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Recently, some politicians and media outlets in the United States and the West have often been hyping the “China overcapacity theory.” They unjustly accuse China of “dumping large quantities of solar panels, lithium batteries, and electric vehicles at unfair prices onto the global market, disrupting the global supply-demand balance, causing a spiral decline in the prices of new energy products, distorting global pricing mechanisms, and harming the sustainability of global manufacturing.”

For China, these statements are essentially a rehash of old rhetoric. Over a decade ago, the United States was also complaining that overcapacity in China’s steel and aluminum industries had impacted employment opportunities for American manufacturing workers. According to the usual modus operandi of Western nations, the “overcapacity theory” is, in fact, an excuse for implementing trade protectionist measures against Chinese new energy products.

What Is Overcapacity?

Theoretically speaking, overcapacity usually refers to a situation in which an industry’s production capacity significantly exceeds demand, leading to a noticeable surplus in supply and a sharp decline in prices. Clearly, this definition links overcapacity with supply-demand imbalance.

From the perspective of the laws by which a market economy functions, producers (supply side) and consumers (demand side) are separate and their behaviors vary greatly. Factors such as macroeconomic cycles, changes in consumer preferences, technological advancements, natural disasters, and sudden public health events can all cause significant shifts in supply and demand. Therefore, supply-demand balance is momentary and relative, while supply-demand imbalance is normal and absolute. The

role of the price mechanism is to guide supply and demand towards balance through price fluctuations. Thus, a supply-demand imbalance is the norm in market mechanisms, and one should not lightly equate it with overcapacity.

From the perspective of industry development life-cycles, the new energy sector, as an emerging industry, is characterized by rapid technological innovation and diverse technological pathways. Some companies, after completing initial technological accumulation and market cultivation, make significant investments to capture market share, which leads to a temporary excess of supply over demand. However, as the industry matures, high-quality, technologically advanced capacity will replace outdated capacity, and the supply-demand imbalance will improve. Therefore, it is incorrect to consider the current temporary oversupply of some new energy products as overcapacity.

Within the present context of deep global economic integration, evaluating whether an industry's supply and demand are imbalanced or whether overcapacity exists requires moving beyond the confines of individual countries and considering the global scale. According to economic principles, a country's industrial structure and the capacity scale of specific industries are determined by factors such as its natural resources, human resources, and technological level. Countries engage in division of labor and cooperation on a global scale based on their comparative advantages, which is a key way of optimizing resource allocation worldwide. For example, developed countries export technology products and financial services, resource-rich countries export primary products, and China exports manufactured industrial goods. Clearly, we cannot label the high export volume industries of each country as "overcapacity." This means we cannot consider the financial and technology sectors of the United States, the new energy sector of China, or the oil industry of Saudi Arabia as overcapacity industries. Doing so would contradict fundamental economic understanding and throw the progress of economic globalization into reverse.

Whether It's "Over" Cannot Be Generalized

The so-called "core evidence" cited by American politicians and media in their recent hype about "China's excess capacity in new energy" is the decline in China's industrial capacity utilization rate and drop in industrial product prices. Evaluating the issue of China's industrial overcapacity requires specific industry analysis and cannot be generalized.

Macroeconomic fluctuation cycles and changes in foreign demand inevitably have a significant impact on China's industrial capacity utilization rate. As the world's factory and largest exporter of industrial manufactured goods, China has indeed long been troubled by overcapacity issues, prompting our continuous efforts to promote economic restructuring and industrial upgrading.

Generally speaking, the most commonly used important indicator for measuring a country's capacity situation is its capacity utilization rate. The capacity utilization rate ranges between 0 and 1, where 0 indicates that the factory is completely idle, 1 indicates that capacity is fully utilized, and 80% indicates that capacity utilization is at a normal level. During the period from 2014 to 2016, due to the lagging impact of policies from the 2008-2009 financial crisis, industries such as steel and aluminum experienced severe overcapacity, bringing China's industrial capacity utilization rate down to a historic low of 72.9%. This spurred China's supply-side structural reform. In 2022 and 2023, due to factors such as the COVID-19 pandemic, China-US trade friction, and low investment in the real estate sector, China's overall industrial capacity utilization rate dropped to around 76%, a relatively low level since 2016. However, it was still about 3 percentage points higher than the 2016 rate and not significantly different from the capacity utilization rates of 78.9% in the United States and 78.8% in the European Union. These figures are clearly not sufficient to prove that China is currently experiencing significant overcapacity.

It is true that some traditional industries in China are currently showing signs of overcapacity. For example, the capacity utilization rates in the glass and cement industries are only around 30% due to the downturn in the real estate market. Furthermore, it must be acknowledged that there is a significant imbalance between

supply and demand in China's photovoltaic products and lithium batteries. This is reflected in the following data. The capacity utilization rate of China's silicon wafer industry dropped from 78% in 2019 to 57% in 2022; the production of lithium batteries for electric vehicles in China in 2022 was 1.9 times the domestic demand, with an expected capacity of 4,800 gigawatts in 2024, but domestic demand in China is only 1,200 gigawatts, meaning that 75% of battery capacity needs to be exported. The price of the main raw material for lithium batteries, lithium carbonate, has dropped by 80% from its peak in 2022, and the price of solar panels has also fallen by around 50% compared to the previous year. However, based on these factors alone, one still cannot conclude that there is overcapacity in China's photovoltaic and lithium battery industries.

