

COVID-19, Economic Depression & Environmental Sustainability:

Interview with Cambridge University professor, Dr. Ha-Joon Chang

NM: My name is Niles Maxwell, the Content and Communications Manager for the Sphera Stuttgart office. As countries try to recover from the COVID-19 pandemic, all indications suggest that we're going to experience a global economic recession of gargantuan portions. In this discussion, we would like to cover some of the larger implications for sustainability that both the pandemic and the mounting economic depression pose. We hope to explore the potential opportunities and sustainability for governments, companies and people in this new post-corona era. To that end, Sphera would like to welcome Dr. Ha-Joon Chang, the renowned Cambridge University economist, and author. Welcome, Professor Chang.

HJC: Thank you. Thank you for having me.

COVID-19 & REPERCUSSIONS

NM: So, paint a picture for us. As of today, May 29th, 2020. What is the global economic impact of our response to the COVID-19 pandemic?

HJC: Yes, well the virus started in China late last year and then started spreading to other countries, including my native South Korea, which is just next door to China, from January, and then Korea, Iran, Italy were hit very hard in the beginning. But then from March on things got out of hand. Actually, Korea having taken decisive early measures in terms of testing, tracing and isolating managed to contain it very well. But other countries took their time to take action and many of them had to impose very severe lockdowns, basically shutting down everything other than food stores and pharmacies. And the economic toll that it has taken is unprecedented.

It's the biggest economic crisis since the Great Depression of the nine-teen twenties and thirties. It could become even bigger depending on whether the pandemic is controlled or not. Just to put this into perspective in the last six or seven weeks since the US imposed economy lockdown, 41 million people have become newly unemployed. I mean, this is based on new claims for unemployment support.

Now, in normal times, even if a certain number of people have become unemployed over a period, the cumulative number of these new claimants actually does not add up to the current level of unemployment, because some people might have got unemployed in late March, but then some of them would have got a new job in mid-April or something. So in normal times, you cannot just add up the number of new claimants to unemployment benefits and declare that it is the current number of unemployed people. But in this occasion, since almost everything is in deep freeze and there are very few sectors that are still operating—they are mostly on hiring freeze and so on—we can basically take this 40 million as the number of unemployed people. And that's equivalent to something like 26% of the entire labor force of the United States of America. And if you add about 4% of the labor force that was unemployed just before the lockdown. We are talking about a 30% unemployment rate.

The highest unemployment rate during the Great Depression, recorded in 1933, was 25% in the US. So, in terms of unemployment, it is already that in the same league, if not ahead of the Great Depression. And we had the global financial crisis of 2008, in which many countries were very badly hit. But even at the time, the overall global economy was growing at about 1% thanks to China and other parts of the world, which were not so badly affected by the crisis. This year the International Monetary Fund is projecting that the global economic growth rate will be something like minus 3%. But the International Monetary Fund made it clear that that prediction is based on the assumption

that the pandemic is brought under... well, not entirely, but largely under control in the second half of the year. And I don't think that's going to happen.

And the IMF itself actually said that if it doesn't get controlled in the second half of the year, the global economy is going to shrink by 6%. This is the biggest economic contraction since the Great Depression. So, we are talking about an economic crises of unprecedented scale. And actually, compared to the Great Depression, it is a more widespread and deeply penetrating kind of change. Because during the Great Depression it was mainly a problem of lack of effective demand. You know, people not having enough income to buy things, and then companies, as a result, going into decline and bankruptcy and then that creating even more employment and so on. This is a typical mechanism of economic crisis.

But this time around, we are talking about rewriting the whole rule book on how we produce and consume things. If we don't find an effective vaccine and inoculate the large majority of the population, we will have to keep these so-called social distancing measures, which is effectively going to close down the many industries that involve face-to-face service: air travel, tourism, shopping, physiotherapy, you name it. The whole service sector is going to have to be re-organized. Many manufacturing industries will have to get re-organized. You know, for example, that in the US one important source of virus infection was the meatpacking industry, because it is an industry which is very labor-intensive; people who basically work on top of each other. And that that that kind of industry or garment making in the developing countries like Bangladesh, Pakistan, Vietnam. I mean, they all need to get re-organized to create the greater space between people, you know, some of the production methods might have to change. And we're going to see a reorganization of the global value chain, because now people are worried about having this very efficient, but very vulnerable, just-in-time kind of supply chain.

So, companies are going to manage their production differently—we can expand on that later. And now we have to change the way we consume things, because some things are just not on the market. You know, I love going to concerts, but I cannot do that anymore. So I'll have to find some other way of fulfilling my cultural desires. And, yeah, I mean now public transport is the dangerous. So they have to run at very low capacity. People cannot get into the elevators in the same way. So, you know, this is a crisis that is not just affecting macroeconomics, demand, the financial sector, it is about everything, which is what is making it so much more difficult.

DURATION OF COVID-19

NM: And if it will take at least until the summer or fall of 2021... if it will take at least until then to develop a vaccine against COVID-19, what will that mean economically, for the coming months and years? And then a second question to that would be, what if we do create a vaccine? Will the economy bounce back?

HJC: First of all, no. I'm not a scientist and have no epidemic privileges. I just have no idea when these vaccines are going to be completed. You know the most pessimistic thing I've ever read about is that, so far, no, coronavirus, Because there have been quite a few, you know—Ebola is a coronavirus, SARS is a coronavirus, and so on—no coronavirus that has yet acquired a vaccine. So, you know, some people think that it may never come. Another thing I read said, the quickest vaccine development took four years—that was the case of mumps. Yeah, this time countries are going to fast track approval and so on, so maybe it wouldn't take four years. But I think that we are talking about one and a half years, two years. And then, there'll be the challenge of manufacturing enough vaccine to inoculate practically everyone. Because one thing about this vaccine is that unless a very large proportion of the population is inoculated, it doesn't work. It's not like some other drugs where a small number rich people can pay a huge amount of money and save themselves. Because unless

at least 60%, ideally 90% of the entire population is inoculated, even the rich people cannot avoid this virus. So there will be a huge challenge with manufacturing and inoculating people. So we are probably talking about two or three years, rather than six months, one year.

