

Munira Mirza ([00:00:06](#)):

Hello, and good evening everybody. It's a great pleasure to welcome you all here to Churchill College in Cambridge for the opening of the Great Stagnation Summit. My name is Munira Mirza. I'm the Chief Executive of Civic Future. And for those of you who don't know us yet we are a new organisation that aims to encourage more talented people to go into public life and prepare them with the skills and the knowledge they need to tackle the big challenges facing the UK. As part of our work we run training and public events throughout the year. We just launched a new Fellowship programme for people in the early stages of their career. And a big part of our mission is to invigorate public debate about the big challenges facing the UK and crucially to bring people together from different parts of the political spectrum and people from outside Whitehall and Westminster into the discussion.

([00:01:04](#)):

I think politics, so much of politics feels like it's being conducted online and in angry soundbites. I think some of us have been guilty of that from time to time. But we believe that it's important to have physical spaces, places that people can meet face-to-face, and talk about complex problems. And that makes it easier to have a grownup discussion. This is our first annual conference and we felt it was quite clear from the start that our theme should be economic stagnation and growth, because that is the number one issue facing the UK today. Obviously many, many millions of people around the country are feeling the pain of inflation. They're seeing their mortgage rates rising and we're experiencing the biggest wave of public sector strikes in a generation. But even before the pandemic, the cost of living was going up. The cost of housing, of childcare, both of those had gone up by around 50% over the last decade and it was becoming more and more unsustainable for many people, particularly younger people.

([00:02:12](#)):

Since the financial crash in 2008, we've seen real term incomes decline, and we've seen a flatlining of productivity growth, and there are many long-term causes for that that precede the financial crash. It's often said that politics is downstream from culture, but I'd argue that culture is also downstream from economics. And today, as more and more people find it hard to buy a house, to raise a family to do the things that previous generations would've taken for granted, they're becoming more and more disillusioned with the system that we have and the tenets of liberal democracy, which I think we should all be worried about. So over the next two days, we're going to look at the causes for this particular malaise. We're going to look at why there's been a slowdown in growth, why there's been a slowdown potentially in technological innovation, what the causes are, and what we can learn from history, what people are doing now to try and drive innovation, and crucially what people in public life should be doing about all of this.

([00:03:14](#)):

The name of this conference is inspired by the title of a seminal book by Professor Tyler Cowen, and I'm delighted that he's giving the keynote lecture this evening. His book *The Great Stagnation: How America Ate All the Low-Hanging Fruit of Modern History, Got Sick and Will (Eventually) Feel Better* - it's a fantastic title - was published in 2011 and describes a slowdown in economic growth and technological innovation in the US, which when I first read it, felt very relevant to the situation in the UK. For those of you who know Tyler's written work, you'll be familiar with his very plain and direct style, even blunt you might say. And I remember when I read the book for the first time, I underlined one sentence in particular that read simply about America: "We thought we were richer than we were". And it's the kind of plain, unvarnished truth that I guarantee you would never hear from any politician anywhere in the world.

[\(00:04:13\)](#):

But sometimes facts like that need to be spoken out loud. Otherwise, we never really face up to reality. But rather than accepting decline, Tyler in his book, and I hope will argue tonight, that there are ways out of this and that there are also reasons to be optimistic. So I'm very much looking forward to what he will say this evening, along with our fantastic lineup of speakers over the next two days. You'll also see that in the schedule, which is printed on the back of your lanyards, that there is time tomorrow afternoon for an Unconference. I don't know how many of you have been to an Unconference before. This will be my first time. I'm an Unconference virgin. And the idea is that it's a way for everyone to participate if they want to.

[\(00:05:01\)](#):

If you want to suggest a talk or a topic for the session tomorrow, have a look at the pieces of paper inside your conference brochure, which gives you instructions. And apparently there's a board at the Møller Institute where we'll all be tomorrow during the day where you can write up your proposed topic. And I'm told that this will all flow very smoothly and there will be no hiccups or difficulties in the running of this. So I encourage you all to participate. I'd like to say just two final things very quickly: first about the venue and then about you, the audience. The venue: we're in Churchill College which I don't know if you are aware of the history of this institution. It's the first modernist building built in Cambridge.

[\(00:05:47\)](#):

It was built in the 1960s, obviously in honour of the great wartime Prime Minister Winston Churchill, but it was dedicated to maths, science and engineering. And even today a very large proportion of its student intake is studying those subjects along with arts and humanities, because there's always been a mix in the history of this college. And it was envisaged originally by Churchill to be the UK's equivalent of MIT. And it has a very long illustrious history, with association with many Nobel Prize winners. Also it was built on a green field, for those of you who are interested in planning, around the city of Cambridge. And apparently it was relatively quick to get planning approval. So I think there's a lot we can learn here. I couldn't think of a more suitable venue for the themes of this conference, which are about science and progress.

[\(00:06:40\)](#):

And really this building that we're in is a reflection of the post-war faith in those themes. Secondly, about you, the audience. I'm really pleased that we have such a mix of people from different professional backgrounds and also different political traditions. I think that politics is too often very tribal. And on these subjects that we're discussing in the next two days, actually there is often a lot of commonality. And I think we will all benefit from talking to people that we haven't met before, and breaking bread with people who perhaps we disagree with, online or in other spheres. So I do encourage you to talk to new people as well as catch up with old friends. Finally, I'm delighted to hand you over to our Chair for this evening, Dame Professor Diane Coyle.

[\(00:07:31\)](#):

She is the co-director of the Bennett Institute for Public Policy here at Cambridge. And the Bennett Institute is also a partner on this event. So I'm really pleased to be presenting Diane. And it's been fantastic to work with the Institute. Diane probably needs very little introduction to lots of you in the audience. She is an authority on the themes of progress and productivity, her latest book, *Cogs and Monsters: What Economics Is, and What It Should Be* is a great read, very accessible to the non-economist, looks at how economics needs to change to keep pace with the 21st century and the digital economy. Diane is also a director of the Productivity Institute. She's a Fellow of the Office for National

Statistics. She's an advisor to the National Infrastructure Commission and many, many other public service roles that she's doing or she has done. And she has just been awarded a Damehood in the King's birthday honour list for her contributions to economic policy and public service. So she's a fantastic person to be chairing the session this evening and I'll hand you over to her now. Thank you.

Diane Coyle ([00:08:46](#)):

So thank you very much, Munira. Welcome to everybody. It's a pleasure for the Bennett Institute to partner Civic Future in this event. For those of you who don't know us, we're a relatively new public policy institute here, about five years old, and committed to interdisciplinary work and to doing research that very directly speaks to the big policy questions of the day. So we have a catch line: The right kind of growth, fairly shared - which sums up. But I do encourage you to have a look at our website and look at some of the research. I'm also a fellow of Churchill College, so it's a double welcome, welcome to my college as well. We've got this small theme this evening of progress, and as you heard, we're going to hear first from Tyler Cowen in the keynote. He and I were graduate students together at Harvard more years ago than we might care to remember, but we've known each other for a very long time.

([00:09:37](#)):

So we're in for a treat with his keynote. Then we're going to have responses about five minutes each or so from Sam Bowman and from David Edgerton and from me. And I'm hoping I can disagree with everybody on the panel. And then of course, we might have some discussion among ourselves, but we'll come to you in the audience. So get your thinking caps on and be prepared to take part in the discussion later. I'm not going to read out the biographies because you've got them in the programme. I'm going to hand straight over to Tyler - over to you.

Tyler Cowen ([00:10:14](#)):

The Great Stagnation was such a disillusioning idea. If we go back and put ourselves into the mindset of post World War II America, the country had seen so many triumphs. We put a man on the moon, there seemed to be major technological advances every year. And then the world of tech came along. We now call it Big Tech, a more derogatory term. But if you go back to 2010, 2011, the view is that all people would be connected to each other. Politics would change, information would flow, and that just wonders were before us. And then around 2011 or a little bit before, a number of people started speaking up and they raised their hand. You know, not to cry, Stop, but to cry, Hey, this is wrong. And at first the claim was the wonders of the recent world since say 1973, were not actually such great wonders at all.

([00:11:12](#)):

And if you looked at the productivity statistics starting in 1973, for much of the world, including Europe and the UK, there's a marked decline in productivity. Now, there was an uptick, again, something like 1995 to 1998, and people thought, Well, everything's back on track. We're in this world of the wonders of tech. I think Peter Thiel may have been the first to say it. And he uttered the famous remark: They promised us flying cars. And what we got was 140 characters. Circa 2023, you don't even always get your 140 characters, actually. And as the years passed, more productivity numbers came in, there were more arguments. But the claim that the productivity numbers didn't pick up all the wonders of our society, it just seemed more and more true. And if you looked at, you know, quantity data on variables such as investment or labour supply behaviour, it just seemed to be more and more the case that there was indeed something wrong.

