



From farm to fork: The digital way

The RBC Asian Equity team

As part of the RBC Asian Equity team’s ongoing insights into China as a leading digital economy, we look at the impact of digital transformation on reducing social inequality, a key pillar of President Xi Jinping’s common prosperity campaign. Here we offer our views on the ambitious goals of Chinese policymakers to develop the agriculture sector via technology, the role of China’s internet giants in achieving these goals and the commercial, societal and environmental benefits to consumers and crop producers.

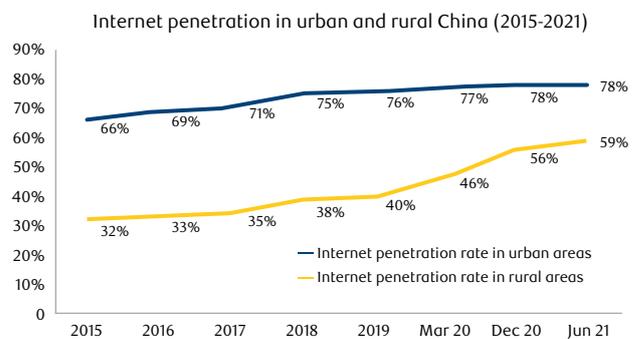
The facts behind the farming

- As of 2020, 350 million farmers in China’s agricultural sector and 550 million residing in rural areas accounted for 25% and 39% of the country’s population respectively¹.
- The Chinese government has targeted online penetration of agricultural products and produce to reach 15% of total sales, by 2025².
- The goal to elevate the productivity and income levels of farmers has been mentioned in the No.1 policy statement for 17 consecutive years, since 2004³.

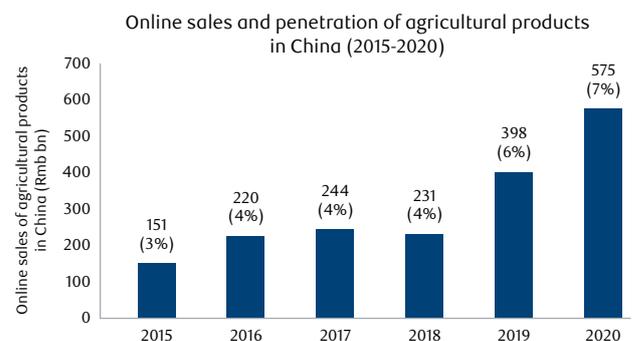
Technological transformation

China’s e-commerce industry has witnessed staggering growth in recent years and currently stands at around Renminbi (Rmb) 13 trillion (USD 2.3 trillion)⁴, which accounted for almost half of the global e-commerce market in 2021. Rural internet users exceeded 300 million by mid 2021; this remarkable growth is in large part due to the uptick in internet penetration in rural China, with e-commerce adoption being a key driver. From this, a Rmb 422 billion market (USD 66 billion)⁵ of e-commerce-ready agricultural products has emerged, driven by consistent policy support and the robust infrastructure build-out in rural China.

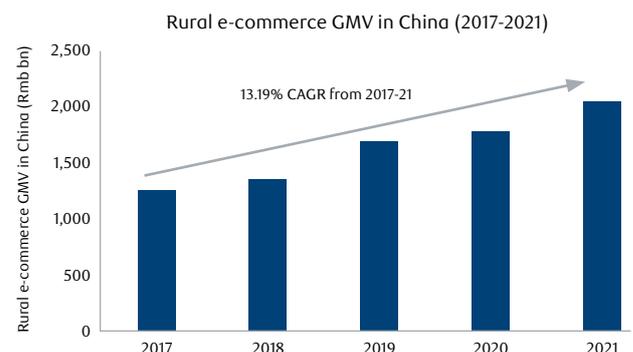
Exhibit 1: Rural internet users are triggering new growth in Chinese e-commerce



Source: Cyberspace Administration of China. Data as at June 2021.



Source: Ministry of Agriculture and Rural Affairs of the PRC. Data as at 2020.



Source: Ministry of Agriculture and Rural Affairs of the PRC. Data as at 2021.

¹ World Bank 2018 ² Ministry of Agriculture 2019-2020 ³ The State Council 2022 ⁴ GlobalData Banking and Payments Intelligence Center 2021 ⁵ China Daily 2022

Connecting consumers with crop growers

By the end of 2020, leading Chinese e-commerce platforms including Alibaba, JD.com, Pinduoduo, Meituan and even ride-hailing company Didi Chuxing, were selling farm produce via the consumer-to-manufacturer (C2M) channel. By bypassing layers of middlemen such as county, city and provincial distributors and legacy logistics infrastructure, many of China's 1.3 billion consumers were able to purchase agricultural products, usually in bulk, through a few simple clicks on their mobile devices.

