



ASIA PERSPECTIVE

Insights: Quarter 3, 2022

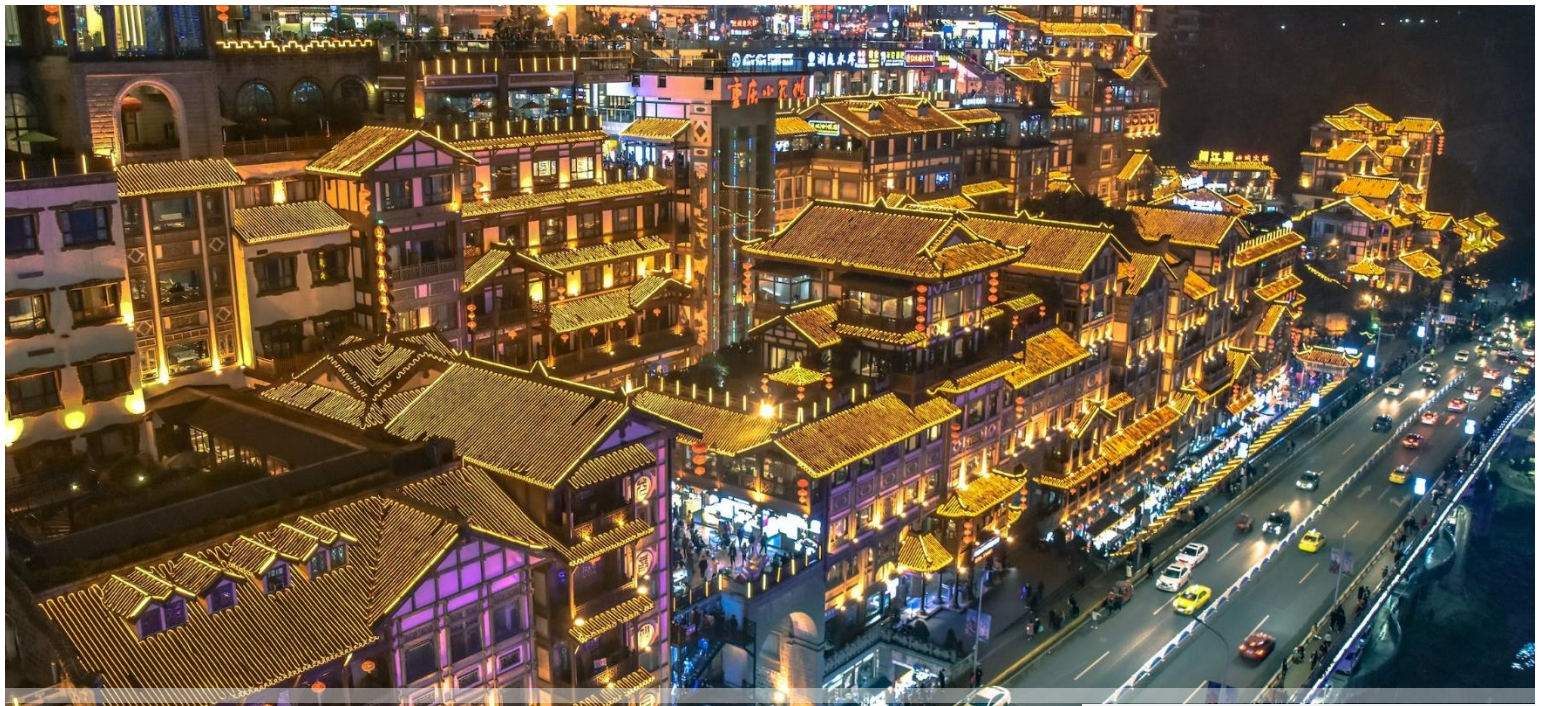
China Economic Update Report

This Issue:

China's Economic Performance in Q3 2022
China's developing its vanadium flow battery industry

www.asiaperspective.com





China's GDP grew by 3.9% (YoY) in Q3 2022, faster than expected, albeit not robust.