([00:12:17](#)):

And if you now fast forward to the current day, we're in a world where, you know, say the Fed or the Congressional Budget Office, when they make productivity forecasts, they in essence have admitted the Great Stagnation thesis was at least to some extent correct, that it is now a mainstream view that productivity has declined in the western world and Japan. And this is a problem for living standards. It's a problem for government budgets. It's all the more a problem in an ageing world. We're still trying to figure out why it declined. I'll just tell you briefly my core hypothesis. But I have about 17 other different suggestions. But in my view, the core reason was there was this miracle technological pairing of fossil fuels and powerful machines that truly starts being mobilised in the post-Civil War era in the United States. And it just changes the whole world.

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So you have consumer society blossoming in the 1920s, but the groundwork for that begins to be laid, say in the 1870s. And we have cars and we have planes, and we have electricity, and then we have radio, we have earlier computers, we have, you know, the modern world, right? So if I think of my grandmother, she was born in 1905, the first 50 years of her life, everything changed. When she's born, most Americans live on farms, don't graduate from high school. Cars are not really a thing. But by the time she is 50 in 1955, we have something that looks a fair amount like modern America. I mean, you can visit 1955 America now and you can live there. My kitchen is basically 1955 America with a microwave added. And I cook in there just fine. I can get better spices, but the basic technologies are the same.

[\(00:14:09\)](#):

If you take the first 50 years of my life - I'm born in 1962 - I was born, you know, my mom drives me around in a car. Now I drive her around in a car. Oh, my car's safer. It has side airbags, but it's still a car. Like, it's not from going, it's not like going from horse to car. And computers are a big change. But so much else in my life, just what furniture is like, how you sit on the sofa. Well, you watch TV. Over those 50 years, it was nothing like the changes my grandmother saw. Because we had exhausted what we could do with fossil fuels and powerful machines. Again, there's 17 other factors. Our government's regulated too much would be one of them. But I want to just fast forward to the current day because, and here's the good news, I now firmly believe that we are getting out of the Great Stagnation.

[\(00:15:01\)](#):

This is not fully confirmed. We are not in a time period such as the 1920s where all of the goods are piling onto the table and it's just a new era of unrivalled plenty. Certainly not in Great Britain, also not in the United States. But something fundamental has changed. And I think there are three breakthrough areas, which I will mention, and we're on the verge of entering a new phase where much of the economy is still quite stagnant. But we have three amazing areas where we are doing things that we just had not done before. The first is biomedicine. The simple fact that we had a Covid pandemic and we had effective vaccines in less than a year. I recall reading in April 2020, April's kind of late in the pandemic, there was a New York Times symposium of quote/unquote experts. And they were all asked, When are we gonna have a vaccine?

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The most optimistic one said four years. Obviously that was totally wrong, it was in less than a year, certainly less than a year from April. In fact, the vaccine existed in April. And the experts are saying four years. If you look at progress against malaria: I think it's likely within five to 10 years. HIV AIDS, there'll be an mRNA vaccine for that, possible progress against cancer. CRISPR progress against dengue sickle cell anaemia. There's something about biomedical sciences. We are entering a golden age of new progress. And the question is, How well do you take care of yourself? How much of that progress are

you going to see? I think just as the old fundamental breakthrough was fossil fuels plus powerful machines, there's a new breakthrough and it's very obvious. But the new breakthrough is computation. I don't think it's exactly the internet. I used to say, Right now we overrate the internet, but we underrate what it will be doing for us in the future.

[\(00:16:59\)](#):

Maybe we're now at the breakeven point. We're just about - actually now we underrate the internet. People hate the internet, right? Oh, the Internet's destroying democracy. It's ruining our children. Think of the new fundamental general purpose. Technology is computation. So a lot of the biomedical advances are driven by computation. The mRNA vaccines against Covid in some cases were designed in a day in a laboratory. Again, very difficult to fathom under earlier paradigms. So biomedical: huge advances. Some here, others on the way. The second area don't really need to tell you, but artificial intelligence - that's maybe a bizarre term. It's another form of computation. We're finally putting computation to use. But if you look at GPT 4 which will still get better, but one can genuinely say human beings have created a new intelligence with a fair amount of generality to it. It can pass a bar exam, it can pass a medical exam.

[\(00:18:01\)](#):

My colleague Brian Kaplan, he gave GPT 3.5 his labour econ exam. This was in November. I think it got a D or D minus. He gave GPT 4 his labour econ exam. Once we had GPT 4, it got an A. It's a big difference. It's not perfect. It's not creative in the way that the best human geniuses are, but it can do so many things so well. It's like we all now have at our sides, you know, another research assistant architect and colleague, and maybe they're like A minus colleagues rather than Einsteins. But that's an amazing breakthrough. And we have it. And again, there's going to be a lot more progress. So there's that area. And then I would say the third area is green energy, which is further away and a bit more speculative. But if you look at cost curves for solar power, wind power, there are now many years, actually not the last say, two years, but for a long time you have the costs falling 10, 15% a year, solar and wind, depending where you are.

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But they can be economical. There's the question, Will the United Kingdom in fact embrace actual wind power on a larger scale? The state in America that has the most solar, it's Texas, right? Very conservative state. A lot of climate change denialism in Texas and a lot of solar power. If that's what it takes, fine. There's plenty of talk of nuclear fusion working. I don't feel I can judge that one. But some of the smartest people I know are putting many millions of dollars into this project. Maybe it will work. Modular, nuclear, nuclear reactor, speculation about geothermal. So we're now entering this new era, green energy, AI, biomedical are just going like crazy. All driven by computers, computation, and to some extent internet. So I think the story of the next 20 to 30 years will be what's it like to have an economy that's maybe two thirds stagnant?

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Because believe me, so much of what's going on is still a mess. Like in the United States, you look at productivity in the construction trade, it is down. It's not just flat, it seems to be down. So we are not seeing major breakthroughs in every area at all. So you have a few sectors of your economy which are amazing everyone. And the rest being an entire disappointment and just learning how to deal with those shocks, that disruption, I think will be the next task before us. I'll just close with a few remarks on the United Kingdom. Whenever I come here, I think it's my fourth trip here in the last 12 months, there's so much pessimism and I feel I understand why. So here, as far as I can tell, real wages and productivity have been flat since 2008. It's a long time. You can't just say it's a business cycle.

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You can't blame it on austerity though, people do. Whatever you think of Brexit, you can't blame it on Brexit mainly. So there's some fundamental structural problem. And again, it's like what caused the Great Stagnation? There's 17 different things you can talk about, but here's just one factor, it seems to me under-emphasised in the discussions I hear here. If you ask yourself a simple question, What are the places in the world where some new idea can be developed and turned into a success? That South England is one of the few places in the world where you can say that. The United States, even then just a few parts of it, you could say Switzerland, yes, parts of Germany, Japan, you could debate, but China, you could debate. I think I would still say no for the most part. But again, you could debate it, but South England, you cannot debate.

[\(00:21:51\)](#):

It is one of the handful of places in the world where you can do new things. The idea, the research. I don't mean that the whole thing is produced here. That's not true anywhere, but succeed with something. So you see it with vaccines, even simple things like healthcare data. So the steroid that people took to protect themselves against covid, where did the data for that come from? Came from Britain and it worked. Saved thousands of lives around the globe. Deep mind pioneer in AI. Where's that company from? I don't need to tell you all. It's from the UK. Now, how much of the returns from those innovations will the UK get? It seems to me there's a longstanding trend in your history to be amazing at producing ideas and terrible at capturing the gains from those ideas. And this isn't a recent thing. You can go back in time.

[\(00:22:46\)](#):

Here's one of your new ideas. You could call it America. You can't call it the United States. I'm not saying you haven't benefited from us, but it did like slip away just a little bit. Rule of law, by no means exclusively a British notion, but you're extremely important in the development of that idea. You could fast forward to James Bond, the Beatles. They're still putting out another song using AI. Can you believe that? So you're like masters of soft power. Even the notion of colonialism. I'm not saying it's a public good. Like a lot of it was very bad. Some of it was good, like clearly good for Singapore, but there was a publicness to what you did. So you've spent actually centuries building out things that have a strong publicness component and that producing publicness, you're one of the three or four best places in the world.

[\(00:23:41\)](#):

Now, it used to be way back when, let's say like pre-1880, if there's a new thing, whatever the thing is, or like, you know, burning coal or a certain way of producing textiles, like of course you would have to put that thing in what was then Britain. But a much better developed world. The empire's gone. There's more intrusive government regulation here. You no longer like have to put the new thing here. So deep mind might stay here, but will the UK South England be a centre for AI innovation? Could be yes, could be no. But you don't have to be here anymore. And that's the difference. And maybe that's been the case since about 1880 or maybe the 1920s. But you don't have to be here. You're still masters of producing ideas. The gloomy talk I hear like way underrate this place in my opinion. But you still have this core problem of where are you actually, or how are you actually going to convert those ideas into higher living standards for the great majority of your people? Anyway, I was told 20 minutes. Those are just some of my thoughts on the Great Stagnation. And now we turn the floor over to other people. Thank you all for coming.

