

# Economywide Effects of the China–Africa trade liberalization: Implications for South Africa's agriculture and food Industries

By

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## Abstract

This study analyses the economywide effects of China–Africa trade liberalisation, focusing on implications for South Africa's agriculture and food industries. Trade between China and Africa has grown rapidly, supported by South–South cooperation and policy frameworks such as the Forum on China–Africa Cooperation (FOCAC). Recent commitments to expand zero-tariff treatment for African exports signal deeper trade integration, although the expansion of South Africa's agricultural exports to China remain limited and constrained by tariffs and non-tariff barriers. The study addresses gaps in existing literature by incorporating economywide effects, non-tariff measures, and institutional constraints such as the Southern African Customs Union (SACU). A standard Global Trade Analysis Project (GTAP) computable general equilibrium model is used to simulate alternative trade liberalisation scenarios, including full and partial tariff removal and reductions in non-tariff measures. The results are expected to depict positive but uneven impacts across sectors. Competitive agro-food subsectors, such as fruits and processed foods, are likely to expand, while import-competing industries may face increased pressure. Welfare and GDP gains are expected to be modest but higher when non-tariff barriers are reduced.

**Key words:** China–Africa trade; trade liberalisation; computable general equilibrium (CGE); agro-food systems; non-tariff measures (NTMs); food security; economic integration

## 1. Background of the study

Over the past two decades, China has emerged as Africa's largest trading partner, with its engagement increasingly extending beyond extraction sectors into agriculture and food industries. According to Novak (2016), the reason for the observed trade growth between Asian countries (including China and India) and African countries is mainly underscored by the development of South-South cooperation and diplomatic relations, coupled with trade and development assistance. In 2024, total trade between the two continents reached about US\$295 billion in 2024 (tralac, 2025; ITC, 2026). This is equivalent to a 65% increase from a value of US\$179 billion in 2015. South Africa is currently the leading exporter to China among other nations, followed by the Democratic Republic of Congo and Angola, all accounting for approximately 60% of African exports destined for the Chinese market in 2024. Despite South Africa being the leading exporter to China in the African continent, South Africa's agricultural exports account for a relatively small share of Chinese agricultural imports, which equates to approximately 0.4% in 2024 (ITC, 2026). In addition, agricultural exports to China and other Asian countries are currently limited by the relatively high import duties and non-tariff barriers (ITC, 2026).

In the year 2000, during the Beijing ministerial conference, China established the Forum on China-Africa Cooperation (FOCAC), mainly for collective consultation and dialogue, and as a cooperation mechanism among developing countries (Nowak, 2016; African Union, 2026). Moreover, during the second FOCAC conference in 2003, China announced an increase in its assistance for Africa and zero-tariff treatment for products exported by selected Least-Developed Countries (LDCs). This was followed by the development of economic zones in Africa to support the development of infrastructure, improve customs procedures, and facilitate investment (Obuah, 2012; Novak, 2016). Recent policy initiatives under the FOCAC, including commitments to expand zero-tariff treatment for African exports, signal a shift toward deeper trade integration between China and African economies. For instance, since December 2024, China extended the zero-tariff treatment to all LDCs having diplomatic relations with China (FOCAC, 2025; Ministry of Foreign Affairs People's, People's Republic of China, 2025). Consequently, China has ratified a framework agreement on Economic Partnership for Shared Development with more than 20 African countries. Through this China-Africa Economic Partnership for Shared Development, China aims to negotiate and sign with individual countries and extend the zero-tariff treatment for 100 percent tariff lines to all the 53 African countries having diplomatic relations with China, excluding Eswatini due to its diplomatic relations with the Taiwan Republic (Ministry of Foreign Affairs People's Republic of China, 2025). Currently, it is unclear if the zero-tariff treatment will be unilateral or bilateral between each country and China. These initiatives are particularly relevant for the agriculture and food industries, where African countries possess comparative advantages but continue to face market access constraints.

