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BRENT OIL

82.02 \$/BL

GASOLINE

13.64 ₺/LT

USD/TRY

13.82

DIESEL

13.81 ₺/LT

EUR/TRY

15.67

FUEL OIL

10.17

EDITOR:

GÖKBERK BİLGİN

CONTACT: gokberk.bilgin@bilkent.edu.tr

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Decarbonization Shock?

Not Yet

Bariş Sanlı 

Make no mistakes, climate change is real, and energy transition is happening. But also, there are backlashes to the energy transition. We have seen it before in nuclear. Nuclear energy is again hailed as the climate change-friendly baseload. Every 10 or 15 years or so, we keep talking about a new nuclear age. Alas, we found ourselves in the midst of another nuclear accident. When you look at the age of the nuclear fleet worldwide, technical problems have a higher chance of happening.

The “decarbonization shock,” mentioned by a fund manager in an FT article, is an interesting term. But this is not the decarbonization shock for sure. But as the article goes, it may cause as much pain as in the 1970s. But from what we see so far, 2022 has a higher chance of becoming a mixture of 2008 (high energy prices) and 2011 (high food prices). The only way out is the demand destruction, just like all other crises. “Energy crisis only end when demand drops.”

This is not a decarbonization crisis or shock. The decarbonization decisions have not contributed a lot to

the deficiency in oil, gas, and coal investments. The only exception is China, where urgent coal reduction targets may have skewed the other commodities and prices. A decarbonization shock will be coming in the following decade.

The major problem about the whole net-zero policy is the naivety for believing that the deficiency created by coal plant closures will be filled by the magical green finger of solar and wind. This is a typical policy failure and will haunt global prices. The required way to do it was to take pledges from countries for firm renewable/solar capacities. A firm solar capacity is a capacity required for substituting the equivalent annual energy production of a closed or to be phase-out fossil plant. That is to say, 1000 MW solar is roughly 250 MW of coal capacity equivalent. We need a metric for that. I am not someone to offer that one, but my humble suggestion is MWbe - MegaWatt baseload equivalent.



Why does “decarbonization shock” make sense? Because we are looking for someone to blame. This year it will most likely be an environmental movement. This is wrong. Their effect has not been fully materialized yet. This shock is about high economic growth, drought, and geopolitical games. Sure, environmental motives have a part, just like anyone.

What is to be done by then? We are just sleepwalking into an energy crisis. Practically there is not too much to be done. The consumer expenditures will drop than the overall demand, and prices will stabilize for some time. The most dangerous thing to do in such a crisis is to increase demand. There are some instruments like block rate tariffs or increasing the payment period for the bills. But none of them will cheer up the consumer. We have to be honest that there is nothing in sight to increase the morale of consumers.

But what will the decarbonization shock look like? For a proper decarbonization shock, the investment environment should be permanently destroyed. Such as, Saudi Arabia stopped

investing in oil and gas wells and reduced employment. The oil majors start proper electricity companies. The employment in the fossil industry must have been wiped out. At least for 2 or 3 years, no investments should be made upstream. The current crisis for oil and gas prices is partly a result of low oil and gas prices. The current level will stimulate more fossil investments.

So what shall we call this situation? If you enjoy these attentive terms, maybe a “simulated decarbonization shock” is a better term. The biggest problem is, we are not addressing consumption but for production. You can not starve society for energy. Therefore, either these pledges should be renewed with “firm renewable investments,” or fossil fuels will make an even bigger comeback. The tragedy of 2022 has not started because the bills have not arrived at homes around the world. If demand drops quickly, we may see some relief by February. But it is only wishful thinking for now.

Eight Years Left

Başak Bozoğlu 

With the new year's arrival, new films and documentaries began to meet with the audience on cinema theaters and digital platforms. The movie Don't Look Up, on the other hand, achieved to become the most talked-about movie with 152 million views in the first week of 2022. It became the mostly discussed movie on social media with its famous worldwide cast and dark humor genre. Don't Look Up is about a young astronomer's discovery of an approaching comet that will bring about the end of the world. Although the film is not innovative in terms of its subject, it is quite realistic in terms of being handled with social media. Unfortunately, it is tragic and very familiar for two scientists to explain an event that will bring the end of the world to society and politicians.

Based on this movie, the first question that comes to mind is whether human beings are blind to the events that will bring about their own demise. In 2018, more than two thousand scientists from forty-four countries demonstrated six thousand scientific studies as evidence, declaring that the world will become irreversibly heated in twelve years. IPPC (The International Panel on Climate Change) Researchers working under the United Nations and conducting scientific studies on global climate change

warned the whole world about the point of no return. It is not known precisely how effective it was to influence people in their actions with some YouTube videos, one or two news channel broadcasts, and columns in that period. However, there is an 8-year window left to act. In fact, one of the best parts of the climate crisis is being able to experience the change in the climate without seeing the incoming meteorite or comet. In the last five years, you have often heard conversations such as winter came late this year, and the scorching heat is much worse than in previous years, fires in agricultural lands and floods in stream beds have increased. Unfortunately, the situation is much worse. The last ten years are the warmest year measured in the last hundred and forty years. This situation is a terrible threat to the well-being of people, animals, nature, in short, the entire ecosystem.