[\(00:25:00\)](#):

And just to put in a pitch for Civic Future, if the United Kingdom is to have this bright promising next series of decades, you will need talented people. And yes, working in the public sector, that's why I am excited about what Munira is doing. It's why I'm here. So I mean, let's do it. It can be done. And best of luck to us all. Thanks.

Diane Coyle ([00:25:29](#)):

So now you've been told. But we're going to turn first to some responses to Tyler's remarks. Thank you so much for getting us off to a great start Tyler. Sam Bowman is going to go first.

Sam Bowman ([00:25:40](#)):

Thanks very much. Thanks everybody for coming to this. I'm delighted to see so many friendly and some unfriendly and some unfamiliar faces as well. So it's good to be here. I'm going to do something that I almost never do, which is be the pessimist and be the disagreeable person on the panel. So I think that at the risk of being too disagreeable, the Great Stagnation is just the wrong question or the wrong problem in the UK. It almost entirely refers to frontier growth, the kinds of total factor productivity ideas that Tyler's talking about, the jet engine, nuclear power, mRNA vaccines, AI, things like that. But if you were in say, Poland or Thailand, the Great Stagnation is kind of irrelevant to you. It matters to some extent. It does, it does have an effect on the kind of limit the technologies that you can have.

([00:26:24](#)):

But for the most part, you're trying to catch up with the frontier, which let's for say for the purposes of this conversation is the US. And my claim is that the UK is a lot more like Poland at the moment than it is like the US, albeit with much worse growth than either Poland or the US. And I think we're so far behind the frontier that worrying about the frontier is a distraction from the things that we should be worrying about, the kind of catch up growth that I think that we should be thinking about. So I'm going to kind of pepper you with some statistics. The US is 39% richer per capita than the UK, 38% more productive in terms of output per hour worked. Real UK wages are forecast to be lower in five years time than they are today in the UK.

([00:27:00](#)):

Productivity growth in the US was twice as fast in the period since 2010 compared to the UK. To put that in perspective, Americans could stop working on the 27th of September every year, and they'd still be richer than Britains working for the whole year. Or I think the most dramatic example is the adverts for jobs as car wash managers at Bucky's, which is a gas station convenience store chain in Alabama are for jobs that pay triple the UK median wage: \$125,000 a year compared to about \$40,000 for the UK. And costs are higher too. The cost of a median square foot of housing is double in the UK what it is in the US. The cost of office space in Birmingham is 44% higher than the cost of equivalent office space in Manhattan. And the industrial price of energy in the US is an average of 7 cents per kilowatt hour across the country.

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The industrial price of energy in the UK is 19 cents per kilowatt hour. So more than double, almost triple. And the industrial price of energy in the UK has tripled between 2004 and 2021. So pre-Ukraine. So London is the richest part of the UK. It's the glimmering hope for growth and ideas, and it has the wages of Mississippi and the housing costs of Washington DC. UK GDP per capita, I'll finish with my stats in a second, is about to be overtaken by South Korea and good work and, you know, fair play to them, by also Slovenia. And if the UK continues on the same trend of growth that we've had over the last 10

years, we will be overtaken by Poland in 12 years. So my conclusion on this point is that the UK is a front - is thinking like a frontier economy, when it should be thinking like a developing economy.

[\(00:28:37\)](#):

Now what's going to happen? What's the prognosis for the UK? I think there is virtually no recognition of how bad things are in the UK among UK elites. And Stefan Dercon, a development economist has a book called Gambling on Development, where he argues, and I think with somewhat persuasively that countries that have successfully developed over the 20th century have done so because their elites have come to a conclusion and a consensus that they need growth. Because moving to growth from a developing economy model requires tough choices, hard decisions and very, very large costs in the short run. And you need an elite bargain to get growth. And I think that's quite a compelling idea, even if we don't have to say that it explains everything. And I don't think we have that in the UK at all. I think that elite preoccupations in the UK are above all net zero, delivering Brexit, reducing inequality, obesity, regulating tech, price caps, data ethics, cutting immigration, gender, and racial pay gaps.

[\(00:29:33\)](#):

And many, many things like that. And when growth is mentioned, it's used to justify unfunded and badly targeted tax cuts. And the less we go into the trust fiasco the better. But it certainly hasn't helped the case for getting elites to care about growth. So I think the UK has an elite failure. And when you look at something like housing, which in my opinion is the lowest hanging fruit for increasing growth in the UK, it's very common and very easy to attack NIMBYs and I I do it and we all should attack NIMBYs. But elites talk about ideas like embodied carbon, nutrient neutrality, bee bricks and swift bricks in, for biodiversity. They repeat memes about, Oh, it's not really about the high cost of housing. Housing in fact is not costly. It's all to do with interest rates, interest rates alone are the cause.

[\(00:30:12\)](#):

So elites are not serious about housing. They're not serious about energy either. I think one of the most compelling explanations for the Great Stagnation is given in the book, Where's My Flying Car, published by Stripe Press. And this points out that the Great Stagnation coincides in an end to a historic increase in per capita energy use, coinciding with the oil crisis after which point our energy use begins to level off and then decline. And I think most elites have buried their heads in the sand about both the cost of energy in the UK and the implications of moving to wind and solar for most things. And they point to things like the levelized cost of energy, which completely flatter renewables because they ignore the cost of intermittency. They ignore the cost of needing backup gas power. They ignore the fact that producing energy in the middle of the night is not very valuable, whereas producing energy during peak demand is very valuable and even marginal improvements are off the table.

[\(00:31:02\)](#):

So, to take one very small example, maybe people in this room are familiar with the Aarhus Convention, which is a rule that the UK has signed up to that says that litigant or plaintiffs, suing infrastructure projects have their legal costs if they fail, capped at £10,000, their legal damages, I should say. How many people outside of this room have even heard of the Aarhus Convention, let alone will be willing to consider repealing it so that it's harder to sue and bring judicial reviews of major infrastructure projects. So I think the result is that we, people in this room, people who care about growth have two choices. One is we can try to persuade elites to care about growth. The other is that we could do things that don't require elite consensus. I am personally signed up to the idea that the latter is what we should do.

[\(00:31:45\)](#):

I like the idea of street votes because it's effectively a win-win that doesn't require winning big arguments and hopefully gets things built by sharing some of the great growth gains from building new things. I think we could do that for other projects, but it does have its limits. The alternative is that we actually try to change people's minds, and we actually try to get elites to understand how bad things really are in the UK. And I think without something like an IMF bailout as we had in the seventies, that's very unlikely to happen. But I'm optimistic for this conference being the thing that proves me wrong and that begins to turn the tide. Thank you.

Diane Coyle ([00:32:23](#)):

Thank you, Sam. Great statistics. I can already sense some challenge in the room, so that's fantastic. David.

David Edgerton ([00:32:29](#)):

Well, thank you very much. Well, Sam, I agree with a lot of what you say. Certainly there is an elite problem in this country, which when you think about it very seriously, I agree very strongly that the UK is not at some notional technological frontier. For all the reasons that you gave, I think we have indeed had a lot of delusional talk about being a science superpower or aspiring to be a science superpower, which has been deeply corrupting of our thinking about actual possibilities for the future of this country. So you're absolutely spot on there. You also spot on to recognise the deficit in productivity and in many other things that the UK shows in comparison with many other countries of the world.

([00:33:20](#)):

And I think indeed, instead of a set of policies focusing on innovation and grandiloquence, we need a politics of improvement coming out of a sense of modesty about the UK's position in the world. So I'm very much with you on all of that. I'll just say some things about what Tyler had to say. Seeing David Goodhart in the room reminds me that in the nineties, he asked me to write an article for Prospect, which he was then editing, on technological hype. The article's called Ever Accelerating Hype. And it was a critique of the then very common notion that things were changing faster than ever before. That hype has died down and Tyler is responsible for that in part at least.

([00:34:21](#)):

Like Tyler, I very much kind of agree that at least at one level, people living in in the past experienced much more dramatic change in their lives. And my favourite period is really kind of around 1900, where you go from a world, you know, without motor cars, without aeroplanes, without radio, without cinema, you know, without fast transatlantic steamers and many other things. I mean, really transformative changes as Tyler has indicated and indeed much of the extraordinary transformation that we see in the world today, and we shouldn't forget this, and the rate of transformation of China is historically unprecedented. I mean, there is no Great Stagnation there. It's the exact opposite. But that is in large part about the extension to China of some of these very long established techniques.

([00:35:26](#)):

But where I want to disagree with Tyler is the sense that there is a straightforward relationship between the dynamism of technique and rates of economic growth or productivity growth. After all, the interwar years were not a period of very high growth. He picked on the 1920s in the United States. That's a, I think, a rather special case. The twenties were roaring in Manhattan, but certainly not in hindsight much of the rest of the of the world. And of course, we had the Great Depression, and the US economy did not do well, right across the 1930s, indeed was saved by the Second World War. In other words, we

shouldn't expect there to be a particularly direct relationship. And the other point I'd make is: How do we actually understand what techniques are in fact important for productivity?

