

From: Rui Zhang

To: Development and Reform Commission of Hebei Province

Subject: Implementing Stringent Environmental Tax Laws and Tax Incentives in the Hebei Province

Introduction

The contemporary society demands that organizations remain socially responsible for their activities and operations that impact on the environment, an approach known as corporate social responsibility. The Chinese economy is significantly growing as evidenced by the improved urbanization, industrialization, as well as a greater increase in energy consumption. However, it has adversely impacted on the environment and the society in the form of air pollution. The increased toxic emissions into the environment negatively affect the health of the people living in China. The Hebei Province in particular, is considered the core of seven of the smoggiest cities in China. Smog is the largest contributor of air pollution in the region. Nevertheless, the Hebei local government has been in the frontline over the last three years in the fight against pollution, although experts posit that implementation of legislations has legged amid the constant concerns regarding the effects of hog controls on economic growth. Therefore, there is the need to implement stringent mechanisms to increase compliance and encourage companies to minimize their environmental emissions.

Background

The rapid growth of Chinese economy over the last three decades sets China as the second largest economy globally regarding the gross domestic product (GDP) in 2010. Moreover, in 2009, it was the world's biggest energy consumer. (Chen et al. 1959). In 2012, China consumed approximately 2.43 billion tons oil equivalent of total energy. Iron and steel manufacturing

sector contributes the largest part of the Hebei's economy. The contribution is likely to grow amid the continued consolidation in the steel industry. In 2012, Hebei's GDP increased by 9.6 percent to RMB2.66 trillion (Lian 398). Moreover, it serves as a fundamental industrial base and transportation hub for the regions giant neighbors. Besides, Hebei is China's biggest steel-producing region. Coal provides the primary energy source to the economy which constitutes 67 percent of the total energy usage in China.

Impact of Chinese Economic Developments

Amid all these robust economic growth developments, there have been adverse effects on the environment evidenced in the state of increasing magnitude of pollution. China's cities have experienced a myriad of urban pollution adversities in the recent decades. According to He, Huo and Zhang, black smoke from heaps was a feature of the country's industrial cities, followed by various cities experiencing severe acid rains pollution (411). Recently, air pollution has degraded the air quality in the cities as a result of nitrous oxides, carbon monoxide, as well as petrochemical haze. According to a report by Sidney Leng (2016, December), the readings of the most toxic components of smog in Hebei Province exceeded 1000 micrograms per cubic meter in December 2016, which was 100 times greater than the WHO recommendations of 10 annually. Moreover, Hebei hosts six out of ten of the most polluted cities in China including Shijiazhuang, Baoding, Xingtai, Tangshan, Handan and Hengshui. The air pollution exacerbates in the region during winter when coal is burned to heat homes. It is equally unsafe to stay in the houses since the smog exceeds the air quality index. Since coal is the most used type of fuel in Hebei, its contribution to air pollution in the region is significant. In 2015, coal-burning contributed approximately half of air pollution in the region during the heating regions and 20 percent outside of heating region (Lian 399).

