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Research Report

Consumed in China: Rebalancing China's demand and Chinese imports

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2023 No. 5

Heli Simola

Consumed in China - Rebalancing
China's demand and Chinese imports



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Heli Simola

Consumed in China - Rebalancing China's demand and Chinese imports

Abstract

The share of private consumption has long been small in the Chinese GDP. The share started to increase in the past decade, but the trend reversed with the covid-19 pandemic. Now as the Chinese economy reopens and recovers from covid restrictions, the share of consumption could return to a growing trend. This resumption of a longer-term trend could have important implications for global trade. Our simulations, which are based on recent international input-output data, suggest that the current shift in China's demand structure is likely to increase import demand for sectors such as the food industry, agriculture, textiles, and travel services. Sectors facing a demand slowdown include base metals, non-metallic minerals, and machinery and equipment.

Keywords: China, imports, rebalancing, input-output

1. Introduction

Private consumption has traditionally made a relatively small contribution to Chinese GDP. It started to play a larger role in the past decade, only to shrink during the covid pandemic. With the Chinese economy reopening and recovering from covid restrictions, the role of private consumption is likely to increase again.

This return to the longer-term trend has important implications for China's growth and the sectoral structure of Chinese final demand. It also affects the outlook for Chinese imports. Rebalancing of Chinese demand has been studied extensively at the aggregate level (Dieppe et al., 2018; Furceri et al., 2017; Huidrom et al., 2019; Simola, 2019). The literature generally suggests that rebalancing demand from investment to consumption implies a slowdown in economic growth.

In this note, we consider the impact of a demand shift in Chinese imports at the sectoral level and its potential effects on global trade, utilizing data on the global production network structure contained in an international input-output table for 2021 compiled by the Asian Development Bank (ADB).

The note is structured as follows. Section 2 provides an overview of Chinese private consumption trends. In the following section, we analyze the effects of structural change in Chinese final demand during the past decade. Section 4 presents simulations that use international input-output tables to identify potential effects from a shift in China's demand structure on the global economy, particularly on the euro area. Section 5 concludes.

2. Private consumption's share of Chinese GDP set to increase

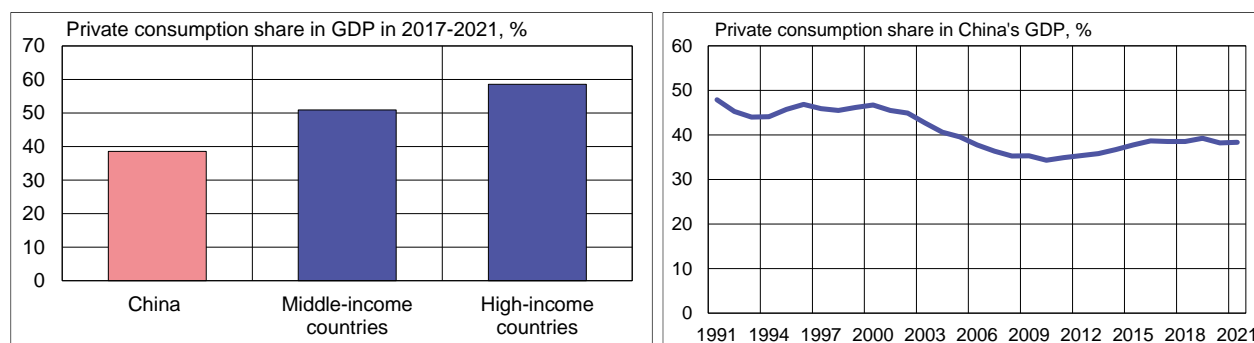
The contribution of private consumption to Chinese GDP has long been low by international standards. In 2017–2021, for example, China's share averaged 38 % compared to 51 % for middle-income economies and 59 % for high-income economies (Figure 1A). The low share reflects China's fixation with an investment-led growth model, a model increasingly seen as unsustainable by most observers. Indeed, Chinese officials themselves now call for a gradual shift away from the heavy focus on investment to a consumption-oriented economic model.

In the wake of the global financial crisis, to increase in private consumption share in China. Likely due to the covid-19 pandemic this trend stopped in recent years (Figure 1B). Consumption share could return to the previous upward trend, however, once the distortions related to the pandemic melt away.¹

While it is difficult to evaluate the pace of this change, historical estimates suggest that a shift of up to 1 percentage point per year is possible. In China, the share increased from 35 % in 2012 to 39 % in 2016. In Hong Kong, the share increased from 57 % in 2005 to 66 % in 2015. Thus, the share of private consumption in China could potentially reach the middle-income economy average in about a decade.

¹ In last autumn's BOFIT China Forecast (2022), we anticipated that the share of consumption should increase in coming years. This was before China abandoned its zero-covid policies. With the relaxation of covid policies, this shift could be even more rapid.

Figure 1. A) China's share of private consumption in GDP compared international averages, 2017–2021.
B) Change in China's private consumption to GDP over time.