Now, what is going to happen if this continues so long? I mean, I think one other remedy to this is actually drugs that can cure the symptoms, or at least make the symptoms less severe. So some of these treatments may come a lot earlier than the vaccine. So we might begin to get some level of activities restored. Actually, if a lot of countries had acted early in the way that countries like South Korea and Taiwan have, they would have been able to keep the economy open. This year, the European economies, the US economy—they are projected to shrink by 7, 8, 9, 10%. South Korea, thanks to early intervention, is projected to shrink by less than 2%. So, you know, it could have been actually better if the pandemic was managed more effectively. I mean, this already happened...

NM: It's already history.

HJC: Exactly, yeah. So now we have to think about how to deal with the consequences. And frankly, I am not confident in predicting the future here, because I can see how countries can sustain this for another six months, a year—put things in hibernation, open again when it's safe, and then keep shutting it down whenever things flare-up.

But if it really becomes like three, four or five years, then I think it's very difficult to predict how things are going to unfold. Because, you know, so far, a lot of countries have spent a lot of money propping companies up, paying a big proportion of people's wages or giving them one-off payments to help them see themselves through this period. But, you know, can they do it for three years? For five years? It's very difficult to predict.

One thing I can confidently say is that even if we find the vaccine in, say, one and half, two years, the recovery will be slow. Because what has already happened in some countries and what is going to happen when they begin to realize that this cannot go on for much longer, is that a lot of companies are going to go bankrupt, a lot of people are going to lose jobs. In the US, basically one quarter of the labor force has lost jobs. And unfortunately, once you have this kind of big dislocation, it takes quite a while to put the economy back together.

You know, it's not like a Lego set that you can take apart and then put together again relatively quickly. When companies go bankrupt, the kind of competencies that companies had—not, just in terms of hiring competent people, but having the teamwork and the organizational synergy and so on—all of these disappear. So even if two years later they say, okay, now the sector is running again, let's get the old gang together and restart the company, it isn't going to snap back to where it was two years ago. Because in the meantime, some people have left the labor force, some may have even died, some may have changed jobs. And you don't just have that same kind of competence anymore. It will take a year or two to rebuild the company.

I mean, that's difficult enough for a single company. But when you have literally tens of thousands of companies that have gone bankrupt and millions of, tens of millions of people who have lost their jobs, putting them together, even if the demand is reviving, is not going to be an instant job. So I think we are talking about the lengthy recovery.

THE GREEN RECOVERY

NM: Okay. And talking about recoveries... There's a lot of media and talk about a green recovery. What public policies do you see as the most promising for a green recovery?

HJC: Yeah, I think one silver lining to this crisis... Of course, I mean, it has been a terrible thing. You know, at least 350,000 people have died all over the world. The US itself has lost more than

100,000 people, the UK more than 50,000 people. It's a tragedy of the unthinkable scale outside war time. But I think one thing that has been positive about this is that it has made people think about the world in quite different ways. Of course, quite a lot of it is more personal things, you know. What do I really want in life? How have we live together, but not in the way that we should have? Who are my real friends? But, you know, on a bigger scale this pandemic has made people realize that we are actually bound in a common destiny.

Of course, there are things where some people do not suffer from, while others suffer hugely. Even this pandemic is like that to a degree, because the people with the worst underlying health, which usually means people who have lower income and lower status in society—they have died more easily from this disease than people who are not in that position. So, I'm not saying that this has been some kind of leveling experience. But, because of this pandemic people have realized, yes, actually, we are bound in a common destiny. Because, you know, for example in this lockdown, at one level, why should I as a healthy young person be cooped up in the room when the risk of me catching the disease and dying from it is very low? But then, of course, you shouldn't do it, you cannot do it, because otherwise you might be indirectly killing your grandparents and you're friend's father and so on. And so, now we are realizing that we are all bound in a common destiny and the biggest common destiny we are bound in is the environment, climate change and the climate crisis.

So I think a lot of people have realized that yes, that we really need to act as one humanity bound in the same destiny. And paradoxically, at least in some countries, people have realized that actually when we all act in concert, we can make a huge difference, because for the first time in many decades, people are seeing a clear sky over New Delhi in India, because no cars are running.

A lot of people, including myself, sometimes just become slack on fighting climate change, because we all think, I'm just one person. If I throw away this plastic bag in the sea, it's not going to destroy the Earth. So I think a lot of people have that so far taken that attitude, but now they realize that individual actions matter. Actually working together or co-operating with other people matters, and it can create huge differences. And I think because of these reasons that so many people are talking about a green recovery. And that's been very positive.

Now, exactly what you need to do to achieve that... I think we need to think in different timescales for different things. So in the short run, a very quick way of helping green recovery would be to create jobs in relatively easy green policies, like the insulating houses, converting heating systems, and changing energy consuming appliances and cars into new ones. These are things that you can do at relatively low cost and very quickly and would be largely labor-intensive. So, you can create quite a lot of jobs in a short span of time. Although of course, if it ends in that kind of one-off, low-tech thing, then the impact won't be sufficient. So, we need to think in medium and longer terms.

So in the medium term, we need to invest in more kinds of green activities that already have known, sufficiently developed technologies. So if instead of, say, the government, when it enters the recovery phase, it wants to invest in infrastructure, let's make sure that the Government invests in further developing solar energy, wind energy, promoting ethanol cars. Any number of things that we already can do, but haven't been doing because of the misalignment between economic and political incentives.

