we see that slowdown in productivity growth happening.

And that's actually a pretty unique event, right, that we're seeing, and how should we think about this? Is this something that has to do with, sort of, the polycrisis that people are talking about, or is there also something specific with productivity going on that we need to be aware of?

CM: Well, it's a really good question, Bart, and, you know, I always appreciate the opportunity to come and talk about the productivity issues. Because ultimately, it is the wherewithal for citizens to have better lives is if we have better productivity growth.

But with any discussion about productivity growth, we really have to do the decomposition into frontier, and then the firms behind the frontier. And we can do that in the context of an individual country, we can do that in the context of the global economy as well.

When we think about the frontier and when we think about who is at the frontier, it is an important feature of the productivity dynamics that the US, at the frontier, has slowed. And this is important because it's, kind of, like the leader in a race slowing down and yet those behind are not catching up.

So, the question is what do we think is going on at the frontier. And then secondly, why is there not catch-up, particularly by the countries that in some sense could have been close to the frontier in terms of training, technology and so forth.

So, one reason why we can think about the frontier slowing is that there has been some evidence of reduced competition at the frontier, as companies that used to compete with each other for innovation – to jockey for position at the frontier – take over market share for example. Increasingly there have been mergers and acquisitions of companies at the frontier. So, you don't have to compete, you don't have to innovate. And I think that's an important feature in the US economy but in other economies as well.

I think the second aspect of that, and it's related of course, is this retreat from globalisation. Again, I think we can argue whether it's deglobalisation or regionalisation or slowbalisation – there are lots of different vocabulary words. But again, global competition is an important driver of innovation, and there has been a retreat from that type of competition.

And that's not only important at the frontier, but it's also important for those firms and economies behind the frontier. Because one avenue through which firms become more productive if you're behind the frontier is you engage with frontier companies. And so, when the frontier companies merge with each other, and there's less globalisation, there's really less opportunity for firms behind the frontier to get the benefits.

The second point that I think is relevant to consider is what kind of digital factors are important in today's climate, relative to the climate, say, 20 years ago. We used to talk about network externalities associated with information technology within companies and then both, you know, IT producers and IT users. And it was critical to have those network externalities having everybody, kind of, use computers, so to speak.

These days, one important feature of the digital environment is the externality associated with data aggregation. Data aggregation externalities are internal to firms. And so it's not the same as an externality of the network type that was a very important driver of that robust productivity growth that we saw 20 years ago.

Small companies have a little bit of data, they don't get any benefit really from data aggregation. Their data can go to somebody else who then aggregates it all up, and then that bigger company at the frontier gets those benefits. But how…the diffusion process does not work the same way as the diffusion process of network externalities for using information technology.

So, I think that's…the set of issues there are the two that I would emphasise.

BvA: Yeah, and we'll pick up some of these issues later on, because they're obviously related to how we're thinking about what's going to happen with these issues. Is something going to happen that will change the dynamic and maybe we actually can become more optimistic this is just a phase we're going to go through; but maybe not.

But before that, Kitty, I want to bring you in here. Because the other thing I found really interesting about Klaas's comments was this observation that, you know, 2022 was a particularly bad year. You know, we had the, sort of, coming together of the aftermath of COVID, and then the energy crisis, and the war in Ukraine, and everything coming together. We'll probably still see something of that in '23 and '24.

How long is this going to really impact us? And in particular, how is it going to impact on productivity growth in the next two or three years?

KU: Thank you, yes, very good question. I was very taken with Klaas saying the effect of the pandemic has in a sense crowded out any other long-term trend for the last couple of years. I really don't think we're through that. I think it's not possible at the moment to pick out a long-term shift or not in terms of underlying…particularly labour productivity growth from the shocks that we've experienced since 2020.

And I think, you know, for most people running businesses, they have been probably more affected in their decisions by trying to work out whether their market still exists or not. Or whether they need to do a fundamental restructuring of their supply chain due to an entirely different way of looking at geopolitics and geographic risk. Rather than working out what is the, sort of, continual innovation and incremental improvements that you probably make in calmer times.