If we take into consideration global carbon peaking, carbon neutrality goals, and the energy transition process, the production capacity of China's photovoltaic products and lithium batteries cannot actually meet future global market demand. In order to achieve the goals of the Paris Agreement, the International Renewable Energy Agency (IRENA) predicts that by 2030, the global cumulative installed capacity of photovoltaics will exceed 5,400 gigawatts, which is about four times and nine times the global and Chinese cumulative installed capacity in 2023, respectively. The International Energy Agency (IEA) predicts that by 2030, global demand for power batteries will reach 3,500 gigawatts, which is more than four times and more than five times the global and Chinese production in 2023, respectively. Additionally, the significant decrease in the price of photovoltaic products is also a result of continuous technological advancements, which greatly promotes the reduction of photovoltaic electricity costs and the development of the new energy industry.

For the electric vehicle industry in China, there is no overcapacity issue in terms of either capacity utilization or export prices. Currently, the capacity utilization rate of China's electric vehicle industry has reached the normal threshold of 80%. China is the world's largest market for pure electric vehicles and plug-in hybrid electric vehicles. Domestic sales grew by 36% year-on-year in 2023 and are expected to increase by around 25% year-on-year in 2024. Furthermore, although China became the country

with the highest car export volume for the first time in 2023, the proportion of exports to production is much lower than that of Germany, Japan, and South Korea. In addition, the prices of Chinese exported cars, especially electric vehicles, are rising rather than falling. The price of Chinese electric vehicles in the European and Mexican markets is about twice that of their domestic markets. Moreover, the current capacity of China's electric vehicles cannot meet the future demand for global energy transition. According to estimates by the IEA, the global demand for new energy vehicles will reach 45 million units by 2030, which is more than three times the global sales in 2023 and nearly five times China's production in 2023. This indicates that Chinese electric vehicles have strong competitiveness in terms of both price and quality.

Caution Is Needed Regarding Trade Protectionist Measures

The competitive advantages of China's new energy industry can be attributed mainly to China's large and fully competitive domestic market, leading technological innovation capabilities, a diligent and highly skilled workforce of engineers and industrial workers, a complete industrial and supply chain system, well-developed charging infrastructure, and relatively low energy costs. The achievements of China's new energy industry today are not the result of the "unfair competition" alleged by American politicians, but rather the outcome of the hard work and effort of Chinese companies. The Chinese government's industrial policies and financial subsidies have indeed promoted the new energy industry's development, but they are secondary compared with technological iteration and innovation. From this, a basic fact may be derived: China has already surpassed the United States and the European Union in the number of published papers in the field of new energy technology.

It should be pointed out that supporting the development of the new energy industry and encouraging green transition is the consensus and practice of the international community. Countries around the world are supporting the development of the new energy industry in various ways. For example, the US Inflation Reduction Act provides tax credits of up to \$7,500 per vehicle for electric cars assembled in North America.

The reason why Western countries frequently exaggerate “China’s new energy overcapacity” is that they have reluctantly realized that it is difficult to compete with China’s new energy companies. As a result, they are forced to use the narrative or “language trap” of “overcapacity” to disguise their trade protectionist behavior and limit the development of China’s new energy industry.

Currently, one after another country around the world is proposing goals of “carbon peaking” and “carbon neutrality” and accelerating its energy transition efforts. This indicates that the photovoltaic, wind power, and electric vehicle industries will have enormous development opportunities and are expected to become leading emerging industries that will drive technological progress and economic prosperity in this century.

Against the backdrop of the current major power rivalry between China and the United States, the latter is even willing to sacrifice the pace of its own energy transition, as it wants to spare no effort to suppress China’s new energy industry, curb China’s positive development momentum, and weaken China’s competitive advantage in the industrial sector.

The European Union plans to complete its anti-subsidy investigation into Chinese electric vehicles in July 2024, and it will impose tariffs on them. Meanwhile, the Democrat Biden administration in the United States, driven by domestic election considerations, plans to impose a high tariff of 100% on them.

In the face of trade protectionist measures from the United States and other Western countries, the Chinese government and enterprises should prepare contingency plans. First, due to the impact of US policies such as “near-shoring,” “friend-shoring,” and “onshoring,” as well as the imposition of high tariffs on Chinese products, new energy companies in China will find it difficult to export large quantities of photovoltaics, lithium batteries, electric vehicles, and other products to the US market from their home base. It is crucial for them to clearly understand and prepare for this scenario. Second, Chinese enterprises should be encouraged to invest in new energy overseas, especially in Latin American countries such as Mexico and the countries of Southeast Asia, in order to allocate production capacity globally and to appropriately

avoid US tariff restrictions. However, at the same time, Chinese enterprises should consider the absorption capacity of countries like Mexico, Vietnam, and Thailand, and do their utmost to avoid investing *en masse*. Third, when considering the continuously increasing entry barriers in the European and American markets, Chinese enterprises should appropriately control the scale of investment in the domestic production of photovoltaic cells, lithium batteries, and other products, in order to avoid supply-and-demand imbalances caused by rising external market barriers.

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