Source: World Bank.

Notably, a shift in the structure of Chinese demand should also be reflected in Chinese imports. Consumer demand is typically more service-intensive and less import-intensive than investment demand.² This is the case also in China (Figure 2A). Tradable services,³ for example, accounted in 2021 for 43 % of Chinese consumer demand and 36 % of investment demand. In contrast, the share of manufacturing was much higher in Chinese investment demand. Chinese consumer demand is also less import-intensive than investment demand (Figure 2B). Domestic value-added represented 87 % of Chinese consumer demand in 2021 and 82 % of investment demand.

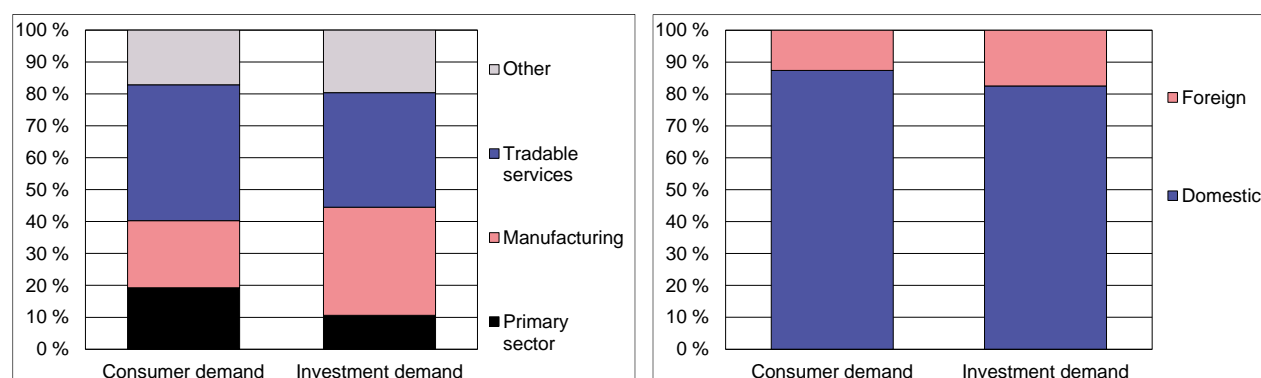
Thus, the shift from investment to consumption could not only lead to slower import growth in China,⁴ but a change in the structure of imports as well. A growing share of consumption, in turn, could also lead to an increase in the share of consumer goods and services in Chinese import demand. Correspondingly, the share of investment goods and raw materials needed in investment-intensive production could decline. In the following section, we evaluate these hypotheses based on recent historical data and simulations based on the latest available international input-output table.

² These features are partly interconnected as services are typically less trade-intensive than goods.

³ Tradable services refer to services other than public administration, education, healthcare, social work and other community services.

⁴ For illustrative purposes, we focus here only on the developments in Chinese final demand. Chinese exports are quite import-intensive, so the development of export production can have important implications for Chinese imports. The share of exports in China's GDP has declined in recent decades. By 2021, the share had fallen to 20 %, a level comparable to Japan. The ratio of exports to GDP is much higher for most European and Asian developed economies, while it is only 10 % for the US.

Figure 2. Chinese consumer and investment demand in 2021 A) by economic sector, and B) by geographical origin.

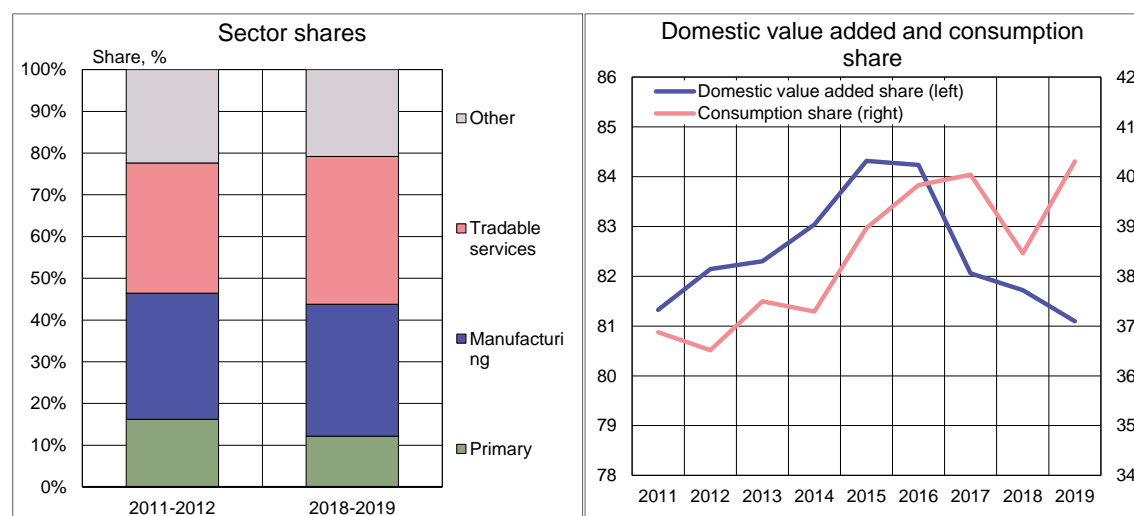


Sources: ADB MRIO, author's calculations.