In the longer run, I think we also, as part of this recovery package, want to see big investments by government and other public bodies in developing more powerful green economies. At the moment, there are a number of things. I'm a scientist or engineer, so I cannot tell you the technological details. But we hear that there are all these things that could radically change the environment, like more effective carbon capture technologies.

GOVERNMENTAL ECONOMIC INTERVENTION

NM: And COVID-19 has sort of given us a greater sensitivity to human-caused risk. Do you think it will be easier for governments to implement stricter environmental regulations in this post corona world or this ongoing coronal world?

HJC: Yes, I would hope so. Like as I said earlier... I'm sure that people can forget these things quite easily, but I think we have become sensitized to our common destiny. We have realized the power of collective action. So, I think there will be greater acceptance of these things. For example, the restriction of movements during the lockdown is a great example. You are kind of accepting some limitations on the freedom of your movement so that everyone can be safer together so that you protect vulnerable groups. I mean it's the same kind of principle, isn't it? So, I think that people will be more accepting.

But, of course, things are never one-sided. When the pandemic is brought under control, there could be the opposite, well there will be the opposite forces pushing. At least some governments will say, well, we have lost a few years of economic growth, now we have to make a dash for economic growth at all costs. So reopen the coal power plants. Let's drive more cars. And then, you know, well distancing requires that fewer people use public transport. So the car lobby will be out in force and say that, for everyone's safety, we should drive more cars. I can see how the different forces will be clashing. But I think that the general recognition of our common destiny and the power of collective action that we have experienced through this period, and will experience for some time now, I think it will make it easier for governments to implement more exacting environmental standards.

NM: And an economic question here is, is there a limit to the amount of money a country can pay or the amount of debt it can go into to pull itself out of like an economic depression?

HJC: Well, I don't know any economic theory that says, here's the limit. Because it's not just a technical thing, but also a political and psychological thing. Let me elaborate. First of all, we have to recognize that, in this kind of situation, if the government doesn't run debt, the private sector, both companies and individuals, will have to run debt. So if you are unemployed and the government doesn't pay you anything in terms of unemployment benefits or one-off disaster relief money, what are you going to do? You'll have to run debt.

So in this kind of situation, if the government doesn't run that, the alternative is not to run debt, but for other people to run debt. And companies and individuals are, of course, a lot more vulnerable to bankruptcies. Once and a while governments can go, well, technically bankrupt. But it's a lot more difficult for the government to go bankrupt than individual companies or the individuals. So actually in times like this it's much safer for the government to run debt rather than other people. So, let's not forget that, because we are not talking about the normal situation. Either government running debt or everyone else running debt. It is not government running debt or government not running debt, yeah? So that choice is clear. But, yes, I can see how people get worried about government debt climbing, because it might come back to haunt it.

But, first of all, everyone's doing it. So that one way—it's not the only way—but one way in which the government debt matters is because it is taken as a sign of government efficiency and competence by investors. So, when you are trying to choose between bonds of different governments—I mean it's not the only thing that they do—but investors look at it as one of the indicators that government's worth. They look at, for example, public debt to GDP ratio. If it is very high, then you say, well, this government may not be such an efficient government.

Now, this time when everyone's doing it, having higher public debt itself isn't going to be an issue because everyone's got high public debt. So, that the question is, have you got more debt than others and so on. And let's not think that that's the only thing investors look at. So, you know, I think that thinking, oh, my god, our public debt to GDP ratio is 100%, and it's going to go up to 170%, it will lead to disaster—that's not necessarily true. Other countries might go up to 200% and then you will

be looking prettier, you'll be considered a more financially prudent government. But most importantly, the level of public debt can actually reach huge proportions as the economy still does okay.

Even Britain, which ran huge public debt during the Second World War. At the end of Second World War, Britain's public debt to GDP ratio reached something like 270%. You would think that, wow, with that kind of debt to GDP ratio the country would have gone bankrupt. But, you know, in the fifties and sixties Britain grew at the fastest rate ever in its history and actually faster than it has done since. So insofar as people, potential investors and the financial sector, in so far as people accept that, yes, that debt is high. But it was done an inevitable consequence of avoiding catastrophe, and it is not a reflection of government incompetence or economic disaster, then they will be okay with it. That's why people kept investing and that the British economy grew very well in the next couple of decades.

So I think that we need to put this into perspective. You know, say if Franklin Roosevelt or Winston Churchill during the Second World War said, well, we should pull our punches in fighting the Nazis. because our public debt is going to go over 100% of GDP, then we'd be living in the fascist world. You cannot have that. So it's like that with this disease. I mean, we cannot say that, well, we are worried about the public debt to GDP ratio going over 100%, 150% or whatever, so we are now going to just open the economy, whatever the pandemic situation is, and we'll just let people die of this disease because we need to bring this ratio down. I mean, that's the proverbial tail wagging the dog. Government debt, the financial sector, GDP, everything exists to keep people alive and healthy and prosperous. We cannot kill people, because we are worried about this debt to GDP ratio.

DEVELOPING COUNTRIES & ENVIRONMENTAL SUSTAINABILITY

NM: Okay so, let's talk about other countries, countries whose economies are struggling. You've said in the past that we know that countries whose economies are struggling need fundamental transformations of their productive structures to create the conditions conducive to prosperity. What could productive transformation look like for a sustainable future, a more environmentally sustainable future?

HJC: So, a lot of people in the world are living under poverty, not just relative poverty, but absolute poverty. Literally hundreds of millions of people cannot even eat enough calories per day to keep them alive in a sustainable manner. So, we are talking about a lot of countries with very low technologies, very low capacity to produce things. And yes, in the past, I have argued that these countries need to produce more, not simply by exploiting nature more, but by developing new technologies, importing new technologies, raising productivity so that they can raise the material standard of living.