Over the years, global integration through international trade has promoted economic growth in many countries, fostering development and poverty reduction (IMF, 2001). The development of a rules-based trading system through the General Agreement on Tariffs and Trade (GATT, 1947), and the World Trade Organization (WTO, 1995) has contributed to trade liberalization resulting from the gradual reduction or elimination of tariffs and other trade-related barriers, including among developing countries (UNCTAD, 2025). The principal aim of trade liberalization is to enhance economic growth by allowing countries to specialize in the production of goods and services and trade amongst each other (Thow, 2009). Trade liberalization creates a more integrated global economy through various trade agreements negotiated under the WTO framework based on national trade policy-making. Currently, about two-thirds of global trade occurs without tariffs, underscored by countries choosing to lower import duties below the most-favoured-nation (MFN) treatment or through negotiating and signing trade agreements (UNCTAD, 2025). On the other hand, the remaining tariff levels applied on the remainder of global trade are significantly high in certain industries, such as agriculture, which are highly protected. This is mainly prevalent in developing countries and limits their economic development, competitiveness, and integration into the global economy. Currently, agricultural exports from developing countries are subject to import tariffs averaging to approximately 20% under MFN treatment (UNCTAD, 2025).

Despite the growing policy relevance of trade liberalisation, especially amid thawing geopolitical trade wars, existing empirical studies on China–Africa trade largely focus on bilateral trade flows and impact on economic growth (Sandrey and Jensen, 2006; Novak, 2016; Utouh, 2024; Busse & Vogel, 2024; Liu et al., 2024). In addition, these studies mainly focus on trade liberalization in the context of tariffs and neglect the impact of NTMs on bilateral trade flows between Africa and China. Lastly, these studies do not reflect Africa's legal trade architecture. For instance, South Africa's trade policy autonomy is legally constrained by its membership in the Southern African Customs Union (SACU), which is guided by a common external tariff. Thus, if the China-Africa zero tariff treatment is conditional on reciprocity, South Africa cannot unilaterally reduce tariffs or enter into reciprocal bilateral trade agreements with third countries (*as the agreement excludes one member of SACU*). It is against this background that this study aims to analyse the economywide effects of various trade liberalization scenarios (including the elimination of NTMs) and considering the legal structure of existing African regional trade arrangements.

## **2. Literature Review: China–Africa Trade Liberalisation**

Trade liberalisation between China-Africa involves reducing trade costs and tariffs, creating a closer economic relationship between countries. This integration has facilitated policy coordination, such as initiatives that reduce transaction costs; this has helped African farmers to lower their trading costs and

earn better prices. Africa's agriculture has demonstrated greater stability in the face of economic challenges (Ma et al., 2025). Over time, China-Africa relations have progressed from an aid-driven model toward a more focused trade partnership that offers the potential for sustained welfare gains and economic development (Siméon et al., 2022; Ma et al., 2025).

Trade liberalisation allows countries to generate gains through resource-based specialisation. The Heckscher-Ohlin (H-O) model suggests that countries benefit when they focus on producing goods in which they hold a comparative advantage, determined by their skills, resources, and technology. This overall increase in economic efficiency shifts the country's focus from production towards export-oriented countries (Suranovic, 2006; Josephat, 2023). Furthermore, the Standard Trade Model emphasises that variations in skills, resources, and technology enable a country to be better positioned to produce certain goods compared to others. Through trade, countries can specialise in producing specific goods and gain from exchanging these goods with one another (Krugman & Obstfeld, 2012; Josephat, 2023).

However, the empirical evidence from China and Zambia shows that these gains depend on strong production systems. China gained from trade and became more competitive in global markets through investing in different industries and improving production (Josephat, 2023). In contrast, Zambia depended heavily on exporting raw products, which limited productivity gains. This highlights the risk for African countries of remaining exporters of low-value products, but not if trade liberalisation is complemented by investment, technology transfer, and improvements in production (Chen et al., 2026).

According to Josephat (2023), trade liberalisation affects labour allocation by promoting factor mobility, which can increase labour productivity and employment in efficient sectors. Josephat (2023) further finds that in African countries, new trade opportunities did not lead to better jobs or higher household income due to limited industry capacity. Whereas in China, labour was well absorbed in productive industries. For African agriculture and food systems, this suggests that liberalisation can create jobs in production and agro-processing only when there is support like training, infrastructure, and strong institutions. Otherwise, labour may remain in low-productivity small farms, which limits the ability of agriculture to boost economic growth and improve household income (Josephat, 2023).

However, the evidence from China-Africa shows unequal trade patterns. A few African countries mostly export to China, while many others experience trade deficits because of poor logistics, landlocked locations, and China's strict sanitary and phytosanitary standards (Plane, 2021; Ma et al., 2025).