Air quality in Chinese cities in 2013

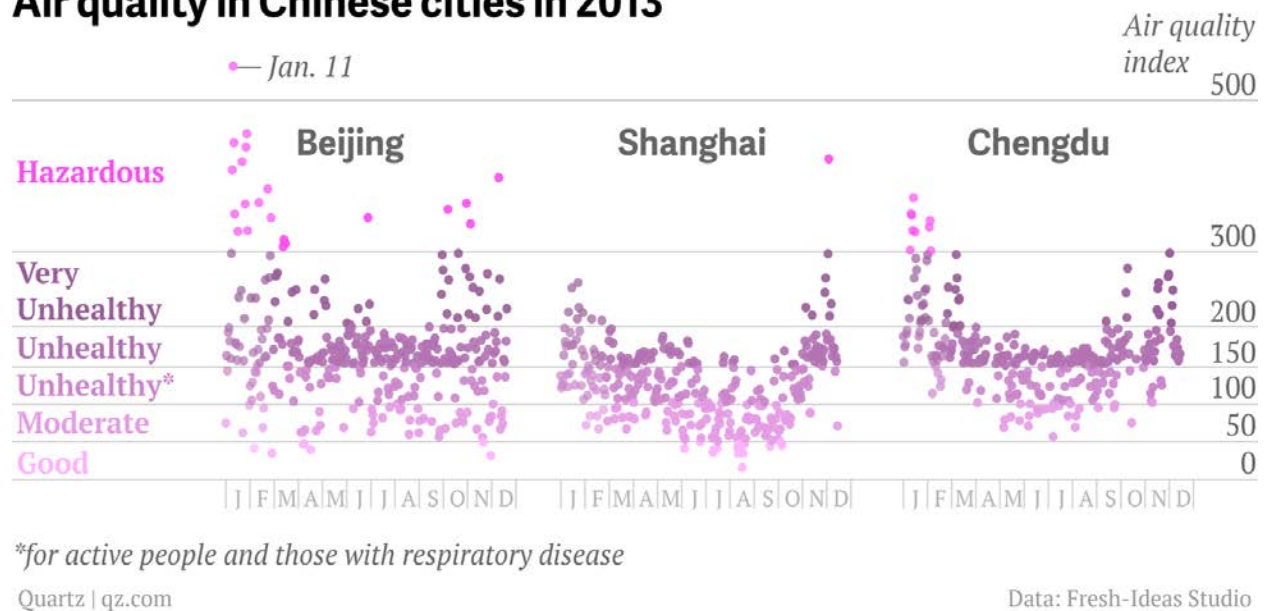


Figure 1: Source. Quartz. <https://qz.com/159105/2013-will-be-remembered-as-the-year-that-deadly-suffocating-smog-consumed-china/>

Effects of air pollution

Air pollution has detrimental implications on the health of Chinese citizens. Based on the Global Burden of Disease Study conducted in 2010, substance particles having an aerodynamic diameter less than 2.5 μm (pm) is the fourth largest danger to the people of China (Chen et al. 1959). The same study shows that approximately 1.2million people died too soon in China as a result of polluted air. Moreover, there has been an exacerbation in the cases of death due to lung cancer constituting 30.84 deaths per 100,000 population in 2004-2005 which is double the rates in 1973-1975. Furthermore, other studies conducted by other organizations including WHO indicate between 350,000 to 500,000 premature deaths in China occur annually due to outdoor air pollution. These devastating findings from the studies demonstrate the magnitude of adverse effects of air pollution and the Chinese government's failure to mitigate the threat. Additionally, it reflects on the companies' failed interventions to sustain corporate social responsibility (CSR).

Failed Initiatives to Mitigate Air Pollution

A myriad of challenges has deterred the Hebei Province from controlling the amount of pollution caused by the industries in the region. A vast majority of them relate more to the enforcement initiatives rather than legislative. According to He, Huo, and Zhang, China's federal government assigns multiple agencies to protect the environment obstructing effective implementation of the environmental laws. This limits the powers of Hebei Environmental Protection Inspection Group (HEPIG) for fully executing its mandate (410). It is a challenge since the local administration prioritizes on economic growth which is often driven by the polluting companies; thus a strong incentive exists to disregard environmental contraventions for economy's sake. A report by the Ministry of Environmental Protection on quality of air in its cities shows that in Hebei Province, the environmental bureau played a significant role in enforcing emergency response, although other agencies remained inactively involved (Xinhua, 2017 February). Additionally, the report indicate that many companies failed to meet the requirements to cut pollution and power use. It is an indication of failed collective initiative of environmental protection agencies to enforce laws.

Recommendation

Environmental protection should be everyone's initiative, including the public, the government, organizations, and companies. It should be the prerogative of organizations to sustain corporate social responsibility to bolster the well-being of the society and the environment. Besides, the government interventions should go beyond just establishing stringent legislations to mitigate air pollution. The process should extend to vigilant implementation. The Hebei Province has formulated environmental initiatives to reduce pollution. However, the initiative has been ineffective owing to various implementation challenges as initially discussed. For instance,

during the December menace, Hebei released a red alert that ordered the suspension of some polluting operations to minimize industrial pollution. However, some firms violated the order and continued to operate. Such conducts are encouraged by leniency from the implementing authorities.

Carbon Taxation

A fight against air pollution in Hebei should focus on carbon footprint. Carbon tax imposes a fee on consuming carbon-based fuels such as coal with the core goal of minimizing or eliminating fuels whose by-product deteriorate the environment. The strategy should aim at reducing the amount of carbon emitted into the environment with steel and iron industries as the major targets in the Hebei Province. A carbon tax will encourage these firms to seek alternative sources of energy to minimize their operating costs. As a result, it will promote creativity in renewable energy such as a significant breakthrough in solar, wind, or hydropower.