The development process of the C2M business model has been smooth and for crop growers, the C2M business model has been a game changer, backed by the government as well as e-commerce giants. Where opposition has occurred, this has been mainly from distributors whose businesses have been negatively impacted or farmers who are illiterate and/or without internet access. However, such is the level of commitment around C2M that major internet companies, such as Pinduoduo and Alibaba, are working with farmers to provide the necessary support.

In 2020, the per capita annual income of Chinese farmers was approximately less than one tenth of their counterparts in the United States^{6,7}. On average, fresh produce in China typically passed through 4-6 intermediaries before reaching the plates of the end consumer. With each intermediary charging 10-15% mark up, farmers made thin margins while their profits failed to reflect their value-add.

By eliminating layers of inefficiencies, the share of farmers' profits is substantially higher. It is not uncommon for farmers to make twice the profits on digital platforms than they would otherwise. In addition, the potential market for a farmer's fresh produce now spans the entire reach of platforms, creating a win-win for consumers and producers alike. Agricultural-related gross merchandise volume (GMV) on the Pinduoduo platform, for example, exceeded Rmb 270 billion (USD 42 billion) in 2020⁸.

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That said, the C2M model is still in its early stage of development and comes with challenges. Critics argue that it is not economically sustainable for e-commerce players to invest in this new business model as agricultural produce has a low basket value and consumers are typically price sensitive. Moreover, as agricultural produce is easily perishable, a substantial amount of investment is required to improve the fulfillment capabilities such as building regional warehouses and sorting centres, as well as upgrading the legacy logistics infrastructure. In the near term, profit margin for platforms may remain thin. While companies are making tangible progress, the long-term economic viability remains to be seen.



⁶ The State Council of the People's Republic of China 2022 ⁷ U.S. Department of Agriculture 2021 ⁸ Pinduoduo 2021

CGB: an innovative e-commerce model

China's logistical buildout in lower-tier cities has historically lagged those of its top-tier cities, with transportation costs for wholesale of crops much higher than in developed countries.

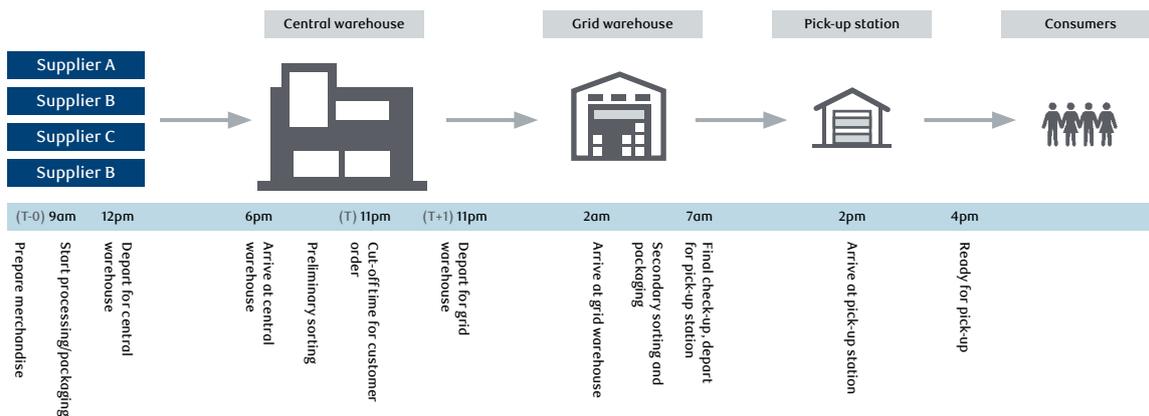
To narrow this gap, leading Chinese e-commerce platforms pioneered the widely-adopted Community Group Buy (CGB) model with the aim of maximising the commercial reach for fresh produce, as well as targeting waste reduction. In practice, it could work as follows:

Li, 26, is a farmer specialising in the production of purple garlic. Prior to joining Meituan's CGB platform, Li had to sell his agricultural products at a much lower price as the layers of distributors took a bulk of the profit and the lack of branding limited his bargaining power. He also faced challenges planning

the production quantity, as market information was not transparent. An e-commerce platform, such as Meituan, provides brand building for farmers like Li, paving the way for products to reach consumers directly in urban cities. Platforms market and deliver these brands to group leaders who are often local residents of the same community. In turn, these residents (or CGB leaders) take on the role of the local distributors with fresh groceries, such as the purple garlic, reaching end consumers in a much timelier manner.

Access to a wealth of customer data enables CGB platforms to consistently slash food waste across the value chain – particularly in the midstream logistics process – while also speeding up the delivery of fresh produce from farms to consumers.