So, I suspect we're not really through this yet, although clearly, you know, we're a lot more through it than we were 18 months ago.

And I think, sort of, looking back over the historical data, and particularly homing in on the United Kingdom, you know, we can really see two very distinct phases in terms of where GDP growth has come from that relates to a different utilisation of resources.

So, you know…and this is well rehearsed, but prior to the financial crisis, growth was being driven by productivity in a perfectly reasonable way. And then after the financial crisis, growth has been driven by increased participation in quite an unusual way. So, you know, the proportion of the population in the UK that was in employment was continually rising, and surprising everybody by how it continued to rise in the decade leading up to the pandemic. So, Britain got its growth, but it didn't get it from traditional understanding of productivity growth.

So, the cause and effect of that I think is now going to come into sharp relief. You know, was it because it was so easy to grow through increasing your head count that people didn't bother to innovate. Or was it the other way around, that they were, you know, doing…there was something fundamentally, kind of, wrong, and in a sense, it was lucky that we also had increased participation at the same time.

So, if I bring all this to a head, what does it mean now? Well, of course, Britain seems to be rather unique in that the labour force inactivity rate has risen. Now, possibly that's just a correction from a much lower inactivity rate before, perhaps the marginal worker is not working and they never worked somewhere else.

But it will begin to expose some of these questions because will that push the whole thing into reverse and mean that employers are now being forced to perhaps innovate in a way that productivity academics would think is a good idea, because they don't have access to labour resources where it's a choice between the two. Or is the UK going to find that it's slipped further behind because now it's, kind of, got neither; it doesn't have the culture of innovation and at the same time it hasn't got the labour resources that it had before.

Now, I've got a number of reasons to be maybe slightly more positive, or optimistic, than Catherine. I think there have been some structural changes forced by the pandemic, even when you don't think about inactivity, that are potentially very exciting once this settles down. The, sort of, reorganisation that comes from greater M&A activity; the, sort of, Schumpeter like wiping out of weaker firms; the increased innovation in ways of working will settle in their most efficient format – I'm talking about remote working and also digitisation. And I think there's quite a lot to be hopeful about, but perhaps we'll come onto that later.

BvA: Yeah, those are really important comments, Kitty.

So, after the break we'll step back a little bit from the actual numbers and zoom in a little bit more on what would make a difference to productivity in the longer term. Can we be a bit more optimistic or do we still have to be very pessimistic about the prospects for technology and innovation. How can policy help.

But before we go there, let's first take a short break to hear about what else is happening at The Productivity Institute.

'The Productivity Institute aims to pinpoint why UK productivity has flatlined and how to create the foundations for a new era of sustained and inclusive growth.

'Visit our website at productivity.ac.uk to find research covering topics such as business investment and innovation, skills and further education, foreign direct investment and trade, and the transition to Net-Zero. The Productivity Institute also investigates how levelling up and devolution can help to raise across the UK's regions and devolved nations.

'On our website you can find deep dives into how leaders can improve productivity within their firm of public sector organisation. While you're there, sign up to our newsletters for regular updates on what productivity means for business, workers, and communities, as well as the latest on how productivity is measured and how it truly contributes to increased living standards and well-being.

'The Productivity Institute is a UK wide research organisation funded by the Economic and Social Research Council.

'The Productivity Institute; productivity together'.

BvA: Welcome back to my discussion with Catherine Mann, Kitty Ussher, and Klaas de Vries, about the outlook for productivity in the next few years and the remainder of this decade.

Now, before the break we were discussing some of these productivity projections and they weren't particularly encouraging. So, if productivity slows, we won't have the means to make new investments, and that in turn will make things worse. So, it's a, kind of, vicious cycle that you're creating in this way.

But there's a lot of uncertainty here. And there are really, sort of, two ways to unlock more productivity growth, and one of them is to strengthen investment more broadly, and the other one is to improve technology and innovation.