The Hebei Province can place a supercharge on carbon-based fuels as well as other sources of pollution like industrial processes. Under this system, the price to pollute the environment establishes the strength of economic signal and regulates the magnitude to which the local government encourages green energy choices. For instance, high if the Hebei Province impose stronger prices on emission, it will result in the local firms increasing their investment in cleaner energy sources like solar and wind. It can impose a hefty charge of \$150 per tonne of carbon pollution. Even though the tax on carbon makes polluting practices by companies much expensive, it enhances the affordability of green technologies with increase in the price signal over time. The homes and companies will use green heating technologies, thus significantly reducing the dependence of coal.

Pricing Carbon

A carbon tax of \$75 per ton in developed economies and \$35 in other economies is sufficient to reduce emissions by 5.6 metric gigatons (Nunez 1). The Hebei Province government can set a price per ton on carbon and translates it into a tax on electricity, natural gas, or oil. A carbon tax can be paid upstream whereby the government charges for instance \$10 per oil barrel as a carbon tax to all businesses. Charging extra as a carbon tax for carbon-based fuels is cost-effective and does not require thorough monitoring by environment protection agencies, thus Hebei might not experience an implementation challenge.

Successful Carbon Tax Programs

Sweden has successfully used carbon tax to reduce emission since 1991 with Sweden experiencing over 100 percent economic growth during the period (Liang, Fan, & Wei 317). Other studies indicate that carbon tax can be a significant tool to reduce pollution. Gage et al., indicate that greenhouse gas emission in British Columbia (BC) have decreased by 16.4 percent since 2008 with carbon tax as a leading driver (3). Besides, the report indicate show that BC's carbon tax has reduced more than 3 million tCO₂e emissions comparable to counterfactual situation of no tax (Gage et al., 3). The emission per person in Denmark decreased by 15 percent between 1990 and 2005 since implementing the carbon tax in 1992.

How Carbon Tax Could Resolve the Failed Initiatives

Since implementation of environmental protection legislation is a current problem facing Hebei Province, carbon taxation will significantly alleviate the challenge. The method offers a market-based simplicity. It does not require supervision and monitoring to ascertain compliance of polluters with the regulations, since it is imposed on the prices of the fuels. Therefore, all companies and users of the fuel will be incurring carbon tax provided they continue using the

fuel. Tyson suggests that carbon tax can be a core pillar of tax reforms and sound fiscal policies. It is because when used to replace the other methods of taxation, it could be a key driver for tax simplification (1).

Although China has experienced significant economic growth over the decades, there have been devastating impacts on the environment from the industrial activities. The industrial developments and robust dependence on coal for energy have increased air pollution. Air pollution has adverse effects on human health such as lung cancer and death. Both the local and federal governments of China must enforce stringent measures to mitigate pollution. Carbon taxation could result in companies operating more socially responsible and seek for alternative greener energy sources.

Annotated Bibliography

Chen, Zhu, et al. "China tackles the health effects of air pollution." *The Lancet* 382.9909 (2013): 1959.

The article presents statistics related to the Chinese economic growth, energy consumption, and state of pollution. The information are extracted from China's government resources, thus increasing its credibility. Besides, this is a peer-reviewed journal.

He, Kebin, Hong Huo, and Qiang Zhang. "Urban air pollution in China: current status, characteristics, and progress." *Annual review of energy and the environment* 27.1 (2002): 397-431.

He, Huo, and Zhang review the current nature of air pollution of Chinese major cities followed by a description of the primary urban pollutants. This article provide essential information to visualizing the magnitude of air pollution in China. It is a peer reviewed article and is credible as the information is based on examination of current studies.

Patterson III, Charles D. "Environmental taxes and subsidies: what is the appropriate fiscal policy for dealing with modern environmental problems." *Wm. & Mary Envtl. L. & Pol'y Rev.* 24 (2000): 121.

Peterson presents the state of the environment since the industrial revolution. In his work, he describes some of the environmental protection strategies adopted by different states like the U.S., UK, Japan, and German in response to the environmental issues facing them. It presents another excellent source for credible information on the overall strategies that the Henei Province could consider to tackle its pollution problems. This is also a peer-reviewed journal article.

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