Now, at low levels of economic development, shall we say, countries with less than three, four, five thousand dollars per capita income, I would say that expanding material production is literally a matter of life and death. You know at that level if the economy produces a bit more, people can eat maybe one more bowl of rice, heat their houses a bit better, maybe visit the pharmacy that they may not have been able to in the past at level of income, take some medicine. People die less. Young babies survive beyond their first year. At that level of income, economic growth, expansion in material consumption is not just a matter of kind of having, I don't know, another iPhone, another handbag. It's literally a matter of life and death and for those countries expansion of their material production is imperative.

Now, when you leave that level of income, then yes, of course there'll be a trade-off between your standard of living and environmental sustainability, because material production uses natural resources and energy, many of which are non-renewable. And, also, your carbon footprint becomes

bigger and you begin to claim more space. So, you cut down forest, drive out animals. Yes, so those impacts are going to affect your sustainability.

Now, for a while, I think countries can still grow without worrying too much about global environmental sustainability, if not their local sustainability, because a lot of other countries in the early stages of development use dirty production methods. You know, air gets polluted, water gets polluted. When I was growing up in South Korea in the 1960s, 70s and 80s, the country was very polluted and in the local environments there was quite a lot destroyed. But, I think at least at the global level, there are different studies so it's not easy to pin down exactly when that change happens. But I think that probably the consensus is that for countries up to maybe six, seven, eight thousand dollars in per capita income, what they do in terms of material growth really doesn't make a huge difference to the big picture in climate change.

Now, I'm not saying that therefore these countries should just forget about the carbon emissions and do whatever they need to. They should not repeat the mistakes previous generations of developing countries. You know, they need to develop with the lowest possible carbon emission, low as possible damage to, uh, renewable, natural resources, and so on. But up to that level of economic developments, I don't think that what they do makes a huge difference. So, really it's for the middle-income countries and the rich countries.

I think that for rich countries, and, once again, how do you define which countries? Probably, somewhere between \$15,000, \$20,000 per capita income. Above that level I don't think countries need to produce more material things to improve the standard of living. Or at least, they don't have to increase their carbon footprint in order to have higher material standards of living, because at that level your basic needs have been fulfilled. Of course, there's always a question of distribution, so I'm abstracting from it for the moment. At that level, you also possess technologies that will allow you to make your production more efficient, less carbon emitting, and also you have the organizational capabilities to make your consumption less materially intensive. So you have the capabilities to raise people's living standards by producing more efficiently, consuming more smartly, more collectively.

So, I don't think there's—well, at least in my mind—any dispute on whether rich countries need to produce more material goods. I don't think they should. But, of course, they need to do it more smartly, share it out better and so on. So I'm not saying that they have actually been practicing such a thing, but they have the potential to raise living standards without having to produce more material goods.

As I said earlier, the poorest countries, I don't think there's any question as to whether they should expand their material consumption—they should. The countries in the middle, I think that they have more choices to make. They should do their best to industrialize or develop agriculture with the environmentally least-damaging technologies. They need to invest more in renewable energies.

CORPORATE RESPONSIBILITY

NM: So, up until up now, we've been talking mostly about governments. I want to switch over a little bit to companies and talk about, what is short termism and what threat might it pose for environmental sustainability?

HJC: Yes, short termism, the term, was invented in the 1980s. At the time, especially in the US, but also in the UK and some other advanced countries, there was a single kind of change in the corporate behavior and the behavior of the financial sector. So, what happened in the 1980s was that there were floating shareholders, shareholders who do not necessarily have a long-term commitment to a company, despite being a legal owner of the company. They had become more powerful through financial deregulation. So that now more countries had their financial markets

open, laws regarding mergers and acquisitions had become more permissive. Thanks to financial deregulation, there were a lot of new financial instruments that made a company takeover a lot easier. You know, all these famous junk bond-based leveraged buyouts in the United States in the 1980s. You know, Mike Milken and all those guys. So there were these changes that made companies a lot more vulnerable to changes in share prices that could lead to a hostile takeover. And that made companies behave in a very shortsighted way. By shortsighted, I do not mean kind of “simplistic” or “stupid,” as it sometimes means. It just means that they were worried about movement of their share prices. If they did not do things that made the shareholders happy, they would just instantly sell the shares, lower the price, and the company would be exposed to the threat of a hostile takeover.

So, companies started doing things that made these short-term shareholders happy. How? Well, basically you sack everyone that you can think of. This is the famous downsizing. And then you stop investing, you basically stop doing things that will bring returns in the long run. So especially things like research and development. You know, they can bear fruit in five years, 10 years, 20 years—you don't do that. You don't buy expensive machines, because you can recoup the cost only in three, five, seven years later. You basically manage your company with the next quarter, maybe next two quarters, in mind, at most one year.

And this actually is a rationalist strategy given the environment, because, for example, I don't have the US data, but in the 1960s, the average period of shareholdings in the UK was five years. So you buy a share in our company, you basically keep it on average for five years. So you have some kind of long-term commitment to companies.

On the eve of the financial crisis in 2008, it had fallen to something like eight months. I think it was seven and a half months. So basically, it means that shareholders are not willing to wait for more than two quarters, six months, maximum one year. Then the managers have to manage their company in the way they like. So you generate short-term profit by sacking people, not investing in machines, research and development, training. Of course, this means that five years later, your company will be struggling, because the technology is getting outdated, workers are demoralized, you haven't invested in any new technologies. But do you care? Because, in the meantime, you have been patted on your back by the shareholders for giving them huge profits and returning a huge proportion of it to shoulders through high dividends and also share repurchases or share buybacks, a practice in which a company buys its own shares to raise share prices so that any shareholder who wants to cash in, can safely cash in their profit. So, by the 2000s these kind of profit giveaways had become huge. I mean, in the 2000s the top US companies had basically given away something like 95% of these shares, either through dividends or share buybacks. Why? Because if you don't do that, the shareholders will sell your shares, move to another company, and then you'll be vulnerable to the threat of a takeover.