Aided by various government measures, especially the easing of COVID-19 restrictions, China's GDP advanced 3.9% year-on-year in Q3 2022, surpassing the market forecast of 3.4% and rising from the GDP growth of 0.4% in the previous quarter.

Infrastructure and manufacturing equipment upgrades - including in fixed-asset investments - grew by 5.7% in the third quarter of 2022, higher than the 4.2% growth in Q2 2022. In addition, since China authorities moved away from mass COVID-19 lockdowns towards more targeted curbs, consumer expenditure picked up to 3.5% in Q3, a significant rise compared to the contraction of 4.6% in the previous quarter. These two factors greatly contributed to China's economic rebound in this quarter.

However, as China is continuing to hold on to its zero-covid policy, with little signs of moving away from it in the near future, the country's economic rebound is still relatively shaky. Domestic demand diminished towards the end of Q3. Retail sales grew by 2.5% year-on-year in September, slowing from August and missing the expected 3.3%. Additionally, a deepening property slump in China further dragged down economic growth. Investments in real estate declined by 8% during the first three quarters of 2022, while the decline over the first eight months was 7.4%.

For the first nine months of 2022, China's GDP grew by 3%, based on preliminary data from China's National Bureau of Statistics. During the full year of 2022, China's GDP growth is expected to be around 3.0%, representing a significant decline from 8.1% in 2021 and far below China's official GDP growth target of 5.5%, making it one of the most disappointing performances in almost half a century.

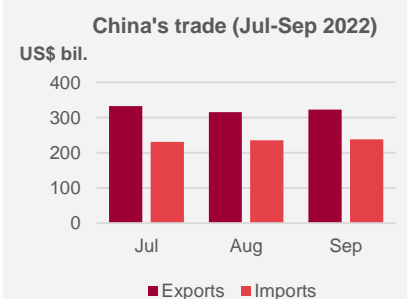
China's trade remained weak despite surpassing forecasts

China's trade surplus increased to USD 84.74 billion in September 2022, from USD 67.05 billion in the same month a year earlier, beating the market consensus of USD 81 billion.

China's exports grew by 5.7% year-on-year to USD 322.76 in September 2022, topping the expected 4.1% but marking the slowest pace since April 2022, largely caused by weakening external demand as inflation shoots up around the world.

Imports to China rose meagerly by 0.3% year-on-year to USD 238.01 billion in September 2022, the same pace as in the previous month and below market expectations of a 1.0%, due to sluggish domestic consumption, increasing import prices, and persistent COVID-19 restrictions.

During the first nine months of 2022, the trade surplus was USD 645.1 billion, with exports expanding by 12.5% and imports widening by 4.1% from the same period in 2021.



(Source: China's General Administration of Customs)

China's developing its vanadium flow battery industry

China is putting in increased efforts into developing its vanadium battery industry, which is expected to have transforming effects on particularly the electric vehicle and sustainability industry. The vanadium battery industry is expected to reach 2.3 GW by 2025 and 4.5 GW by 2030. Furthermore, the vanadium battery energy storage is expected to reach installed capacity of 24 GW and a total market size of US \$5.62 billion in 2030.

Vanadium batteries hold a vast number of beneficial properties including speedy charging, superior conversion efficiency, long service lives, high versatility, and fast response speed. When compared to the widely used lithium batteries, vanadium batteries have many outweighing advantages, including easier recycling, higher safety, and longer life.

Vanadium battery production has been relentlessly pursued by China. The battery not only allows the country to capitalize on its current strengths, but also helps towards achieving the sustainability goals. While at least 65% of the lithium demand from China's battery and electric vehicle industries is imported through long supply chains from other countries such as Chile and Australia, China owns the greatest reserves and is the biggest producer of vanadium. In 2021, China accounted for around 39% of global vanadium reserves, and produced 68% of global output. Additionally, the large-scale production of vanadium batteries would greatly contribute to China's aim of 1,000 additional gigawatts of renewable energy by 2030 as the supply of vanadium in the battery can in theory be recycled endlessly.