Klaas, you had been working on a piece in 2022 for the World Intellectual Property Organisation, it was looking at productivity in relation to technology and innovation. You made a distinction that is between, sort of, the techno-pessimist and the techno-optimist.

Let's start with the pessimist. One of your arguments is that it's just harder to really find transformative ideas that can change productivity. It's become much harder compared to what it was in the past.

KdV: Yeah, that's correct. I think this relates to the notion of the low-hanging fruit that have largely been picked, right. The overall so are these getting more expensive, in the sense that, you know, for each technological breakthrough, it seems to cost much more in terms of research input. So, that's really the idea of, you know, these transformative ideas are getting harder to find.

And then even further, some are even arguing that, you know, those ideas that are actually coming through, those innovations are…for one thing, they're less disruptive. There was actually a recent paper on this that looked at, sort of, the academic papers and patents over recent decades, and they found a downward sloping curve, sort of, in the disruptiveness of academic papers and patents that are coming out.

And related to that, some would also say that the innovations that are coming through, or that are being made, are just not so great as the ones in the past. You know, there's less…they're less impactful, so to say.

BvA: So, the first argument is, yes there are ideas but they're just not as great or not as effective, they don't make as big a difference. The second reason to be pessimistic is to say, well, even if the ideas are there, the problem that we are ending up with is that the diffusion mechanism, the way by which these ideas can, sort of, spread around the economy, and be adopted and adapted by companies across the economy, isn't as effective any more as it used to be.

KdV: That's really a diffusion argument indeed. So, as you say, there seems to be a weakening link between, sort of, the innovation that's, you know, happening in the marketplace and the scientific discoveries in the laboratory.

So, some people, you know, they would argue in the past you had these in-house…you know, firms would do a lot of in-house R&D, in-house innovation. And nowadays they're much more, sort of, outsourcing those things to, you know, academic or…academia or research labs.

BvA: And then the third reason to…for the pessimist is to be able to say, even if the ideas are there and even if we diffused them very well, there's just a lot of other so-called headwinds that are making it very difficult. So, what are these typical headwinds that even if we have a lot of technology, we still don't get the productivity from it?

KdV: The ones that are most often mentioned are, for example, ageing. So, we have, you know, a shrinking workforce in a lot of countries around the world. So, in other words you simply need, you know, much more productivity growth to just keep the economy growing at the same rate.

You know, other headwinds relate to inequality, for example. So, even if you are creating more resources, you know, it's simply just going to a smaller group of people at the top.

You have increasing environmental regulation. That's sometimes seen as a headwind because, you know, you need to devote more resources to these taxes.

And then you could also think about, particularly in the context of the recent years, you have increasing indebtedness. And now, as it's getting much more expensive to service that debt, again you need to devote more resources to paying off these debts.

So again, you know, the argument is not that innovation is no longer there, but even if you do have innovation it will become harder for it to, sort of, make a big dent in the overall improvement in living standards.

BvA: Okay, so those are the reasons to make us very depressed about the opportunities here. But then there are also, at the other end of the scale, the optimists.

And some optimists are actually saying we're just expecting too much from technology. You know, we're expecting that suddenly the economy will start to grow exponentially. And I hear some people saying that's not true. Frankly, if you look at this historically, the economy is rarely growing exponentially, the growth, it gets faster, faster every year, but it is something that's sometimes called additive growth. So, every year you add a bit, but if you do that many, many years, then you are in a much better place.

So, our expectations are too high, right?

KdV: Yeah, the way to interpret the data, right, and where do you compare the current period to. So maybe…you know, maybe we're using the wrong benchmark. And indeed, there have been some papers arguing that, look, productivity over time it really goes through these ups and downs. Overall, the productivity growth rates that we have now, they're, sort of…in a long-term historical picture they're not that bad even.

And even if you have growth rates slowing down, if you look at the absolute increase in labour productivity, so the absolute amount of volume that you produce per hour, that you're adding each year, they can still be relatively constant even though the growth rate goes down. So, that's indeed that concept of additive growth.