[\(00:36:33\)](#):

Economists, economic historians, publicists for technologies are very, very confident that we know what the key techniques are. We know the assembly line was important. We know that there are things called general purpose technologies. We know that biotech's important. We know that IT is important. It's always the same stuff. You don't hear people saying things like, Actually cemented carbide tools transformed the rate of productivity in manufacturing industry in the 1930s, forties, fifties, and sixties. I mean, how many people here have ever heard of cemented carbide tools? One of you. Fantastic. I shall share a drink with you afterwards. That's wonderful. And one could go on. What are actually the sources of productivity at the level of machines? We really don't know, but we think we know. We think we know. So we attribute changes to dramatic innovations that are very familiar to us, but we don't measure the impact of these particular techniques.

[\(00:37:45\)](#):

We seem to know when they have their impact. Historically, we assume that the things that we're all talking about now will transform our economies in the future. Now, as a historian of these matters, I can tell you that that way of thinking about the relationship between technology and transformation is very, very old fashioned. It's routine. The Wonder Book of Science, it was a publication of the interwar years. It was full of this stuff. And I think we're still at that level when we come to talk about technology and innovation. I want to stress our ignorance of the relations between technical change and productivity change. I want indeed to insist on our ignorance of the material constitution of our societies. I want to insist also on our ignorance, not just of the machinery that we use, the techniques that we use, but also our ignorance about innovation.

[\(00:38:48\)](#):

We all think we know what innovation is happening, where it's important, but actually if you ask people, How do you know that? The answer is an embarrassed silence. The answer is, the real answer is, Well, we all read The New Scientist, or we all read The Economist and perhaps Twitter. Yes. But what we are not in touch with is what is actually happening in the great centres of innovation in the world. The great enterprises. The startups. We just don't know what's what's going on there. I mean, David Sainsbury may do, but as a collectivity, we don't. So we're living in a world of hype that's generated by interested parties. That's the reality of it. And it may be a kind of an inevitable reality for policy. But it's not the reality that drives the economy. It's something else that's going on. So as well as being, as calling for modesty and improvement when it comes to British public policy, I think we ought to be modest about our claims to understand the relationship between technology and innovation and the two very different things and the transformation of the world. And even the question of economic growth and productivity growth. I'll leave it there.

Diane Coyle [\(00:40:15\)](#):

Thank you very much.

[\(00:40:22\)](#):

So, as I hoped I disagree with each of our panellists about something. So Tyler, I agree with you about the exciting technological innovations that we're seeing. I do think they're amazing. Computation is essentially free. Its price is still falling at an extraordinary rate. And I disagree with you, David, about giving up on the frontier. I think we should aspire to be a signed superpower in the bits of the frontier where we plausibly can. It's not the whole waterfront, but we should do that. But Tyler, I would like you

in a moment to respond to David's point about this isn't changing people's lives. You made that point yourself about your grandmother. Hans Rosling has a wonderful Ted talk about the impact of the washing machine. Part of that, it seems to me, is because a lot of the technology is coming out of quite specific types of people who probably don't ever do their own washing and don't think about those kind of everyday innovations that would change people's lives.

[\(00:41:24\)](#):

So have a think about that for a minute. And there are things that haven't been raised. So we are living in a world, I think, in both the US and the UK, where we do have a food system that's making people unwell, obese, damaging the environment. We do have a finance system that's making its customers worse off. We do have a housing market that can't provide people with housing. We've got a pharma industry that in extreme cases is killing people, but needs them to stay ill. Now, Sam, I don't really like the elites framing, I have to say. Other people might call it capitalism or monopoly capitalism or the way that markets have become much more concentrated. And so I'd like to get some feedback from you about what you think about that and why the elites construct is a useful way to think about this.

[\(00:42:13\)](#):

And then finally, climate is a problem. Of course, elites can afford to worry about it more and have certain preoccupations about how to address it. But we are going to be, we are much poorer than we think we are because we've been using nature for free since at least the second world war and much longer. And in those post-war years, it wasn't the binding constraint on growth, that was physical capital and human capital. But now we're at a point where we'll have climate refugees, we'll have biodiversity loss, we'll have agricultural productivity falling because of the depletion of the quality of the soil. And those are real phenomena that mean that we are actually much worse off than we think we are. So I'm going to turn, go in the same order. I think Tyler, maybe a few responses from you.

Tyler Cowen [\(00:43:01\)](#):

There's a lot of pessimism in this room. I guess I'm the resident American. My first question is, Sam, is just, You do live here, don't you? So if you look at the two biggest scientific innovations with real impact of the last three years, vaccines and artificial intelligence, large language models right here, had a huge role in both of them. So not in every area, but from my point of view, you are a scientific superpower. I fully grant, that's not good enough. You need to get all the other things right to capture the gains from that. But I think you should be very optimistic, bold, and brash in pursuing it. Now the question about uncertainty, this may reflect my background as an economist, you know, how valuable are different things? The market figures that out. Now, the market may miss the externalities, I say with climate. But how much is a car worth or that I've cable tv, is that important?

[\(00:44:01\)](#):

Is that trivial? Well, I don't really watch it, you know, I would let it go. So it's trivial and there's an iteration. And over time, yes, we need to adjust for externalities, but we have pretty good measures for what's important. You see what people are willing to do without. You compare across countries and you can just look. What are the countries that immigrants want to go to? US, Canada, Australia, Ireland, and dare I suggest the United Kingdom. And that's another reason not to be so pessimistic. Just look at the simple brute fact of demonstrated preference. Where do people want to go? Not everyone wants to come here. It's in the top 10, arguably it's in the top five. Now you mentioned a lot of other problems we have, like, you know, food system, which we all would grant. But you do see in many countries, as people get richer and better educated, obesity is a problem, diminishes. It's not the only fix.

[\(00:44:57\)](#):

But I would say that's a reason to want more economic growth. We may come up with better, healthier things to eat. I don't think there's a good path where we go backwards and somehow try to replicate, you know, like how we ate in the 19th century. It's just not going to happen. But I see plenty of wealthy communities including in, you know, California Bay Area. People eat very well and they're not obese and they have more resources for exercise. And I don't see why that can't spread. I get there are sociological reasons why it doesn't spread. But again, it seems to me that's the path forward. Just to close by, posing a simple question. If you had to in the west, not in every country, I'm not talking about North Korea. But either deal with the problems of 2023 or the problems of some earlier era, pick your year. For most parts of the western world, you actually would rather have the problems of 2023, I would submit. And if we've gotten this far, I think we're able to do a fair amount better.

Diane Coyle ([00:46:00](#)):

Sam: woke elites or monopoly capitalists?

Sam Bowman ([00:46:03](#)):

Oh, do I have to pick just one? One of the technologies that I was surprised you didn't mention Tyler, is semaglutide. And I think that if AI does not end up being the life-changing technology that we hope it is, I think semaglutide will be remembered as the innovation of this decade that was the world changing innovation.

Tyler Cowen ([00:46:24](#)):

It's quite possible, but I'm reluctant to encourage people to take it. I'd like to see three to five more years of data. I think there's a very good chance. It's a huge breakthrough in biomedical area.

Sam Bowman ([00:46:35](#)):

Although of course it has been taken by diabetics for many, many years, for nearly a decade now. So we have a lot of real world use, but just not for the purposes of weight loss. But just for people who don't know, semaglutide is a, basically an appetite inhibiting drug. It's miraculous. In clinical trials of obese people, giving it to obese people means that without any other intervention, they lose something like 25% of their body weight. It isn't perfect. You have to stay on it, seemingly, to keep off the food, not to go back. But there's a whole new wave of similar drugs now that we understand how it works. And I'm extremely optimistic about it. And you know, Diane, you mentioned big pharma companies killing people. I think they save a lot more people than they kill. And I think that if you're concerned about obesity, it will probably be pharma and not, you know, low fat food or low sugar chocolate or things like that that will end up saving people.

Diane Coyle ([00:47:28](#)):

But it's an odd thing to be picking out as your great white hope for the next decade when real incomes haven't gone up for 15 years and are not going to go up for the next 15 years.

Sam Bowman ([00:47:37](#)):

Absolutely. My whole point is that I'm not particularly excited about new inventions being the driver of improvements in living standards in the UK. I think that it will be capital investment and improvements to the supply of things like housing and infrastructure and energy that will be the driver of improvements in living standards in the UK. I think it is worth remembering that we can have both a

very, very impressive and innovative tech sector or whatever the innovations are that take place and we can do a huge amount of good to global growth and to global welfare improvements without having a huge amount of benefit ourselves. You know, India has a hugely successful IT industry that massively improves global growth, but it still has extreme poverty in the country. And I don't think that anybody would say, Well, India has a great tech sector, so it doesn't need to worry about anything else.