In China, large-scale storage stations for vanadium flow batteries has been built to offset the variability of electricity from renewable energy sources. During peak times, the station's batteries are charged by solar and wind by converting electrical energy into battery-stored chemical energy. Whenever solar and wind are insufficient,

the batteries will convert and feed the stored energy back into the grid. During the third quarter of 2022, the commercialization of vanadium technology gained considerable traction, which was illustrated by several advancements in storage power stations for this technology. For example, in September 2022, the world's largest vanadium batteries storage station was connected to a grid in Dalian. Construction for some other storage stations for vanadium batteries also began in other regions, such as Qapqal Xibe, in the same month.



Still, in order for China to grow its vanadium battery market, large-scale production expansion is pivotal. At the moment, the majority of vanadium in China is generated as a by-product of the steel industry and almost all of it is also reused into the steel industry. Therefore, the production of vanadium still needs to be expanded in order to foster a stand-alone vanadium battery industry.

Vanadium redox flow batteries are expected to become the future of utilities. As renewable energy technologies such as electric vehicles and renewable power generation continue to grow across global markets, more and more opportunities for vanadium batteries will arise, enabling growth in solutions for mass clean energy storage systems and electric vehicle charging.

5G technology is experiencing surging growth



Chinese telecom operators have enjoyed an increasing number of 5G subscribers. The most recent data available from Chinese operators showed a net gain of 31.4 million 5G users in September 2022. China Mobile, the world's largest operator in number of subscribers, gained 18 million 5G subscribers in September and has obtained a total of 170 million 5G subscribers since the beginning of the year.

Construction of 5G base stations in China has advanced steadily thanks to the country's initiatives to promote 5G network construction in recent years. According to the Ministry of Industry and Information Technology, China had over 2.1 million 5G base stations at the end of August 2022, making up 19.8 percent of its total mobile base stations. According to the ministry, roughly 677,000 5G base stations were constructed in China in the first eight months of 2022.

Thanks to its high speed, reliability, and low latency, the 5G technology has allowed a broad digital transformation in many industries, such as manufacturing, healthcare, and agriculture. For instance, in the agricultural sector, a rice paddy field in Heilongjiang Province, northeastern China, uses a probe with a 5G-equipped AI camera for leaf age detection, disease identification, plant disease prevention, and pest control. Another example is Contemporary Amperex Technology (CATL), one of the top producers of lithium-ion batteries for automobiles in China. At the CATL production facility, the centralized control of production, the ultra-high speed visual quality inspection, and the augmented reality expertise system are all 5G-enabled.

China has been leading the global 5G scene and holds prominent advantages in the R&D of the next-generation network, supporting the development of the digital economy.



Asia Perspective is an independent management consultancy with global presence and local knowledge. We assist our clients with business advisory regarding analysis, strategy and implementation. Our mission is to turn our clients' Asia business vision into reality and add significant value to your business.

We offer specialist services covering purchasing, market entry, commodity strategy and financial advisory. This includes market research and forecasts, sourcing and pricing strategy, M&A advisory, risk assessment studies etc.



Contact Asia Perspective

For full office postal addresses, please visit: <http://www.asiaperspective.com/contact-us/>

Shanghai

Tel: +86-(0)-21-340-106-10
shinfo@asiaperspective.com

Beijing

Tel: +86-(0)-185 0048 6766
beijinginfo@asiaperspective.com

Zhongshan

Tel: +86 18 826 002 703
zhinfo@asiaperspective.com

Ho Chi Minh City

Tel: +84-35 417 4913
vninfo@asiaperspective.com

Stockholm

Tel: +46-(0)-70-769-92-07
stockholminfo@asiaperspective.com

Hong Kong

Tel: +85-(0)-227-399-698
hkinfo@asiaperspective.com

Jakarta

ininfo@asiaperspective.com

Helsinki Representative

Johan Hackman
Tel: +358 400607378
johan.hackman@asiaperspective.com

Milan Representative

Luca Poggiaroni
Tel: +39 393 9113552
luca.poggiaroni@asiaperspective.com