The China-Africa trade partnership offers opportunities for growth in production, employment, household welfare, and agro-food chains. However, many African countries will still suffer if the challenges in industrial capacity, logistics, and weak investments are not addressed. Trade liberalization can support

food security and transform the agro-food systems when complemented with investments in infrastructure, technology, and human capital, as well as strong institutional frameworks. To continue the partnership between China and Africa, trade rules and agreements should work together to ensure that both parties benefit.

### **3. Research methodology and data**

To analyse the economy-wide effects of the various China-Africa trade liberalization scenarios, this study will employ the standard Global Trade Analysis Project (GTAP) framework. This is a specific Computable General Equilibrium (CGE) model, a consistent representation of the world economy for a pre-determined reference year. The GTAP model provides a combination of detailed bilateral trade information, trade protection data, and transportation information, which shows economic linkages between regions or within the region and/or country. The model also allows for the exploration trade liberalization scenarios including elimination of import duties and NTMs.

Specifically, this study uses the comparative static Standard GTAP model as described by Hertel and Tsigas (1997) and Corong et al. (2017). Notably, the standard GTAP model makes the assumptions of perfect competition and consistent returns to scale. Basically, CGE models are numerical models anchored on the economic theory of general equilibrium. Burfisher (2021) defines a CGE model as an economywide model in the sense that it describes the motivations and behaviours of both consumers and producers in an economy as well as interactions among them. In essence, the CGE model accounts for all interlinkages between all sectors in the economy (countries, households, firms, and governments) (UNCTAD., 2013; Burfisher., 2021). Specifically, Bessler et al. (2014) state that CGE models are a class of theoretically based models that can simulate the reaction of an economy to various changes in terms of prices, production, factor use, household income, and other factors.

For this study, the Standard GTAP model is calibrated with GTAP database version 11 (which has five reference years, i.e., 2004, 2007, 2011, 2014, and 2017), which also has the underlying data from supply and use tables for South Africa (Aguiar et al., 2023). Moreover, the database aggregates data from 141 countries and 65 sectors, including a single agricultural sector. The data in the GTAP database accurately depict the magnitudes of economic variables, but they are presented in terms of the aggregates that serve CGE modelling. In this study, the 141 regions are mapped to 7 regions, namely, the South Africa, China, eSwatini, African LDCs, rest of SACU, rest of Africa, and the rest of the world. In addition, the 65 sectors are aggregated into 13 sectors, these are: Fruits, vegetables and nuts, red meat, livestock, grains and crops, meat and livestock products, sugar, extraction, beverages and tobacco, processed food, textiles and clothing, manufacturing, transport and communication, and other services.

#### 4. Policy simulation scenarios

The study will simulate different policy scenarios to assess either unilateral or bilateral trade liberalization between China and the different African regional aggregations or individual countries. These will include the following:

- **Comparative policy scenario:** The economies without trade liberalization (with the existing import duties and NTMs).
- **Main policy scenario:** Full bilateral trade liberalization (100% zero-tariff treatment) across the 53 African countries
- **Alternative policy scenario 1:** Full bilateral trade liberalization between China and individual African countries depending on the architecture of existing African trade agreements.
- **Alternative policy scenario 2:** Partial trade liberalization (liberalization for only one industry (either agriculture and food industries or manufacturing and services industries) or the exclusion of sensitive described commodities.

#### 5. Expected results and potential policy implications

The results of this study expected to show that deeper China–Africa trade liberalisation will potentially generates positive but heterogeneous economywide effects for South African and other fellow African countries, with gains concentrated in selected agricultural and food subsectors where South Africa has latent comparative advantages (e.g. fruits, processed foods, and certain animal products), while more import-competing agro-processing and manufacturing industries may face increased competitive pressures. Under a full bilateral zero-tariff scenario, African countries are likely to experience modest aggregate welfare and GDP gains driven by improved export market access to China and lower input costs, although these benefits may be dampened if reciprocity constraints under SACU limit South Africa and fellow SACU member countries' ability to fully participate. Scenarios incorporating NTM reductions are expected to yield relatively larger trade and welfare effects than tariff elimination alone, underscoring the importance of regulatory cooperation and trade facilitation. Partial or sector-specific liberalisation is also likely to reveal trade-offs between protecting sensitive sectors and maximizing economywide efficiency gains.

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