[\(00:48:25\)](#):

Just on the point, you know, not only do I live in the UK, I moved to the UK. I chose here at the age of 21 when I finished university. And I am delighted I did, and I love this country. But the reason I am so preoccupied with growth is that it should be so easy. We can identify the problems that the UK has. The housing situation in the UK is astonishing. The price system is telling us, is screaming at us that we need to build more houses in places like Cambridge. I mean, 250,000 houses is just the tip of the iceberg as far as I'm concerned. Cambridge, if we let the price system work, and if we allowed development to follow where people actually want to live, Cambridge should be much, much, much larger than it is. I'm sorry if that's upsetting to people who want Cambridge to be a museum, but I want Cambridge to be a city.

[\(00:49:10\)](#):

You know, I want the UK to grow in the way that it did in the 19th century. And the reason that I do is because it has so many other benefits, partly accumulated over the centuries. And part of what's so good about the UK is the amount of investment, intangible and intangible capital. Our cities are some of the best in the world. I think the culture of debate and the culture of openness and enjoyment of disagreement in the UK is basically the reason I moved here. It's a much less conformist society than my experience of Ireland was, and I think than many European countries is. So I think there's a huge amount of its favour. Why elites? The reason is that elites are the people that you need to convince to change public policy. Ultimately, if you want to change public policy to make it easier to build houses or to make it easier to get cheaper nuclear, something that we should all be concerned about, something we really, I mean, if we take climate change seriously and take economic growth seriously, wind and solar can only be a very small part of the solution.

[\(00:50:04\)](#):

We need things like nuclear, but we need to get nuclear to South Korean levels of cost, which are about a fifth of the cost of nuclear being built in the UK or the US. To do all those things, we need regulatory changes. They don't need to be purely deregulatory. Sometimes it involves spending more money in certain areas. Sometimes it involves - they're doing advanced market commitments for, you know, small modular reactors or things like that. But we need elites to understand that this is the challenge and that many of their other concerns as with obesity I suspect, will be improved or solved by focusing on growth. Growth is the key that unlocks many other locks. And so I think if we want to get those changes, and sometimes we can do it without getting elite consensus, and that's what I'm trying to do. And many people in this room I think are working on those types of approaches. But if we want the kind of wholesale change that the UK needs, we need to convince elites that this is the problem that the UK has.

Diane Coyle [\(00:50:58\)](#):

What's your line on that, David? And are you warming at all towards the technology frontier?

David Edgerton [\(00:51:04\)](#):

I'll come back to that. I said I agreed that elites were important. I should add to Diane's comment. I don't agree with your particular characterization of the elite problem. But I think there is a problem with British political elites, for sure. And I think one of the most important problems that we have is the lack

of understanding these elites show - both ends of the political spectrum - with what Diane has rightly put forward as the central issue, which is the nature of modern capitalism, the dynamics of modern capitalism. That's what we need to be thinking about, not tech and not innovation and not growth, but what is the nature of the system and how is it changing things?

[\(00:51:54\)](#):

And that's again, something that we know very little about, and certainly about which the British political elites on both sides are remarkably ignorant. I don't think one could understand not only the move towards Brexit, but the failure to implement Brexit without understanding that a certain important part of the British elite had no understanding of the nature of modern capitalism. I think that's the fundamental issue. It's also very striking that most of our political economic discussion has precisely focused on innovation and entrepreneurs over the last 40 years as if the economy were just innovation and entrepreneurs. It so obviously isn't. But that's where the discourse has got stuck. So we do have a problem of conceptualization of the world that we are living in, which is a serious one.

[\(00:52:56\)](#):

I think we may be going back to an interesting debate about capitalism like we may have had in the 1930s in the face of stagnation of the productive capacity of capitalism and the damage it's doing that Diane highlighted, as well as the positive changes. And I think that would be a very good thing. I think we're a long way from that, partly because there isn't much, I suppose, intellectual space for that discussion. There isn't much discussion of capitalism, you know, within the economics profession. There's not much within history. Sociology doesn't exist as it used to. So it's not clear where the space is. It's in the academy. I think there are lots of spaces outside which are very vibrant at the moment I think.

[\(00:53:51\)](#):

So I do think we have a big problem of comprehension of the world. On the point about superpowerdom, I'm very aware that I could sound like somebody who's not in favour of great new innovations. Actually I am, I really want the world to change and I really want see good ideas supported and that certainly includes scientific and technical ideas. But I think we just need to be very realistic about the UK's place in the world overall. I mean, 2% of world manufacturing and 2% of world R and D doesn't make you a superpower. And while I certainly would want us to encourage really good work at the frontier of science in our universities

[\(00:54:44\)](#):

I think we need to be very aware that even if we manage to do that, it's not obvious that that will lead to a transformation of the economy. To give you a little instance, lots of claims in recent years that the UK was a world leader in battery technology. For all I know, it's true. I mean, there are some brilliant battery scientists. But it's - and I think the permanent secretary at the relevant ministry at the time pointed this out - that you've got to be careful if you're going to justify investing in battery technology because you are brilliant at it if you don't have a battery industry. And we still don't have a UK based battery industry. We had the Britishvolt Saga.

[\(00:55:34\)](#):

Which I think will repay some investigation. But the point is that a certain belief in British genius in batteries led to certain kinds of policies focused on entrepreneurship and startups, which have left us with no battery industry. In other words, one really does have to think seriously about where innovations in fact come from, not just universities, perhaps not mainly universities, but from corporations. One has to think about the place of the innovation in capitalism and in the capitalist enterprise. And we're a long, long way from doing that because we're just talking up, essentially

university invention and a very naive notion of entrepreneurship. And I think that is not going to lead us to in fact innovate, to in fact improve the lives of our people. It might make certain people in the city and in certain universities very rich, but we might in fact be redistributing income and wealth from the poor to the rich via that mechanism, rather than doing something positive for the majority.

Sam Bowman ([00:56:54](#)):

Can I come back just briefly - I'm not that interested in capitalism being good or bad. I think it's really - we're not in a position where we should care about the system. I think we should care about the margin and think about what we can do at the margin to increase growth. And to me, housing is the one area where the price system is screaming, as I say. And I just want to give two examples. A hectare of farmland, this is from 2010. This is from Kate Barker's work in 2010. A hectare farmland outside Cambridge is worth, at the time, at least about £18,000. If it gets permission to be built on for houses, it rises in value from £18,000 to £6.9 million. Now, I don't know if it's capitalism, I don't really care what we call the thing that is stopping us from building houses on that farmland, but I think it's very relevant that we are not able to build houses on that farmland.

[\(00:57:45\)](#):

Another example, if you look at some semi-detached or terraced houses in Brixton where I live in London, they probably cost about £1.3 million. And they're probably not very nice. I'm looking for a house, sadly, I'm not looking for a £1.3 million house. But they're maybe two stories tall. They're enough space for maybe a family of three, maybe a family of four, if you really squeeze people in. If you had permission to build mansion flats, very nice, very livable mansion flats to maybe triple the capacity of the land there, when the land really is the thing that's scarce, you could increase the value of the plot or the value of the property from maybe 1 million, 1.3 million to maybe two or 3 million pounds. So there's a huge amount of pent up potential demand for housing, both around cities and within cities. And I think that reflects what Tyler's point is, or one of Tyler's points, that there is in fact a lot of potential energy in the UK economy. It's just not really been released. I don't know if, I mean, it doesn't make a huge amount of sense to me to call that capitalism that's stopping us from building those houses. But I don't really care. And I'm not really interested in saying, Well, capitalism is when you can build the houses. I'm not interested in that word. I'm interested in building the houses.

David Edgerton ([00:58:54](#)):

But neither Diane nor I claim that capitalism was what was stopping house building in this country. Nor that it was good or bad. I think we're saying it was both good and bad and was crucial.

Tyler Cowen ([00:59:08](#)):

We just need more people to come right out and say it's good to build a lot more near Cambridge. That the chance of getting, whether it's a battery factory or something else, it requires much greater freedom to build. There's a lot of evidence from many different fields of study pointing pretty unambiguously in that direction. And it's not like the US where you can just put it in Austin or Nashville, right? I mean, why not just say, That's correct and I'm on board and I'm with Sam and we're going to do this. You seem so unwilling to do that. It's like holding back and hedging.

Diane Coyle ([00:59:38](#)):

So Tyler there's a very simple answer to that, which is: If you say that you don't win the election.

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David Edgerton ([00:59:42](#)):

Exactly.

Tyler Cowen ([00:59:43](#)):

Okay. But that's the whole point about having to change opinions.

David Edgerton ([00:59:45](#)):

You shouldn't infer that either Diane or I are against building of houses. We haven't said anything remotely like that but we recognise -

Tyler Cowen ([00:59:53](#)):

But you haven't said anything. That's my worry.

David Edgerton ([00:59:56](#)):

Well, but housing. Well, there there are lots of ways of changing the economy.