International Energy Agency (IEA) Executive Director Fatih Birol announced that after the Covid-19 pandemic, countries' budgets for clean and renewable energy have decreased in order to recover their economies and that by 2023, carbon emissions will reach an all-time high in the world. Fatih Birol also stated that they are far from reaching the 1.5 degrees Celsius temperature target in the Paris



Climate Agreement and that the governments did not take the necessary steps to reduce carbon emissions, especially after the pandemic, and did not help with financial support.

According to the report of the IPCC (Intergovernmental Panel on Climate Change), if the increase in global warming is not limited to around 1.5°C, and if there is an increase of 2°C, one-twelfth to one-fifth of the planet's green space will become desert, and corals will be destroyed by 99%. The disappearance of flour means that an additional 450 million people are regularly affected by extreme heat, and hundreds of millions fall below the poverty line due to climate change. At the same time, the enormous order that exists within the entire ecosystem will be irreversibly destroyed. Currently, human beings are the only living species that can maintain this order or at least control it.

According to the annual Greenhouse Gas Bulletin published by the World Meteorological Organization (WMO), at the end of 2021, the accumulation of greenhouse gases in the atmosphere reached a record level in 2020, despite the fact that the whole world stopped during the pandemic period. According to the published bulletin, the amounts of carbon dioxide, methane, and nitrous oxide increased more than

the last year's average levels.

With increases, glaciers are melting rapidly in Greenland and Antarctica, the number of air, sea and land-related disasters has increased fivefold, global sea levels have risen by 20 cm and are still rising.

For scientists, the source of the problem is people's activities, and the solution is people. COP26, keeping the promises made in the Paris Climate Agreement, implementing their own training and work plans as soon as possible by each government, reducing emissions from oil and coal can provide great results in the short term. The important thing is to continue with our lives without forgetting these facts and take all the steps that can be taken, no matter how small or big. While there is a truth and the solutions are being spoken by hundreds of scientists, it is up to governments and people to keep their eyes open and continue working. There is a reality of the impending danger. It is our duty to open our eyes and take all possible steps to discuss, inform people, and truly make the global climate problem one of everyone's problems.

A Brief Review of Some Models of Human Capital Growth

Halil Öztürk

Is it possible to measure the amount of knowledge in quantity? How can we rank the laborers based upon their skills? These and many other ones are directly related to one of the components of production, human capital. Like any other production, production of energy requires human capital, especially as the energy resources and alternatives of existing energy routes diversify. This makes human capital important to the energy industry and as the evolution of technology continues, some of the existing human capital become obsolete.

By putting some questions on human capital in the center, the statistical analysis makes it possible to draw some inferences about human capital growth by modeling. Initially, to define human capital, according to OECD, human capital is people's skills, learning, talents, and attributes, which implies the accumulation of knowledge is positively correlated with the level of human capital. Therefore, to measure the human capital level for a population for a particular time, we may look at the number of patents taken out by the population and citation for the population until the time we want to measure; the more patents and citations, the more we want to measure human capital level is.

In this article, we shall be doing a literature review for some models of human capital growth based upon several

patents and citations.

Firstly, for Akçığit, Acemoğlu, and Çelik, managers are the ones who manage innovations; thus, the number of patents for innovations is directly related to manager's success. In particular, the younger CEOs, the more citations per patent are. However, the "CEO effect" does not necessarily happen immediately after a change of CEOs due to the process of research and patenting. With the help of their model, instead of just looking at the new CEO's human capital, we should think of the event "changing CEO ."The change to a younger CEO creates such an effect, not the CEOs themselves directly, and the model result is that switching to younger CEOs generates more radical innovations both after and shortly before the switch.

Secondly, according to the model of Chari and Hopenhayn, which is a vintage human capital model in which each technology requires vintage-specific skill, young workers entering new technologies invest when they are young and reap the benefits of their human capital when they are old by stating that unskilled workers' wages go up with vintage. To explain, "vintage" is a kind of relativity between generations in particular, as time elapses, the generation gap makes the older one vintage for the younger ones. Algebraic computations of the model aside, since while technology changes, the novelties require an adaptation



and a new level of human capital, as the newcomers to the labor market are seen as unskilled, their investments in the new technologies are going to return them as a higher wage as vintage increases. The statement is also supported by the model by MacDonald and Weisbach, which predicts that the income of the young will exceed the income of the old because, in addition to the younger generation's technology-specific human capital and other kinds of features, they are learning by doing.