BvA: So, another reason for optimists is it just takes time, we need to have a bit of patience. If you look at these big technologies, they usually take a decade, two decades, three decades, before they're really spread across the economy. And frankly, when we look at it carefully, we're already seeing that there are sectors in the economy that are actually benefiting from new technologies and growing productivity rapidly. Is that, sort of, another good optimistic argument?

KdV: Yeah, I think that's one that you hear…or at least I have heard the most, you know, as a, sort of, solution to our current…the conundrum of, you know, you have a lot of technological progress around you, or at least it looks like it, and still, we have slowing productivity growth. And yeah, as you mentioned, it could be related to it just takes time for innovation to be absorbed by broader…you know, broader throughout the economy and create impacts.

It can also be the case, for example, because you need new innovations, you need complementary innovations, complementary processes, and in some cases you need also, you know, organisational innovations. You actually need a lot of work around that. Some innovations, you know, you need to overhaul your business model to really, you know, make good use of it, and that just simply takes time, yeah.

BvA: And then the final optimistic argument...well, if you're in the measurement of productivity it's not really something to be optimistic around, or positive, but that is that some people say we're just not measuring this well. There's a lot happening in the economy that is just not being picked up by the productivity statistics; correct?

KdV: I think the third thing is really, yeah, the measurement forks. In one hand you have people say, you know, it's actually we're, sort of, under-measuring it. So, we could measure it, but we just have to do it better. Because, you know, you have all these changes in the economy, you have…think about free goods or think about intangibles, that we talked about in earlier podcasts. Or just in general, you know, the issues with measuring services and overall quality improvements.

So, in other words, these people are saying we're actually…you know, we're actually getting more productive; our living standards are improving. It's just that, you know, the official statistics are, sort of, under-estimating those improvements.

But then you have, you know, a second group who actually would go a bit of a step further, and they say, actually, you're just looking at the wrong metrics. Right, we have…most often, you know, GDP is used. It's not really a good metric because it's simply…it's just a very outdated one. It's really not fit for the 21st century, right. It's not moving as fast as technological improvements can catch it up with.

BvA: Okay. Now, Kitty and Catherine; and Kitty, let me start with you. If you…so, here are the pessimistic and optimistic arguments, where, sort of, on that are you putting yourself and why?

KU: Well, I think unless the evidence is extremely clear, then that's often a, sort of, philosophical choice about where you want to be. And if it's a choice, I'd much rather be glass half-full. Particularly when you're talking very long term with so much uncertainty about an area which is…we know isn't linear anyway.

I mean, it seems sometimes slightly odd to say, well, diffusion used to happen faster, or the disruption used to be greater, because how can you turn something that's, you know, a binary, kind of, change and try and extrapolate a trend from it. We've only really had economic growth in the way that we understand it since the Industrial Revolution, and we can probably all on one hand name the, sort of, disruptive technologies. So, the idea that we should be able to say when the next one is, or even, you know, what it is, feels slightly odd.

So, I think given that we have a free market, we can say free markets are good and exert, you know, within limit, positive competitive pressure that will put a premium on continual productivity increases. And, for a certain type of firms, continual innovation, for other types of firms, continually trying to do everything at a slightly lower cost and slightly higher revenue, which is equivalent of productivity, kind of, anyway. And I see nothing that's really changed that means that that won't continue to happen.

There are some interesting, kind of, caveats to that. One is the idea that perhaps consumer demand, there is a limit to it. You know, perhaps our standards of living have risen to such an extent that there isn't the next enormous swathe of things that we will demand in the way that we demanded domestic lighting, and demanded home computers, and demanded cars, and demanded smartphones. You know, perhaps these endlessly, sort of, top end smartphones are giving us more utility than we need and in fact there needs to be a whole swathe of new, kind of, markets opening up in order to create that competitive spur.

But then I would say that probably is there in terms of health tech. I would say there's almost insatiable human demand for health products, both collectively and individually. So, perhaps that's the next one.

BvA: And in environment tech, and green tech?