So, this has made companies very shortsighted. And this is terrible news for environmental sustainability, because we are talking about policies and actions that will bear fruit in 10 years, 30 years, maybe even 50 years. And these are not just on the radar of most corporate managers, because you are called farsighted if you talk about the next 10 years. Usually it's next year, sometimes the next quarter. Some American economists even once invented this term of “quarterly capitalism.” Basically, you operate for the next quarter. If some companies say they are not going to announce quarterly profit, but yearly profit, they are considered eccentric.

SHORT-TERMISM

NM: So what can boards of directors and institutional investors do to reduce this kind of short-termism within these large companies?

HJC: Well, they can do a bit. They could try to, given the constraints, manage the companies, as much as it is possible given the circumstances, with a long-term perspective. But they cannot do it alone, because when you are the only company that behaves in that way and says to the investors, we are doing these things with five-year, ten-year time horizons, a lot of shareholders are going to say, 'Are you out of your mind? We are leaving.' So you need that kind of institutional changes that will make that kind of farsighted behavior easier and more feasible. So you can think of a range of measures, and actually countries have used a range of measures to make more farsighted management easier.

So, for example, some countries have introduced this thing called tenured voting, which means that if you have held your share for longer, you get more votes in the shareholder's meeting. At the moment, countries like France and Italy are using it, but the scale is rather limited, because it's like one extra vote for holding the share for more than two years or something. But why stop there? I mean, you could make it more aggressive. So you could say, if you have held your shares for less than a year, you get one vote, but if it's more than, say, two years, you get three votes. If it's more than five years, you get 10 votes. Why not?

Other countries have tried to introduce more long-term slant to management practices by making hostile takeovers difficult. So you are sitting in Germany. The Germans have done it through the so-called co-determination system where all companies of over a certain size, I think it's more than 2,000 employees, have a two-tiered board structure. So, they have the Management Board, which is like the board of directors in other countries, but then they also have the Supervisory Board, which has the final say in big decisions like a takeover, factory closure, mergers and so on. And that Supervisory Board, half of its members are appointed by the trade unions. Of course, the management side has the casting vote, so if push comes to shove, the management side will win. But that's not how the Germans manage their companies. So when there was this hostile takeover of the German company of Mannesmann by Vodafone in 2002, I think was, it was the first-ever hostile takeover in Germany after the Second World War or a new scale. So, German managers can operate with a longer time horizon, because the danger of a hostile takeover is rather low.

In Japan, it was not a law, but companies have basically tried to introduce a longer time horizon to their management by this practice known as cross-shareholding. It is actually illegal in some countries, but in Japan you are allowed to buy each other's shares. So you own 1% of the shares of your main supplier, 2% of the shares of your main bank, another 1% in another company. So friendly companies owned shares of each other. And now this proportion is probably down to just over 20%. But at its height in the 1980s, it was basically half the shares that exist in Japan. So in the 80s and 90s, a lot of American corporate raiders came to Japan trying to engineer a hostile takeover, but they couldn't buy enough shares, because the shares of all the important companies were owned by each other. Of course, there's no legal agreements. So if your finances are not good, you sell your friendly company's shares and so on, but since so much was basically locked up in safes in corporate headquarters, these corporate raiders couldn't find enough shares to engineer the hostile takeover.

SHIFTING CORPORATE CULTURE

NM: It almost sounds like right now would be an ideal opportunity or an ideal time to somehow make the shift, make the transition.

HJC: I agree, because that another option that countries have used is public ownership. So, in order to impart some kind of stability, pension funds, sometimes the government directly, they bought significant shares in important components, and they have acted as the balance. So, in Korea, the National Pension Fund owns like 9% of Samsung electronics. So, what it decides becomes pretty important in how Samsung behaves. In some countries they sometimes privatized companies that

used to be owned by the state or actually had been taken over by the state, because the private sector company went bankrupt. And when they privatized, they built in some kind of mechanism to make a hostile takeover, and so on, difficult.

A good example is a Volkswagen, which went basically bankrupted the 1970s and was saved by the state government of Niedersachsen, Lower Saxony in English, and when the company was nursed back to health and privatized again, the government of Niedersachsen introduced this law saying that Volkswagen, if it wants to have a kind of big merger or it is going to be taken over by some other company, will have to get on approval from the government, the government of Niedersachsen. So, there is a special law there.

So, this is a time and a lot of companies are being bailed out by taxpayers' money. So, at least for some companies, a government can keep some shares with extra power. In some countries, they have something called "golden share," which means that the government owns only like one share or something symbolic, but that share has the final say in takeover and closure. So, you know, there are a lot of different ways to do it. You can introduce public ownership, you can change the voting structure, you can introduce a co-determination system.

NM: It could come from the company or the governmental side.

HJC: Yeah, exactly. I think there is no country where there was one grand design for this. Governments, companies have realized that if there's too much short-term pressure, companies cannot be run in a sustainably way, economically, environmentally and socially. And they have over time throughout the history of capitalism, at least in the last 100 years, introduced all these laws and practices, which are kind of legally binding, but practices and customs that encouraged more long-term oriented corporate management.

POST-CORONA MANUFACTURING

NM: You mentioned before that you see a shift especially in the service industry. How will manufacturing change as a result of the pandemic?