Diane Coyle ([01:00:02](#)):

So this is a great panel. We're getting some really good disagreement up here. But it's your turn now. I'm going to turn to the audience. We'll come back to the panellists later to carry on. We've been talking a lot about the economics and where it seems to me, as David's alluding to, we know some of the ingredients, but not the recipe for getting growth. And we have ended up with the politics where I think a lot of the action is. And it's why you're all here now. So there are already hands going up. I can see Deirdre first and then, a couple of people behind you. So let's take those three first.

Audience 1 (Deirdre McCloskey) ([01:00:38](#)):

Well, hi. My name is McCloskey. I always stutter on my first name. My first name is Deirdre.

Diane Coyle ([01:00:53](#)):

I'm not sure your mic is working. Is it turned on?

Audience 1 (Deirdre McCloskey) ([01:00:55](#)):

Is my?

Diane Coyle ([01:00:57](#)):

That's better.

Audience 1 (Deirdre McCloskey) ([01:00:58](#)):

Is it working? Alright. Now my friend Tyler has, I think you'll agree, Tyler has admitted that he was wrong about the permanence of the Great Stagnation.

Tyler Cowen ([01:01:19](#)):

I never said it was permanent. The subtitle of the book -

Audience 1 (Deirdre McCloskey) ([01:01:21](#)):

Yeah, yeah, yeah. But,

Tyler Cowen ([01:01:22](#)):

You know, it will get better.

Audience 1 (Deirdre McCloskey) ([01:01:23](#)):

But all your policy suggestions, all your rhetoric was about its permanence -

Tyler Cowen ([01:01:33](#)):

That's just not true. Read the last chapter of the book. Look at the book subtitle. I stressed the opposite of that for the last 12 years.

Audience 1 (Deirdre McCloskey) ([01:01:41](#)):

That's the current book -

Tyler Cowen ([01:01:44](#)):

No, no. The original book, read the last chapter. It'll all end, the breakthroughs we need, we've already made, we just haven't implemented them yet because we haven't taken enough advantage of tech -

Audience 1 (Deirdre McCloskey) ([01:01:53](#)):

Now wait, wait. As my friend David points out, we don't know what the crucial innovations are. So on both counts that we all have been wrong in the past about what the crucial innovations are. How can we turn to state policy as the solution if the policy means choosing winners, if it means hands off and allowing people to build housing on the edge of Cambridge, I'm all for it. But if it means to - look, you can't steer an automobile if you can't see the road ahead of you. If the steering wheel doesn't work very well, if there are no breaks. And that's the situation we are in so far as policy is concerned.

Diane Coyle ([01:03:24](#)):

Thank you. We'll do that thing of taking three together. Thank you.

Audience 2 (Sam Richards) ([01:03:30](#)):

Hi there. Sam Richards from Britain Remade. I wanted to start by quickly agreeing with something that Sam said about how we don't know just how bad things are. Over the last few months we've been running, as part of the campaign, we've been running focus groups across the country. 16 different groups and independently in every single one someone said that they were surprised, these are middle income voters, and they said that they were surprised that there haven't been riots yet - independently. This this was not prompted, given just how bad the cost of living was. But I wanted to disagree with this characterization in the discussion around elites. And Samuel was saying that we need to persuade the elites fundamentally to focus on group - on growth. Well, when I look around this room, and we have former and current special advisors, we have senior treasury officials, we have the authors of the last manifesto, members of the House of Lords, all broadly violently agreeing with the need to focus on growth.

([01:04:32](#)):

I'm not sure that it's really the elites who need persuading. Three weeks ago I did a focus group here in Cambridge and everyone is struggling with the cost of housing. A woman in the group has recently downsized her home and was going to have to downsize again. And yet also everyone in that group was horrified by the prospect of building more homes in Cambridge. And fundamentally, the politicians, who are not delivering the policy change that many people in this room want to happen, are simply responding to the incentives from their voters who don't buy yet the arguments that you put forward on growth.

Diane Coyle ([01:05:14](#)):

Thank you.

Audience 3 (Sebastian Payne) ([01:05:15](#)):

Thank you. Hello.

([01:05:16](#)):

Seb Payne from Onward. You've stolen my brilliant point now, which I was going to make to Sam, which is that you talk about the elite again, like you are not thinking about politics and all this, that you say, it's really simple what we need to do. Everyone in this room knows exactly what we need to do, but you can't convince voters who are the ones who elect the politicians who could actually do it. I think there's elites at the top of the conservative party who agree with every single thing you said and would love to do it. But the electorate is sort of there and I think there's a real danger this conversation becomes an echo chamber on Twitter, substacks and dare I say Cambridge colleges, where we all just sit and nod and agree with each other and remember that we are a tiny, tiny proportion of the country and also the intellectual thinking within the country as well.

([01:05:56](#)):

But I want to make a point to Tyler, when you talked about progress and computational power here, that in the end of the first Great Stagnation, that was a point at which Moore's law was starting to potentially reach its peak there. And Gordon Moore of Intel said it would come to an end at some point. The latest views are it'll be in the mid 2020s when we reach the point that computational power and transistors are not doubling every 18 months or so. Nvidia said last week that we have reached the end of Moore's law. Intel came out and said we haven't, so one of them's got to be right at some point. If we don't - if Moore's Law has reached the end there, why are you so certain that we are going to see that increase in computational power and how strong is that link between progress and that?

Diane Coyle ([01:06:39](#)):

So I'm actually going to answer that question on computational power Seb, because I've done a paper on it recently, and Moore's law has thought to have ended around 2005. But if you look at the cost of actual computation whereby people do parallel processing and use GPUs as well as CPUs, actually the cost of computation has continued to fall very dramatically. It slowed a bit around 2015, but it's still falling quite, quite dramatically. So just on that specific point. I think we ought to let Sam reply on the elite challenge. It's the people, it's not the elites was the challenge there, I think. And then I'd like to go back to the audience to pick up on Deirdre's point about in effect industrial policy and this debate we're having. So if anybody's got questions about that, I'm going to come to you next time. Sam.

Sam Bowman ([01:07:25](#)):

Great. So I think there are two claims. One is that persuading elites or getting an elite bargain is not a sufficient condition for the policies needed for growth. And the other is that we already have an elite bargain on growth. I think the first is very possibly true, but I would argue that it's a necessary condition even if it's not a sufficient condition. I think the second claim is a hundred percent wrong. I think it is for every one person in here, and I, and incidentally, I think that at least as I categorise it, probably maybe half of the people here I would say are actually serious about growth. I don't mean it personally, but I, you know, I imagine many people here are, for example, very admirably committed to net zero and, you know, put a gun to your head if you had to make a decision between if you were persuaded that there was a trade off between net zero and growth, and you may disagree that there is one, but if you put a gun to your head, I suspect you would choose net zero.

[\(01:08:19\)](#):

Not everybody, but many people here, that's fine, that's legitimate, but that isn't putting growth first. I think the same is probably true to do with tech regulation. I think in fact, if we look at what the government does, rather than what the government says, then we see that is much more concerned about things like online harms and is much more concerned about things like fair treatment of small suppliers of big tech companies, than it is with economic growth. And I think that the work that is actually being done in Whitehall and incidentally, I think that we really possibly underestimate how much independence and autonomy government has from voters. Voters have no idea about the changes being made to building regulations around net zero, for example. I'm sorry to focus on net zero, but it's pervasive throughout every level of government.

[\(01:09:01\)](#):

I'm extremely in favour of a carbon tax or similar type of approaches that are clean and simple and mean that every individual has to consider the cost of their actions with respect to climate change. I'm extremely against every civil servant in Westminster being given their own independent net zero target and having to bring in a net zero element to the work that they're doing, even when it's to do with things like the size and shape of windows in new build houses. That's pervasive throughout Westminster. Every single - and civil servants, if you talk to them, they'll tell you this - they're, they aren't necessarily happy about it, but that this is what they've been tasked with. You know, I think it's really, really hard to argue that the government or the political class or the political elite class is putting growth first, particularly when something like a third of what I would classify as the elite regards delivering Brexit as an incredibly important priority.

[\(01:09:53\)](#):

You know, you may or may not like Brexit, but it's very hard to argue that Brexit is a first and foremost a pro-growth policy. It may be good for other reasons, but it's certainly not a pro-growth first and foremost policy. So I just don't agree that there is an elite consensus on growth. I think that there is a tiny, tiny number of people who care about growth. I think there are just as many people among, especially among conservatives who will argue the completely pseudo, effectively pseudoscientific claim that house prices are only high and housing costs aren't actually high, but house prices are only high because of interest rates. I mean, that's a completely nonsensical claim and it's very easy to reject it if you know anything about asset pricing and the way interest rates affect asset prices.