KU: Exactly. So, that was the next thing. And then coming onto the point of how we measure – I mean, society has got insatiable demand for green tech, but also, I think that fits in nicely to what we measure. Because I don't think we'll ever, in the foreseeable future, stop measuring GDP, but I think we may in parallel, as people want to measure their carbon footprint, have a, sort of, complementary accounting system that measures per unit of carbon as well. And so, I think we'll increasingly start talking about those two in parallel, both in company accounts and in individual footprints, and in whole society and global ways.

So, optimism with change, is how I would summarise my view.

BvA: Catherine, let me go to you now. On the scale of positive and optimists and pessimists, where are you placing yourself?

CM: So, policy makers have two challenges. One is to deal with climate transition, and the other one is to deal with living standards of the people that they govern. And these two challenges can work together to be very positive from the standpoint of both outcomes.

I think it is clear that if companies get signals on…that climate is a factor that's important for consumers, that it's good for financial markets, if they get those signals they will respond with investment and innovation. And the advantage of thinking about that nexus of investment and innovation, because of the drivers, the demand for the products, processes, to improve climate standards first, investment is unique that it has both a demand side as well as a supply side.

So, the more investment that we can manage directed towards the climate transition, this is a key ingredient to bolster demand within a country, but also around the world. And it is also an avenue through which you enhance supply, both directly in terms of capital stock as well as through the relationship between investment and TFP and innovation.

So, investment in a climate-oriented strategy is a two-for, that you get two good outcomes. And I think that that is a critical way of thinking about how a climate-directed set of policies can promote both demand as well as supply.

The other factor that I think is relevant in the context of thinking about these investments and innovations relevant for the climate transition is they're, kind of, more traditional in, sort of, the diffusion patterns that we're familiar with. That big firms might innovate but little firms have to use those innovations. They can buy the…you know, the innovation to achieve a better capital…a climate strategy in their production process, or they can get more information about the carbon footprint – as Kitty was saying – that consumers and investors absolutely are demanding, they want that information.

So, in some sense, this kind of innovation and investment brings us back to, sort of, the good days of productivity growth, and of the stories that we can tell about frontiers moving out and diffusion bringing up the bottom.

BvA: But I think a big difference is the role of the regulatory environment. Because this is actually the first time that we're saying we don't let technology and innovation do the job. We basically say in front we need to reduce CO2 emissions, and therefore companies are being told to reduce CO2 emissions by so much. That's a very different way of having to innovate, with the, sort of, pressures of the regulatory environment around you, than what we've been seeing in previous phases of innovation.

CM: Well, yes and no. I mean, I think it is true that the externality associated with carbon is more challenging than, for example, diffusion of information technology and putting a computer in an office. Something like that, in, sort of, the olden days of productivity growth, as it diffused from the frontier down to other companies. But I would argue first, it is a multilateral environment. There are policies that do come from central governments as well as local ones, as a common objective for reductions in carbon across all jurisdictions around the world.

But I would not under-estimate the importance of consumer demand for understanding their carbon footprint; responding to – I don't want to have a carbon footprint that looks like that; and demanding that, sort of, underpinning of the consumer-led demand for a lower carbon footprint product. And, you know, firms respond to that.

And again, I would not under-estimate the demand that's coming from the financial investor community to have that information about carbon footprint, and to direct financial capital towards the investments and innovation that is necessary to get us there.

BvA: Yeah. There are opportunities here that we should actually pursue and can get us, sort of, to the optimistic side of the scale. But there is a clear role for policy.

And here may be the last, sort of, section of this podcast. Kitty, I'd like to start with you. Because at the Institute of Directors you did have quite a bit of work thinking about what are the policy measures that should be taken in order to get that pace of investment that is such an important driver, from both a demand and supply side…to get that pace of investment going again.

KU: Yeah. So, I mean, the starting point is that decades of academic research tell us that there are some things that are clearly correlated – levels of investment, levels of skills, are correlated with productivity that supports GDP.

So, the question then for policy makers is, is there a role for them in order to encourage that to happen. And taking a very simple framework, if there's a market failure…I said markets are good but they have limits, and if the market isn't working properly that then does lead to a rationale of intervention to support investment.