HJC: It partly depends on how long this pandemic is going to last, because the longer it lasts, the more radical restructuring, the more radical restructuring it may need. But at least, assuming that this pandemic and health crisis is going to last for a few years in some form and looking at things that people are talking about, looking at things that I think will be necessary, I think the following things are likely to happen:

So, first of all, as I mentioned earlier, in some industries, the production method itself will have to change. When I say production, I don't just mean material goods, but also services. So, shops will have to be differently organized. The tourist industries might have to be completely overhauled to reduce the number of people. Actually they might make it more expensive, and therefore not for people without a very high income. But if you want to make it equitable, you may introduce some voucher system in which everyone has some claim to be somewhere, once in a while. So you create some kind of intentional tourist quota system that even relatively low-income people can have some right to travel. Otherwise, poor people will be completely driven out of the market, through money. Anyway, so even in the services industry, there'll be some radical changes. But in manufacturing, as I mentioned earlier, in labor-intensive industries, they might have to re-organize the way people work.

CORPORATE RESILIENCE

But also another important difference that I think they should make is to make companies do things to make themselves more resilient. One thing that we have observed in this pandemic is that—it

initially happened a lot with China, but I'm sure it happened with other countries—the global supply system has been organized in such a kind of intricate and systematic way that if anything goes wrong, the whole supply chain is disrupted. Based on this notion of just-in-time management, we have assumed that things will be there when we need it. Essentially, there would be no disruption to the flows of goods and services across the globe. But we now realize that that's not necessarily going to be the case, so a lot of other people are talking about making the system more resilient, which means, for example, that you might need quite a bit of spare capacity.

In other words, at this moment, a lot of companies are running with very low spare capacity, because they know that the system flows so well. They can just assume that if we make it, it will be sold, if we need something, it will be delivered. But we've seen that that is not necessarily the case. Then, in order to remain resilient, you might need more spare capacity there. Or in order to be resilient, you might need to diversify your sourcing, because if you are dependent on one company for the supply of something and the pandemic or an earthquake hits, or climate change hits a certain region more badly, then you will be lost.

This has already happened with earthquakes. Some big earthquake in Taiwan in the 2000s, I forget the exact year. The famous tsunami in Fukushima earthquake in Japan. These have seriously disrupted global supply chains. One example I read was some Japanese company in the Fukushima region, which was supplying some very highly specialized chemicals used for some microchip, possessing for making mobile phones. That company was supplying something like 60% of the world's output. And when that company got destroyed because of the Fukushima earthquake, for a while mobile phone production ceased in many countries. So in order to prevent something like that, you will need to diversify your supply sources.

And then people are talking about reshoring, that is, bringing back some manufacturing activities from places like China. I'm not actually so sure about that, because these supply chains have been built over decades. They cannot just bring it back at will. I mean, I'm sure they can, but it will highly costly and disruptive. So, Mr. Trump may talk about reviving American manufacturing, but he's not doing anything to make it happen. Can he really credibly bring iPhone production to California? Forget about it. These are produced based on the basis of vast and integrate supply networks that crisscross the whole of East Asia, not just China, but Taiwan, Korea, Malaysia, Singapore.

NM: So, it sounds like the supply chain, the idea that the supply chains will become more local or something like that is a bit of exaggeration.

THE FUTURE OF MANUFACTURING

HJC: Yeah. I mean, I'm sure for a limited number of things. I mean, for example, if they are really worried about the manufacturing of medicine or something, I'm sure at some cost they could do that, but I don't think it's going to happen as a general phenomenon. And let's not forget, manufacturing trade is going to be the safest global economic activity from now on. Because moving people is very dangerous. Moving goods is a lot safer. And unlike agriculture, it will be a lot easier to sanitize manufacturing products. You can just spray it with chemicals. Well, they do, but you cannot easily do that with agricultural products. And now people are going to spend much less money on services. They cannot go on foreign holidays; they cannot go to movie theaters; they cannot go out and drink and eat as often. What are they going to use their income on? Buying things, mostly made abroad. So I think that actually manufacturing trade is, at least in relative terms, going to be the winner. And for that reason, it's not going to be very economical to bring all these things back home, even if you wanted it.

NM: Turning back to the CEO, or the heads of companies. CEOs have a fiduciary responsibility to maximize profit. So when CEO's income is tied to the profit margins of a company,

I'm wondering how can we ever make the transition to putting environmental sustainability and other ethical values before profit?

HJC: Yeah, exactly, that has to change. This idea that CEOs have a fiduciary duty to maximize profit is based on a very particular view of what a corporation is. So this is, if you like, the shareholder-based view of a corporation. But there is an alternative view, which is the so-called stakeholder view, saying that the company may be legally owned by their shareholders, but they are not the only people with stakes in the company. You have the workers, you have corporation manages, your have suppliers, you have the local community. And these people all have a stake in the company, and therefore all the measures that I discuss—that kind of mis-trained, more short-term-oriented, shareholder-oriented kinds of behavior by companies—were exactly introduced because many people saw companies, corporations as an entity that is a community of shareholders, not just a property of stakeholders. So, we need to change that.

NM: Do you think that change would come is more likely to come from the CEO or from the company or from the government?

HJC: It has to be both ways, because let's not forget American CEOs didn't use to behave like this. In the 60s and 70s, they were more kind of a company man. If you worked for Dupont, you died with Dupont.

NM: Loyalty to the company.

HJC: Yes, exactly. Constantly on the lookout for higher salaries somewhere. Partly because the general business culture at the time was different, but also because, as I said earlier, there was no constant pressure for delivering short-term results. So that the managerial class itself had a more long-term-oriented outlook: We run this company; we will innovate; we will create new products and new technology; we will sell to more markets; this is a venture.

It's not like: How much salary am I going to get? How many people should I sack to get a higher salary? How much money do I need to dish out to the shareholders to get my \$25 million pay package approved at the shareholder's meeting? So the corporate culture itself was quite different, but the culture was not something that just came out of the blue. It was in the context in which the shareholder power was not as great as it is today, because of the financial sector was more strictly regulated, capital markets were not as open as they are today across the world. So the economic and corporate environments were different.