Exhibit 2: The CGB model standardizes processes across the supply chain and enables next-day delivery of agricultural products



Source: Macquarie Research. Data as at April 2021.



Waste not, want not

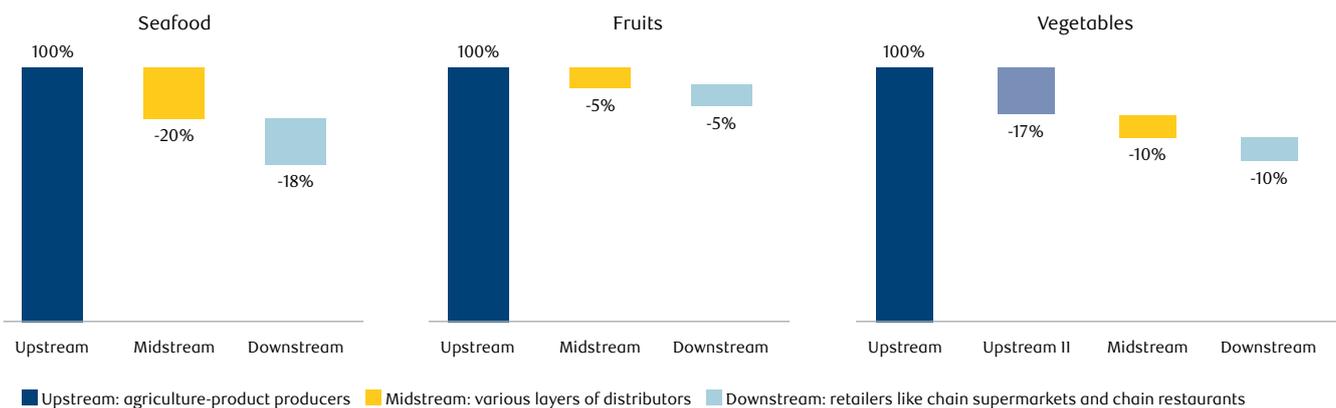
E-commerce operators have become a powerful driving force in reducing food wastage in China. In recent years, the country’s grain loss wastage in the post-production process, including storage, transportation and processing, has reached 35 million tons, which is equivalent to the grain needs of 60-70 million people annually⁹. CGB platforms have been making efforts to standardize the supply chain and build comprehensive employee training programs to minimize wastage in different steps of the logistics and handling process. Under the legacy distribution and fulfillment model, 10-40% of grain production is wasted before reaching the consumers¹⁰.

In recent years, the Chinese internet sector has poured billions of Renminbi in investments into physical warehouses as well as algorithms, in a bid to optimise storage and delivery efficiency. Meituan, for example, claims that its centralised system is capable of managing,

“Under the legacy distribution and fulfillment model, 10-40% of grain production is wasted.”

in real time, each crop’s maturation and duration, as well as transportation profile. Ultimately, Meituan aims to distribute fresh produce to reach end consumers at the peak of the life cycle, in order to minimize food wastage. It can also forecast demand so that farmers can plan capacity ahead of time. Apart from increasing farmers’ income levels and optimising the logistics process, Meituan has also created a wealth of job opportunities for rural citizens. Other benefits include fostering digital inclusion and raising rural citizens’ quality of life. Meituan and Pinduoduo, the two leading CGB platforms in China, have been recognised by the Chinese government for their contribution to the livelihood of rural citizens.

Exhibit 3: Wastage ratios across key fresh produce categories



Source: Macquarie Research. Data as at April 2021.

Capturing the opportunity

Beijing recognizes the crucial need in digitalizing its rural population to achieve its long-term development goals, and in turn, this development is creating exciting investment opportunities. E-commerce platforms have already begun to disrupt the agriculture supply chain. As their incomes increase, growers can reinvest in their farms and the technology to improve productivity, while consumers benefit from fresher and safer produce at lower prices. In turn, logistics providers are optimising their workflows while reducing spoilage along each step, resulting in savings along the value chain. These structural developments enable investors to reap the benefits of China’s digital innovation.

Our team has a long track record of bottom-up stock picking, based on a holistic, long-term understanding of trends across Asia. Our regional industry experts use their local knowledge, combined with proprietary research and analysis, to seek out high-quality, innovative businesses that also contribute positively to society.

Despite the uncertainty in policy direction around the internet in China, we believe companies with goals aligned to society’s needs will be well positioned to create sustainable social and economic value. We see these business models as future solutions providers and we feel optimistic about the positive impact they can create over the long term.

⁹ Xinhua News Agency 2020 ¹⁰ Macquarie Research. Data as at April 2021.



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