We see a couple of places where that seems to be quite clear. One, and I think probably the main one that applies to most companies, is in skills, and particularly for the SME sector that the Institute of Directors represents.

Simple example – so, if you need a certain skill in your team and you go out to market and you can't find it because it's in really high demand, and so you bite the bullet and decide to train up somebody to have that skill internally. Then of course, as soon as they've been trained at your expense, they think, brilliant, I've now got a really desirable skill and off they hop to a competitor. So, you haven't got the skill and you've already spent the money, and that feels like a market failure.

So, we've got a very clear ask of government, which is that there should be some kind of tax credit system for training in skills shortages areas. And so, then you need to know what the skills shortages areas either are or likely to be.

Then, on the capital side, it does look like the super-deduction that was introduced as a temporary measure coming out of the pandemic has had a measurable positive impact. Now, we know investment's been really low, but our data shows it would have been even lower if that wasn't in place. And so, there does seem to be quite a clear economic policy argument to continue it.

So, we've got two ways there of using the tax system in order to encourage an aggregate in the private sector more of what is in all of our interests to achieve, mainly greater investment. And when the climate's really uncertain, as it is at the moment, I think the argument should be that policy therefore needs to work even harder to, sort of, counteract that.

If policy can't afford to do those things then, you know, first-base, as we've seen in the last six months, has to be a policy environment that feels stable, predictable, secure. Because certainly you're not going to invest shareholder money into an environment where you think it could all be wiped out due to factors beyond your control.

BvA: And what I find very interesting about your report is that when you survey your members at the Institute of Directors, you actually find that they put a lot more emphasis on skills as an investment than actually on the physical investment.

But I found it very striking, right, that you're saying that actually the skills issue – not just recently because of the labour shortages but actually longer term – are the bigger issues for firms at the moment than, you know, policy help that they need in order to make investments in machinery and equipment and all those kinds of things.

KU: Yes, that comes out really clearly. You know, perhaps the, kind of, academic framing for investment needs to really take this on board. Because all companies need people; not all companies need a warehouse full of high-tech stuff.

And often, when you talk to a business leader and you talk about investment, they might think of it as investment in a new team, investment in a new person, a sales person who's got a really good address book. And that is investment, because it's taking…it's putting, you know, cash, basically, up front with an uncertain reward but you think it will help you grow.

BvA: Catherine, from your experience, particularly at the OECD, looking at many other countries, do you recognise that, sort of, emphasis on skills and other investment policies? What have you seen in other countries as being very effective policies in order to get investment going again?

CM: So, the OECD has of course done quite a bit of research on cross-country analysis, and one of the things that's coming out of the most recent research is the complementarity of policies. You can't just, sort of, talk about skills policies without also talking about competition policies.

For example, I agree completely with the issue about poaching. Particularly small, medium-sized enterprises are challenged where if they train and then, you know, their person is poached. So, that points to having an active labour market policy that has a role…intervention by a policy maker. Perhaps through some sort of subsidy or tax credit.

However, if the environment in which the businesses are operating is not competitive, then that is not going to yield the type of overall improved environment, or the effectiveness of the active labour market policy. So, you really have to have both of those together. So, you can't have active labour market policies that are expensive in an environment with a lot of zombie firms; it's not a recipe for success, either for the companies or for the workers. And so, there has to be this combination.

The other focus is on, you know, who is going to do the training. If we're looking at an active labour market policy, are we looking at within-firm training that is paid for, you know, with a subsidy or a wage credit, or are we talking about delivering these training skills at a third party. And again, I think there are some interesting competition issues that come up in the delivery of skills when you have it done by a third party, of course informed by what skills are needed, as opposed to having it done within the corporate setting itself, the company setting.

And then the last point that has really…where the OECD has done quite a bit of analysis, is something we haven't talked about yet, which is R&D tax credits or R&D subsidies. And again, very important to think about the channel through which you might try to promote innovation through those different policies. You know, you have to marry those policies with an environment that's going to promote the competition, so that those policies actually end up, kind of, getting you where the goal-line is, which is higher innovative output.