Already there is a smaller segment of the managerial and financial elite who see the problem of short termism, and they talk about long-term oriented management. So, there is already movement within the managerial class. But the government can help with this by making those legal changes that I mentioned earlier. You know, introduce tenure voting, put the brakes on hostile takeovers. Restrict the financial sector more so that shareholders themselves can be more long-term oriented, because at the moment for them there are so many temptations: high-yielding Brazilian government bonds, all these composite financial products, like CDOs (Collateralized Debt Obligations), that give you huge returns. Why should you stick to a company share unless the price keeps going up? CEOs are busy dishing out 80, 90% of the profit to shareholders.

RISK AVERSION & INDIVIDUAL CHOICES

NM: We've been seeing some, you know, CEOs urge for companies that are not paying attention to sustainability. Putting themselves in the position that their company is going to be much, much greater risk when, for example, in carbon taxes, come in. And it's as if they're not paying attention to the risks that are on the horizon Switching back now to the, to the strategy, to control the virus and how that's restricted our activities. So people are suffering, not just like economically because

they've lost their job, but also mentally and physically. How might the crisis change individual consumption choices, the individual consumption choices that people make beyond what you already described about the services?

HJC: I think this crisis has been so difficult, because it has kept us from doing a lot of things that make us human. Being with other people. You know, sharing experiences, whether it's a baseball game or musical theater, and just being with other people. I don't know about other people, but I grew up in Seoul, one of the major metropolitan places of the world with several million people, and sometimes I just enjoy being in the crowd, you know, just being there and getting the vibe and energy. So, all of these things are, at least for a while, off-limits.

We are now rethinking who we are, what we are, what we want. I think this is going to change the way people see the world. So yeah, a lot of us have found pleasure in actually doing things with our hands, whether it's making bread or doing yard work. I think a lot of people might start doing—not as much as they do now—but a lot of people are going to do more of those things, gardening or whatever, than before.

I already mentioned the fact that we are going to consume much less face-to-face services than before. At least until we find an effective vaccine. But I think we also have learned to consume less, consume more efficiently. I think many people have found that actually we have consumed in a very wasteful way, because we just didn't pay enough attention. Now a lot of people are much better at using leftovers and planning the meals and so on. Of course, when we have to go out to work, a lot of those things will be forgotten, because we won't have time and we'll be spending a lot of time commuting. But I think some of those things will stick. I think people need to be more efficient and smarter consumers.

Now, it's not all good, because I think there's one negative consequence, especially for environmental sustainability that comes from what is likely to be our consumer pattern in the coming years. It is that we will be using much more of our own transport vehicles. Public transport for a while will be considered rather dangerous, for good reasons. Yes, I think we should still push for more investment in public transport, so that these vehicles get less crowded whether they are busses or subways or trains, but there is a limit. Basically, the current view is that if you carry more than, say, a quarter of what you used to carry, you cannot maintain social distancing.

Some governments have told people please drive to work if you can. Of course, ministers who make that kind of statement often forget that a lot of people don't even have cars. But insofar as some people have cars, they would say, "I don't feel safe on public transport. I'm going to drive." So I think that is going to be one negative consequence in terms of consumption that impacts environmental sustainability. But I think there are also a lot of other positive things. So, we should try to make the most of those positive things.

GENERATION Z & SOCIAL INEQUALITY

NM: And with the rising social inequality that is likely to result from this economic depression. Greta Thunberg's generation, Generation Z, will be coming into the workforce in the next 10 years. And do you foresee any kind of dramatic shifts in how governments will deal with this inequality and lack of job opportunities?

HJC: I think this is a huge problem. You cannot talk about necessarily a whole generation over, say, a 10-year period. But yes at least for a few years, maybe 10 years, we'll have this situation where jobs are scarce and the youth who are looking for jobs, who are educated in a less satisfactory way because of school lockdowns. Well, already during this lockdown, social inequality has been feeding into education inequality. In many countries, even in rich countries, there are children from poor

families who cannot take lunch, because they used to get it from school but now their parents cannot afford to feed them lunch. Some of them are supposed to study online, but then between four sisters and brothers, there's only one laptop. So, how do you share that? The rooms might be crowded. You know, younger people working from home, if they are in a relatively densely populated area and are sharing substandard accommodation—they cannot really work from home, because the home is crowded. Your roommate might be making a lot of noise, you know. Sorry, I shouldn't have gone into that working-from-home example, because we are talking about education, but I got carried away.

So, yeah, already this has created a huge setback for equality in education. And if this continues for years, you'll have a generation of people who were not satisfactorily educated, partly because of the circumstances, but also because of their own social background. People who would have remained unemployed for much longer than the of previous cohorts before they settle down in a decent job. People who got more who are more likely to drift into this unstable, gig economic jobs. And then there'll be a whole generation of people who have been set back by this.

Now, I don't think any government is at the moment really thinking that much ahead. But, I think that we need to start this conversation, because it's not something that's going to end by September this year. If that's the case, you can just say they were one year's cohort.

NM: It sounds like there's going to be a lot of angry young people.

HJC: Oh, yeah. Well, they shouldn't be angry.

NM: And not just angry about the environment, but angry about their job opportunities as well and the inequality.

HJC: Oh, absolutely. I mean, inequality issues are really now becoming interwoven with generational issues. All these Baby Boomers who, with a high school diploma, get a decent job, decent house. Now, even with a university degree, even a master's degree, you cannot get a stable job. You probably have already given up buying a house. And then you are faced with the consequences of climate disaster and then, on top of that, the COVID virus is hitting you. So, yes, I think that we need to start talking about this and thinking about ways to remedy the situation.

