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Book Review – Climate Shock

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Book Title	**Climate Shock:*The Economic Consequences of a Hotter Planet***
Author(s)	**Gernot Wagner and Martin L. Weitzman**
Publisher &Publishing Year	**Princeton University Press, 2015**

Author:

Wagner is a public policy specialist and lead senior economist at the Environmental Defense Fund and has written widely on energy and climate change. Weitzman is one of the leading economic theorists of our day, having made fundamental contributions to environmental accounting, the relative merits of price and quantity regulation, measurement of species extinction, and in an earlier era the economics of central planning and the Soviet Union.

Synopsis of the book:

The book discusses about why has progress in policy making of climate changes been so slow? If we read five books, we will find six theories. Perhaps this is because the public is poorly informed. Or because the science is so hard. Or because industry is putting up such a vicious fight, and policies are being blocked by the oil and coal lobbies. The book discusses about the repercussions of a hotter planet and also introduces the concept of free riding. There can be mainly two ways to slow the climate change, and thereby to reduce the likelihood of catastrophic damages. One is the hard slog of reducing emissions. The other is to use geoengineering that attempts to offset the CO2-induced warming. The book also sheds the light on the risks of a warming world and potential policies to deal with them. The book also discusses briefly about the Kyoto Protocol. It helps us understanding the complexities involve in reaching and making international environmental agreements.

Key Learnings:

1. The main idea of the book is about free riding, what is free riding. Free riding is when one country invest heavily on environmental issues, and the whole globe have its perks and benefits. This is called free riding. Why free riding has not been understood properly or the countries not taking appropriate steps to coup up with environmental issues is that it takes a lot of investment and the pay back is far away in the future and every country will be benefitted. So the greed of the nations has kept them away from free riding every other

nation regardless of she can afford to invest or not. The only protocol signed and not taken forward is Kyoto Protocol. A conference recently held in Paris also got nowhere except the greedy world leaders meeting with each other and exchanging diplomacies.

Free riding occurs when a party receives the benefits of a public good without contributing to the costs. Nations freeride in military treaties such as NATO when they enjoy the benefits of the strong US military to protect them while doing little to pay for the common defense.

The benefits from investments to reduce emission of CO2 and other greenhouse gases are a global public good. They require costly investments by individual countries. However, the benefits from the lower emissions are spread widely around the world, and the country undertaking the investments will receive only a tiny fraction of the benefits. Wagner and Weitzman put the point as follows:

Why act, if your actions cost you more than they benefit you personally? Total benefits of your actions may outweigh costs. Yet the benefits get spread across seven billion others, while you incur the full costs. The same logic holds for everybody else. Too few are going to do what is in the common interest. Everyone else freerides.

Take smoking as an example, which kills almost half a million people annually in the US. More than half of men regularly smoked cigarettes in 1965, and most of them thought smoking did not cause cancer. However, as a result of a half century of education, persuasion, warnings, and personal health concerns, attitudes changed. According to recent studies, close to 90 percent of the population, including smokers, think smoking causes cancer. The fraction of the US adult population that currently smokes has declined to 18 percent. While not a complete success, the decline in smoking is surely one of the major public health victories of the modern era.

A second example, also highly successful, has been the reduction in air pollution that produces small particles that are harmful to health. Major sources of these harmful particles are chemical reactions of sulfur dioxide, soot, nitrogen oxides, and other compounds. Estimates suggest that perhaps 50,000 early deaths annually in the US are caused by this form of air pollution. National and regional regulations in place largely since 1970 have successfully reduced the worst of the harmful pollutants. For example, from 1970 to 2014, sulfur dioxide emissions declined by 84 percent. It is interesting to note that most of this decline came after the introduction in 1990 of a cap & trade program that put a market price on sulfur emissions—this being the first major test of market pricing of emissions.

2. Scientists are increasingly confident that the basic results of climate modeling are accurate. Climate models calculate that past emissions have contributed to warming of almost one degree centigrade over the last century, with rapid continued warming projected over the present century and beyond. The consequences of these temperature changes have been analyzed and widely reported. They involve disruptions to agriculture, water systems, storms, ecosystems, ocean chemistry, and a wide variety of other effects. But even these wide ranging impacts may understate the potential dangers. Wagner and Weitzman

emphasize that the standard analyses of climate change ignore our deep uncertainties about the extent and impacts of changes. They argue that recent developments in earth sciences and other studies suggest that the potential impacts of extreme events—what are known as "tail events. Tail events are phenomena that are so surprising, so outside everyday observations, that we are unprepared to deal with them. They are called tail events because they come from the far tail, or most unlikely part, of a probability distribution.

3. There are two ways to slow climate change, and thereby to reduce the likelihood of catastrophic damages. One is the hard slog of reducing emissions. The other is to use geoengineering that attempts to offset the CO2induced warming. Geoengineering here means management of solar radiation—techniques that reflect sunlight back into space and prevent it from warming the earth's climate. We can think of the process as making the earth "whiter" or more reflective, so that less sunlight is absorbed by the surface of the earth. This cooling effect will offset the warming that comes from the accumulation of CO2 in the atmosphere. The whitening process is similar to what occurs after large volcanic eruptions. After Mount Pinatubo in the Philippines blasted 20 million tons of sulfur dioxide into the stratosphere in 1991, global temperatures fell by about half a degree centigrade because the particles reflected sunlight away from the earth. At present, there have been no largescale geoengineering experiments on our globe (aside from natural eruptions), so the estimates of its impacts and side effects are based on computer modeling.

Application of Climate Changes in our Environment:

The consequences of these temperature changes have been analyzed and widely reported. They involve disruptions to agriculture, water systems, storms, ecosystems, ocean chemistry, and a wide variety of other effects.

Pakistan can play an important role in combating climate shock. We need to invest in renewable tech like solar cell, wind turbines or fuel cells. In the long run we can be a part of global climate club that works proactively in advocating policies that reduce CO2 emissions on a global level.

Our economic plans should have a futuristic view that incorporate strategies to fund climatic wellbeing. Those violators who do not conform to climate friendly policies should be taxed and penalized so that others also learn to cooperate.

Lastly as the developments in climate change are progressing in a positive direction, people are becoming more aware, we must comply with new global treaties related to climate. It will help us reap benefits of preferential trading treatment and reduce trade tariffs from major economic powers of the world.