At this point, the diffusion rate of a new technology ought to be considered; according to them, technologies diffuse slowly, and the rate of technology arrival is positively correlated to the rate of diffusion. Therefore, an improvement in technology actually does not quickly get the technology-specific human capital off; nonetheless, keeping trying to increase the number of patents and their citations will increase the diffusion rate and, correspondingly, the rate of being obsolete the technology-specific human capital of older generations.

Now, through these models, we have a ground on which we can think of. One of the most popular ways to increase innovations and so human capital is giving the incentive to innovate. According to Akçığit and Ateş, for example, lower trade barriers increase private companies' incentives to innovate by increasing the competition in the market. As

exemplified by their model, when both countries reduce tariff levels, competition intensifies for a large chunk of firms, incentivizing them to innovate, which reduces the magnitude of underinvestment in R&D and the need for aggressive R&D subsidies. In addition to that, protectionist policies in favor of national firms, in the long run, remove their incentives to innovate. Moreover, Akçığit, Aghion, and Villavede's model claim that taxing capital reduces innovation incentives for a given labor supply.

In this article, we have seen a short history of the models regarding human capital growth, which is for many people who do not have enough knowledge in economics too abstract to comprehend and measure. In these models, researchers used data such as the number of patents per firm and citations based upon the definition of human capital to measure it and see its growth. After that, with the help of these models, it has become possible to understand how incentives work in this variable of economic growth, human capital. Especially when such industries where human capital may play an integral role in growth as energy is thought of, the importance of understanding how incentives work becomes more clear.

Movie Review: Don't Look Up

Büşra Öztürk 

A recent movie, Don't Look Up, has been discussed and written umpteen since it emphasizes the climate change problem metaphorically. I would like to confer the counterpart of the metaphor in the movie and convey the ultimate message would like to be given to the audience from my perspective. Adam McKay, the director of the film, who generally likes to make movies about the noteworthy events of today in a suggestive way, covers global warming in this film. The main reason the movie is on the agenda is that it reflects in a satiric manner the insensitiveness and inadequacy of the actions taken towards climate change and global warming.

Before proceeding to the movie's content, it would be great to mention its remarkable feature, that is, the leading role belongs to Leonardo DiCaprio. This is because of his fame and because he has been an outspoken environmental advocate as a Messenger of Peace of the United Nations. He has many pioneering actions on fighting climate change throughout his career, and the preponderance one is that he established a foundation in 1998 to protect the Earth's last wild places and fragile key species, implementing

solutions to build a more harmonious relationship between humanity and the natural world. Based on his role of being an environmental activist, he summarizes the purpose of the movie brilliantly in one sentence as "If we are not voting for leaders or supporting everything that has to do with climate mitigation, we are going to have a fate very similar to the characters in the movie."

The movie begins with a Ph.D. student discovering a comet. While calculating the path of the comet with his consultant astronomer, they find that it is actually heading towards the Earth and will strike after six months and 14 days. As soon as they learn that the impact of this star the size of Mount Everest will be powerful enough to wipe out all humans and living life from the Earth, they try to warn the authorities that they are facing such a major threat. Unfortunately, while they are trying to alarm everyone in order to prevent such a big disaster that is certain to happen in 6 months, they are not taken seriously sufficiently. The new phones, celebrity dramas receive more attention than the ending of the world since the media is terribly incompetent in informing the public. When they finally admit to destructing



the comet, a CEO who is impactful as much as the president comes up with an idea to make a profit from the materials on the comet, and they wait until the comet reaches near to the world. However, the profit plan does not work as they expected, and the movie comes to an end as the world ends up.

The comet in the movie is actually a metaphor for all the problems that threaten the world, but it specifically points to the biggest of these threats, which is climate change. A similar situation in the movie actually happened in 2018, when the Intergovernmental Panel on Climate Change (IPCC) report was published, in which not only two scientists but also 2000 scientists cited more than 6,000 scientific research as evidence. In this report, they stated that the world would be irreversibly warmed in 12 years. In addition, according to the measurements in scientific reports, the last decade was the hottest ten years among the 140-year history, and each recent year is saved as a new record since it exceeds the temperature of the previous year. The common known outcomes of an increase in global temperature are disastrous happenings such as heatwaves,

droughts, extreme precipitation, fire, etc., and we have begun to experience most of them, unfortunately.

The point that the movie has not reflected well is that demonstrating degeneration in politics is the reason for our failure to take action for climate change. According to the movie, a comet can be destroyed with one political decision. However, climate change can not be simply destroyed with one policy or one political move. While the solution is for the comet is destruction, the solution for climate change is the complete reinvention of our sociopolitical structure.

Nevertheless, the movie is right that climate change will be a race we will lose unless sooner we take action. Although many countries have prospective plans to mitigate the climate crisis, we also need urgent policies that should be designed to change today's circumstances and save the world, commencing immediately as the ultimate message of the movie of articulating the urgency of climate change.



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