EMOTIONAL MOTIVATION

NM: Anger is one emotion. What about fear? Because fear has played a big motivator in a personal response to the pandemic. So, should we be using fear more to get people, companies and governments to act on the risks associated with climate change?

HJC: I think fear is important, because I think a lot of people just don't take climate change seriously, because they do not yet know how awful it's going to be. Already, there are countries, especially in the developing world, that are very seriously affected. Even in rich countries, southern parts of the US are now hit more regularly with bigger and bigger hurricanes. So, people who have experienced this have fear of what is coming. But unfortunately, a lot of people do not take this issue seriously, because they think it's someone else's problem. I think, yeah, we need to put fear into people to some extent. They should fear what is fearful. Of course, I think that we cannot just work on these negative emotions. I think, as we mentioned earlier, this COVID-19 crisis, it's only silver lining is that it has made a lot of people seriously rethink their values and look at the way they have been living and working and consuming.

So, I think we can exploit this and try to start a more positive conversation. Haven't we realized our common destiny? We have had a chance to look into ourselves and reprioritize things, realizing some things that we thought were important are not and some things that we have taken for granted,

shouldn't be. In that way we can start a more positive conversation that uses people's experience to do good things, not just out of fear, but out of better understanding and greater solidarity.

THE SUSTAINABILITY STORY

NM: We're seeing a rise in populism, and we're already seeing that misinformation about the origins and the spread of COVID-19 are being used for political ends. And it seems like there's a danger that people will be fed simplistic explanations, disinformation, of these complex environmental and economic problems. How do we shift the discourse about economics and sustainability so that we can secure a more sustainable future?

HJC: I think the most important thing is to regulate the media. And when you say the media, we're not just talking about newspapers, but all kinds of other media: Twitter, Facebook and social media. So the most important thing I think is to set a kind of standard for these media. Of course, they are a lot of the things that cannot be easily regulated. You know, what if some idiot posts some fake news on his YouTube channel—you cannot police everything—but at least in terms of big media, I think you could be a lot more stricter. Twitter finally has started to put warning signs on Donald Trump's tweets. Maybe that kind of self-regulation should be made into law, and they need to be made to keep certain standards. Also, I think it's important to get money out of mass media so that there should be some kind of regulation on who can own newspapers and things like that. More importantly, the TV channels and so on. Also, I think we need to create some kind of public information service in the same way that all countries have some kind of public entities that generate weather forecasts or no statistics on population or GDP.

When you think about it, there is no reason why a government service should generate that kind of information. But in almost all countries, they run those as government services, because they recognize that this information is very important. And therefore, they cannot be manipulated, shouldn't be manipulated, and that's why they run public services. So, I think in terms of other information too, many countries have public broadcasting companies—PBS in the US, BBC in the UK. Although, the BBC these days have been compromised a lot through political pressure. But you have those public TV stations, so why not have the public information sources, which people who can go to because it's more trustworthy?

CULTURAL DIFFERENCES

NM: Last question. In Sweden, there was already a kind of distancing going on because the normal physical distance is wider between people there than in other countries. And I'm wondering how much does culture play into sustainability and economic behavior? It seems like it has a strong influence.

HJC: Of course, culture matters a lot, how people understand the world, what their values are, how they see their role in societies. All of these things matter in determining how people behave. But the important thing to note is that culture is not immutable. Culture changes. So, over time, countries become very different. For example, one of my favorite quotes when I teach about this thing to my students is that in the early 20th Century an Australian engineer visited Japan at the invitation of the Japanese government to advise Japanese factories in improving productivity. And he, after the visit, said that this country is hopeless, because these people are totally undisciplined. They don't keep time. And when I talk to the managers and complain about it, the managers say that this is our national heritage. So, a hundred years ago Japanese were considered the lazy. 150 years ago, English visitors would go to Germany and say, oh, these people are too individualistic. They cannot

ever co-operate with each other. They are too emotional, irrational—almost the polar opposite of the stereotypical image of Germans today.

So, of course, these countries have changed their cultures, not simply because someone in Japan in the 1930s thought that timekeeping was a good idea, but because their material conditions of existence changed. So when you're working in an industrial society, for example, timekeeping is much more important, because when you're working in your field, you wake up late, you go to the field late, you come back late—no big deal. But when you're working in a factory, everyone has to be at the production line at 8:40 otherwise it wouldn't run. So they distilled the discipline of timekeeping from a young age in schools.

So, for example, when I was a kid, when I was a young man, well into the 1990s, we had this expression in Korea called “Korean time,” which meant that you could be late for your appointment for up to maybe one hour, maybe even an hour and a half, and you didn't have to apologize, because that's what everyone did. These days, even the concept doesn't exist. Korean youngsters don't know the concept, because everyone keeps time. So, culture is a dynamic thing. It shifts all the time.

Therefore, while recognizing the importance of culture, I get very wary if people think this is something that has been handed down by history, that this is something that can never change, which is good news for people like us, who are concerned with environmental sustainability, because it means that people's understanding of the environment, people's understanding of issues like climate change, and their view for how these matters for them, their view of how they should individually behave in the context, and so on, can be changed.

We are already seeing significant cultural change between generations. The younger generation, they are much more aware of these climate issues. They want to behave differently. Many of them are thinking about vegetarianism, veganism. Many of them try not to use those plastics. So, I think that actually seeing culture as something dynamic that changes, that can be changed, is actually quite important for those who are concerned with environmental sustainability, because if you just say that people just don't care about the environment. This is American culture. This English culture. Then there is nothing you can do, because culture does matter. But then the good news is that it can be changed; it has been changed, and that's what we need to work on.

NM: That's a great place to end. We want to thank you, Dr. Chang, for your time and hope that your insights will help others think critically about economics and greater sustainability. So, thank you so much.

HJC: Thank you.