BvA: Kitty, do you want to make a comment on the R&D tax credits from a UK perspective?

KU: Well, I think…in fact, I think it's OECD evidence does show a positive impact of the R&D tax credit system that we have in the UK. There have been issues about designing it well, particularly for smaller companies, to make sure that it's at the point of decision that it's having the impact. We've seen a rise in, sort of, almost no-claim-no-fee agencies getting involved, which makes you think it, sort of, after the event certainly needs looking at. But in terms of bangs for your buck, I do think they work.

I think in terms of training providing, whether it's in-house or external, there are ways this is…this is getting slightly granular but there are ways this is already being done with the Lifelong Learning Guarantee, where there's a set of…massive, long list of accredited providers that do seem to get around that without having a competition effect. So, I do think it's quite doable as long as you know what the skills are that it's in the national interest to, sort of, holistically create more of.

CM: The one comment that I think is particularly salient today, as we have many policies that have been put into place in order to moderate both the pandemic effects on both capital and workers in firms, to moderate the effects of the energy shock on households and firms. A very important question as we go through the next year or so is to think about how to move from the pandemic and energy policies of a forbearance or other factors, in order to revive, sort of, the creative destruction that is really a critical ingredient. Is that the only ingredient, is that the only way to get productivity higher, to get investment growth higher.

But we need to think about how we're going to move policies from the pandemic and the energy shocks towards a more sustainable set of policies for the longer term.

BvA: Yeah, and I think that's actually a great comment, because I do think that whilst the challenges were seen in many countries…but certainly also in the UK, sort of, the consistency of policy, the longer-term focus of policy. You know, in the UK we quite often complain about policy churning. That actually creates more uncertainty and more volatility for businesses to actually make these kinds of investments. And particularly if they're, sort of, you know, large innovations and large investments in innovations with very high stakes.

So, I think that making that transition to really get that, sort of, more sustained, longer term focus I think is very important for businesses to be able to respond to policy initiatives.

Look, we can't make it a lot better as a starting…but for this season, that it is…the outlook for productivity isn't great, but it is also not impossible to look for the upside of this. And there are definitely steps that policy makers can take, that businesses can effectively respond to, that can actually get us at the higher end of that forecast range. And that would really help enormously, because as mentioned, productivity is such an important driver for the development of the economy for economic growth and improvement of living standards.

So, lots of topics that have been raised here that we will discuss in a lot more detail in the upcoming 11 podcasts in this season for 2023. But Klaas de Vries, Kitty Ussher, Catherine Mann, thank you very much for setting the stage here, and we're all looking forward to seeing you hopefully on another occasion at one of our podcasts at Productivity Puzzles.

KdV: Thanks, Bart.

CM: Thanks very much.

KU: Thank you, Bart.

BvA: Links to the data and reports we have been discussing in this podcast are available from the show notes for the podcast.

Our next episode of Productivity Puzzles for February will be on science and innovation policy. Subsequent UK Governments have placed a lot of emphasis on science and innovation for the future of our country. There's been a lot of rhetorical ambition and some snappy slogans, such as 'Science Superpower' and 'Innovation Nation'. But what has changed in the way the nation's science system is wired up, and how much of that change is being worked through to realise these ambitions.

We'll speak with Professor Richard Jones of the University of Manchester, who has extensively written about research and development and innovation policies. And if you want a good pre-read on this topic, you can find a paper from Richard, titled 'Science and Innovation Policy for Hard Times' on our website at productivity.ac.uk.

We'll also be joined by Professor Diane Coyle of the Bennett Institute for Public Policy at Cambridge University, to comment on this important topic for the future of productivity in the nation.

You can sign up for the entire Productivity Puzzles series through your favourite platform to make sure you also don't miss out on any future episodes.

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Productivity Puzzles was brought to you by The Productivity Institute, and again this was me, Bart van Ark, at The Productivity Institute. Thanks for listening and stay productive.

**End of transcript**