[\(01:10:38\)](#):

And yet it's something that I hear all the time from people who, you know, think they, Oh, I've got a very interesting and counterintuitive view and I think, I'm sorry, but if you think that house prices are only high because interest rates are low or were low, then you are not serious about growth. You are not serious about the number one thing that we need to do to increase growth in this country. And I think

the same goes for energy as well. Is it a necessary, is it a sufficient condition for change? Probably not. You know, I, I take very seriously obviously things like nimbyism, the, the most recent thing I've written is about using local decision making to try to overcome nimbyism. I think it's the preeminent at the age, and it's possible that we can solve a lot of the nimbyist problems without getting the elite consensus. But I think a lot of the other things that we might need to do, like, for example, changing the way the NHS works or replacing the NHS with something that works better, which I think is very important for growth because it reflects such a huge factor in terms of how much tax we have to raise. I don't think anyone, I mean outside of this room is remotely interested in that or remotely serious about the things we need to do on that.

Diane Coyle ([01:11:39](#)):

Very good.

([01:11:41](#)):

David wants to come in then I'm going to let Tyler respond on tech and also take us into the point Deirdre raised about what the government should do. And then I'm coming back to all of you on that. David.

David Edgerton ([01:11:50](#)):

Just very briefly. I'm delighted to hear Sam that there are people in this audience who are not enthusiasts for growth. I mean, going for growth is such a boring kind of fifties, sixties thing. I mean, we should be going for something much more interesting like say transformation or even improvement. And I suggested earlier. I mean, growth is saying we want growth is a way of just saying, actually we just don't want to make any choices about anything. We just want to have more. So the only we can pay our nurses more is if we have economic growth. Well, no, why can't we just pay our nurses? So the invocation of growth for me is precisely an instance of the inability of political elites to think creatively about the economic issues that we face.

([01:12:39](#)):

And not just net zero. I mean, that's certainly going to be an important constraint on growth and indeed transformation. So I think we do need to get away from these very, very old fashioned ways of thinking about the economy. And maybe this is the segway into Tyler talking about industrial policy. I mean the whole conception of industrial policy, and R&D policy seems to me are kind of leftovers from the 1940s, 1950s and 1960s. And we really ought to start thinking about these things in fresh ways.

Diane Coyle ([01:13:15](#)):

Where are you on that, Tyler?

Tyler Cowen ([01:13:17](#)):

A number of points. So Deirdre mentioned letting the market have its way and choose things. You know, as economists go, I would be seen as quite far along the pro market side of the spectrum, but I don't think that alone is really the answer. So take a simple concrete example. I favour much more nuclear power in many nations. In the United States currently, nuclear power, the liability insurance is guaranteed by the Price Anderson Act, which is the US government. That may or may not be a good idea. I'm not even sure, but I do not have the view. First. We need to repeal that, reconstruct that whole system based around markets and then build more nuclear power. We just need to build more nuclear power now. It's going to expand the role of government insurance guarantees in the system. Maybe

that's unfortunate, but we need to do it. So there just seem to be so many cases where there's some urgent externality or problem. We need to do things. Government is part of the bundle and we still need to do it. And I think that's a more useful attitude than just thinking, Market should take care of it. But just more generally to a lot of the different points. And I think Munira said when she introduced me, I speak bluntly or something. It's not really true. But look,

[\(01:14:33\)](#):

I've been here a lot and I've been - first time I came here was 1979. In my humble opinion, I think you're all way too pessimistic, way too negative, way too carping as a culture. If I think of yinmy in the last two years in the United States, there have been a great number of yinmy victories, including where I work at Mercatus in Arlington, Virginia. Five years ago, I would not have predicted any of them. I don't have a sense if that will happen here. I don't have a prediction, I don't know enough. But if you come into it with a negative attitude about here's the seven reasons why it can't happen, it's not going happen. So ultimately some amount of development is a state of mind. And it seems to me in the broader sweep of history, the British state of mind has changed in some ways for the worse. And I would just want to see it be better and more optimistic and more Can Do.

Diane Coyle [\(01:15:30\)](#):

So just put your hands down for a moment. I've seen you. I want to do a show of hands. Who here feels optimistic about Britain's prospects? It's about 40%. So it's better than I thought. Okay. We'll go back to the questions. So it was Ben in the front row and then the gentleman at the back after that.

Audience 4 (Ben Yeoh) [\(01:15:50\)](#):

Um -

Diane Coyle [\(01:15:51\)](#):

Can you just wait for the mic please, Ben?

Audience 4 (Ben Yeoh) [\(01:15:56\)](#):

Hi, I'm Ben Yeoh. I guess my question was, Is culture upstream or downstream of this economic progress stagnation thing to sort of Munira's earlier point? Do we need social or moral progress first? You know, we went from slavery, women's rights, disability rights and those type of things. Does it go upstream, downstream, or is it in parallel? I mean, for instance, if we didn't really discount future people, would you really care about the climate more and some of these types of things? And for instance, I only just learned about matrescence, the science behind what happens when women go into motherhood. If we valued or if we knew more about that sort of thing, would the market put more value on it? But that's a kind of humanities culture thing, upstream first. So that's my question.

[\(01:16:45\)](#):

My two comments were, I really love South Korea, but their GDP is not on the par of London. So I'd double check on those things - The UK. Oh, but I guess it was a London, it's a South England thing about where we're going. And then I wonder, just on the comment on the innovation pieces. Do you not think markets know anything around this? So innovation about where it would be? Because you sort of said that we kind of don't know, and I'd be interested if you thought whether equity markets did, but my main one is whether culture is upstream and do we need to to work on that? Thanks.

Diane Coyle [\(01:17:16\)](#):

Thank you. At back there. Thank you.

Audience 5 (Brian Asquith) ([01:17:20](#)):

Hi, I'm Brian Asquith. British last name, American accent. So my question is, Have tech, have the people served with the technological frontier, in your opinion, just simply gotten much worse at choosing technologies that will diffuse throughout the population since 1970? So take Tyler's like three examples, right, that you said you were particularly excited about, since about 2020. Solar and wind, mRNA vaccines, so are broadly biotech. And then I have very little, the third one, AI, right? Okay. Each of those has diffusion problems, right? We have this wonderful mRNA vaccine. I live in the Midwest. I can tell you I saw a lot of anti covid or anti mRNA flags where I live in Michigan. You know, I think that the American's problems getting people to take the shot are very well known. I think that there was less vaccine resistance here in the UK - point in favour of the UK in terms of optimism.

([01:18:15](#)):

But nonetheless, there was a diffusion problem, right? There may be few further diffusion problems. We simply, it's not penicillin anymore, right? Solar and wind. Another problem where, again, as we've been sort of talking about these yinbys, but just generally some speaking, there's a lot of resistance on the ground to adopting these technologies for various reasons, right? Maybe you can blame the elites. Maybe you can blame the masses. But the truth is that it's just simply, it's not the radio anymore. Like the example you're giving about your grandmother. My grandfather was born in 1931. His parents who were probably born around since the same time your grandmother had no problem adopting the radio. There were - I don't remember hearing any stories, maybe you know some about people just resisting buying microwaves. But my same grandfather who just sort of like lived through a lot of that same time you're talking about: no interest in the internet. You know, he died in 2017. He eventually got an email address. My grandparents never got into using the internet. So even with AI, you know, there are a lot of people who were born in 1930s, 1940s, 1920s, who just never got used to using Google search, let alone who are going to be picking up, you know, using ChatGPT. So, you know, if I just sort of go down the list and I think about this -

Diane Coyle ([01:19:21](#)):

Can you sum up now?

Audience 5 (Brian Asquith) ([01:19:22](#)):

Yeah. Sorry - my question - I apologise. My question is, Do we just think that in some sense new technologies are just different in the sense they don't diffuse as well as past ones and that is part of the problem.

Diane Coyle ([01:19:32](#)):

Thank you. And then the third - there was a lady in the, that's right. No, no, the, was it?

Audience 6 (Lucy Hooberman) ([01:19:41](#)):

I think they're both of us.

Diane Coyle ([01:19:42](#)):

Well, you can both ask questions, but you go first.

Audience 6 (Lucy Hooberman) ([01:19:47](#)):

Hi, I'm Lucy Hooberman. I just wanted to ask a couple of questions. I going to say something very controversial, which is, I think we have probably all the technology we need in the world. We are a bit short on ideas and how to put them into practice. That's not to say we don't need new stuff. And obviously there's going to be high-end discovery from Wellcome and other places as well as modest incremental growth. We need it all. It can't just be one or the other. But what I really wanted to ask was about this question of culture or the social preconditions for growth and innovation. And I think we probably are at a time where we run out of road on the social preconditions for healthy, happy, and well people to do the work that we need to do. And I come back to the point that Professor Cowen raised when he asked, Which would be your favourite time?

([01:20:42](#)):

And I would say now. I would say now. I've been a professor of digital media and education for 15 years. I've stepped down because I can't get anything done in the university structures, but I am optimistic. There's a lot that needs to change. But young people can study almost anything anywhere in the world. But they can only do that if they can get to the place, if they can live in the place and they can afford to live in the place. And questions around mobility, around immigration, and all of those things are really, really important to make a flourishing social base for this kind of growth to take place.

Diane Coyle ([01:21:19](#)):

Thank you. And just hand the phone back - the mic back there.

Audience 7 ([01:21:22](#)):

Two very quick questions. One to Tyler. So when I think about my grandmothers, the big transformation is that I went to university and got a professional job and they didn't, and that this has worked its way through the economy in the period that you are talking about. And although it's not perfect, we're now reaching sort of saturation levels of that, right? Women are in the labour market. Does that make a difference in your view, either to the past story of what's happened over the last 50 years and to what that might mean for the future. And then to Sam. It seems to me at least when you look at the last kind of decade or so, and the divergence of the American economy and the British one, that the difference isn't the brilliance of the American political elite.

([01:22:09](#)):

I think - and that's true locally as well as nationally. Because of course America is more localised. So do you agree with Tyler that fundamentally our problem is not that we have more rubbish politicians, but that we assume we will fail before we try? Or is there another reason why we are finding this difficult when other countries are not?

Diane Coyle ([01:22:30](#)):

I'm going to carry on with the questions and comments because we've only got a few more minutes left and I'll save five minutes for concise replies from everybody on the panel. So, one at the front down here. Thank you.

Audience 8 (Paul Reeves) ([01:22:44](#)):

Hello. My name is Paul Reeves. I work at Nvidia, but I haven't a clue about Moore's Law. I'll try and keep this pithy. The subject of productivity - it's great there's loads of experts here about that - but to me, one of the things that's missing is the discussion of the idea of destruction and its impact on either initiating

the crisis of productivity and stuff like that - I know people talk about creative destruction and stuff like that - but in the past, my simple understanding would be that productivity rates go up after war. And I'm not suggesting we have wars - and also through recessions. Now it could be said - So a I'm interested, do people subscribe to that kind of theory? And also if there is an element of truth to it. In the past, well, in the last 30 years, recessions have tended to actually get lower in depth. Then they may be longer, but they're lower in depth. So is there an argument that we've achieved stagnation simply through the fact that we have less and fewer deeper recessions as a clear out of capital, but also ideas and things like that. So I'll stop there just to introduce it as a subject, I guess. Thank you.

Diane Coyle ([01:24:00](#)):

You. And let's go for one more on this side of the room, right by the wall over here. Thank you.

Audience 9 (Nicola Headlam) ([01:24:07](#)):

Hello. I'm Nicola Headlam and I took something from a drawing board to a tech platform in the north of England. So we did that. We felt like we could do that. So it wasn't, it's not just a southeast issue. I guess that's my main question is there's sort of both sectoral and spatial elements under which winners win more and losers lose more. So I've been explaining this this year as the economy's increasingly K-shaped. So both things can be true at once, right? That the frontier is doing that, but then the majority of the rest of the economy is doing that. And then that once you aggregate to the average, that's why it looks like we've got 0% growth or one percentage point up or down.

[\(01:24:55\)](#):

And arguably, I just don't think that, and yeah, you're absolutely right. Less than a percentage point every year since 2008, that is worth our serious attention. But then there is so much confusion in policy making that we're currently in the interest rate, inflation problem because the Bank of England don't seem to be clear that there are enough people for whom mortgages and pay rates are irrelevant to their ability to consume. Like the people that are stoking inflation aren't paying mortgages. There's enough housing wealth, there's enough, you know, and like I'm kind of shouting at my radio all the time. It's kind of -

Diane Coyle ([01:25:39](#)):

Bring it to a close Nicola. So don't, we're not, don't shout at us. Just tell us what the question is.

Audience 9 (Nicola Headlam) ([01:25:45](#)):

So I just think that all the things are true at once, as in there's the high road and the kind of - a lot of it is about looking at these things as our aggregate and average within sectors and within places there are wide disparities, both to the good and to the bad. And I think possibly the vagueness of things are better, things are worse. It needs to be much more specific and data oriented about where things are working and where they aren't.

Diane Coyle ([01:26:18](#)):

Thank you very much. So, you've got two minutes each. I'm going to be strict, particularly with you, Sam, because you talk a lot.

Sam Bowman ([01:26:25](#)):

I've got a lot to say Diane!

Diane Coyle ([01:26:27](#)):

So pick up any of those that you would like.

Sam Bowman ([01:26:30](#)):

All right, well then I'm going to annoy you by saying sort of, I do actually think American elites have done a lot better than British elites. One example is relative hostility to big business. I think American elites on both sides are much less hostile to big business. An example of that is relative prospects for big tech in the US versus the UK. Both in terms of antitrust where there is no such thing as abuse of dominance. There is no crime of how you treat your prices or how you treat your suppliers if you've acquired your market position lawfully. And by having a better product in the US, which is not the case in the European Union or the UK. The tech regulation died in Congress. It's very likely to be implemented in the UK.

([01:27:12](#)):

Privacy regulation in the US I think is likely to, when they bring a federal privacy law in, is likely to be a lot less onerous than the GDPR is. And I think is likely to be a lot less hostile to big business in particular. But all businesses. I think in terms of things like fracking, the US political elite have done much, much better. And energy costs in the US are much cheaper, much, much cheaper as I've said. There are many other things. Housing is cheaper in America. Not all of this is because the US federal government or the US federal elite is superior to ours. But because they don't have to be superior to ours, because their federal system means that it's much less decentralised and they can do things at the state level that in practice end up being far better than the things we're doing here.

([01:27:52](#)):

So yeah, I think America has got a lot of things right. I do just want to say I'm not a pessimist. I've just listed a bunch of facts about the UK being poorer than the US. I'm a huge optimist. I don't think that the way to improve the state of the UK is going to be to persuade other elites. I think that's a waste of time. I think the way to do it is to find keyhole solutions that get more houses built, get more energy supplied, get the cost of childcare down, get more infrastructure built without elites having to agree to it. And I think if we do that, we'll be a lot richer.

Diane Coyle ([01:28:18](#)):

Thank you. This is like one of those quiz shows. David, your two minutes.

David Edgerton ([01:28:26](#)):

Yes. I also like to say that I'm optimistic. I think there's a huge difference between what younger generations think and what political classes think. I think there were two different planets. I think there's a lot to be hopeful about in the thinking of younger people. I'd like to take up the point from our friend from the north. I think it's a very, very important point. And so we can have discussions about national moods and so are we optimistic? Are we pessimistic? Countries aren't like that. Countries aren't individuals, as you very rightly say, people in different parts of the country in different positions have very, very different experiences.

([01:29:14](#)):

And yes, living in a big expensive house in London and a place where lots of people want to come to is a very different sort of thing from living in poor parts of the country, including poor parts of London. And I think one of the important changes we've seen over the last 40 years is increasing inequality of both income and wealth and increasing regional divergence. It's much harder to speak of the notion of a

nation with certain characteristics. And I think we have to be much, much more alive to that. In terms of the politics I'd like to see, I would want to see a reduction in those - in all those differences. And I think it's a matter of great regret that neither political party in fact wants to confront those issues. There's a lot of sloganising about it - levelling up and so on and so forth. But practically no serious action or commitment to do anything.

Diane Coyle ([01:30:23](#)):

Thank you, David. Tyler, you get the last word and you've converted the rest of the panel to optimism from the sound of it.

Tyler Cowen ([01:30:30](#)):

First, I would second everything in Sam's last comment. But just to address, why is the UK falling behind the US? I think it's a very difficult and subtle question. I see at least two factors. I think the last few decades in the world for exogenous reasons have favoured scale. This has helped China a lot. It's helped the US a lot. You look at the governance of California. It's awful, right? You see this in San Francisco, other places, tax issues, zoning. But California is mostly still doing amazingly well. Because it was prearranged to take advantage of an era where scale meant a lot. I don't see that the UK has been prearranged in that way. I don't think it was terribly situated to take advantage of scale, given the English language here, but not positively situated in the same way that a country of 330 million people in greater wealth really has taken advantage of scale.

([01:31:26](#)):

So here, something needs to be rethought that you can either make a bet that scale won't matter anymore. It's probably not what I would advise, but it's possible. Or somehow we better set up to take advantage of scale. Because in a lot of areas like soft power, you are still amazing with scale and also to work more closely with the United States, which I do see happening anyway. And I regard as a big positive. And second, I think there's some areas where federalism is really bad for you. Other areas where it's really good for you. If you have slavery, it's really terrible to have federalism. But the last few decades, federalism been very good for the US. We've had a lot of experiments. States like Texas, Florida, go different ways, become more different. It's mostly worked. We have so many wonderful second and third tier cities that used to be dumps. And here you're never going to be able to have a kind of federalism like we do. And I don't know how you should rethink your governmental structures, I really don't. But at least to consider it's a very different world and maybe there are ways things could be different or better. So that just as the US right now is benefiting a great deal from federalism, you all could benefit a great deal from whatever innovation in governance you all come up with next. Thank you.

Diane Coyle ([01:32:41](#)):

So on that note of optimism, I'm going to invite you all to go back to the buttery where you were before to have a drink and a chat. And then dinner will be in the hall upstairs at 8.30. Please join me in giving our panellists a final round of applause. Thank you.