3. China's demand structure shift in the 2010s

To evaluate the potential effects of the change in China's demand structure, we first consider recent history. The share of private consumption in China's GDP increased significantly from 2012 to 2016, then stabilized in the following years. This rise coincided with a substantial slowdown in the growth of global trade. Many studies provide evidence that this change in the structure of demand was an important factor in the slowdown (e.g. Aslam et al., 2018; Auboin & Borino, 2017; Simola, 2021). This shift from investment to consumption reduced import demand as consumption is less import-intensive than investment. As one of the world's largest economies, China made a significant contribution in this development (ECB, 2016; Timmer et al., 2021).

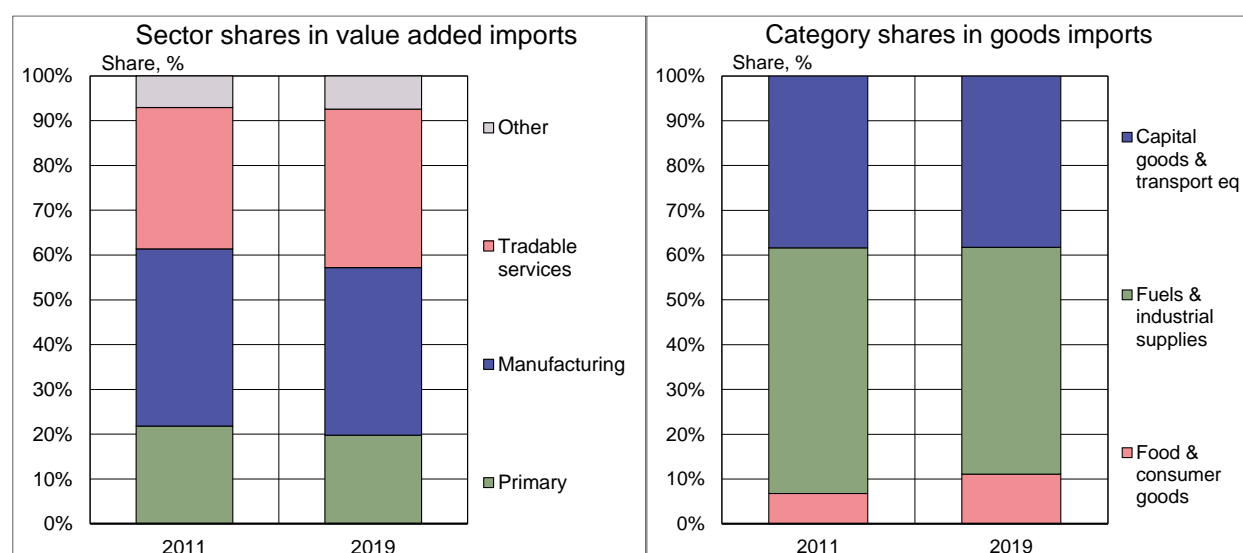
Although the trends are not completely clear-cut, the currently available data tends to support this hypothesis. The share of services in China's final demand increased from an average of 31 % in 2011–2012 to 35 % in 2018–2019 (Figure 3A). A corresponding decline was seen in the value-added share of the primary sector. With the exception of 2019, the share of domestic value added in China's final demand also tended to increase together with the consumption share in the past decade (Figure 3B).

Figure 3. A) Sector shares, and B) Consumption and domestic value-added share in China's final demand.

Note. All calculations concern value added in constant 2010 prices.

Sources: ADB MRIO, author's calculations.

The shift in China's demand structure in the past decade was also visible in the structure of Chinese imports. In sector terms, the biggest change was the increase in the nearly 4-percentage-point increase in 2011–2019, while the shares of primary sector and manufacturing declined in Chinese value added imports (Figure 4A). A similar shift is seen within Chinese goods imports (Figure 4B). The share of food and consumer goods increased by 4 percentage points, while the share of fuels and industrial supplies declined.⁵

Figure 4. A) Sector shares in Chinese value-added imports in 2011 and 2019. B) Category shares in Chinese goods imports in 2011 and 2019.

Sources: ADB MRIO, author's calculations, World Bank WITS.

⁵ As the data for goods trade are given in nominal USD, price changes could potentially affect the results. The Chinese import quantity index data suggests, however, that it is a minor issue.

4. Simulation with international input-output data

To illustrate the potential effects of a shift in Chinese demand structure, we conduct a simple simulation exercise based on international input-output data. To focus on structural change, we take as a starting point China's 2021 GDP and change its distribution across private consumption and capital formation, keeping all other components fixed. We increase the share of private consumption by 10 percentage points and lower the share of capital formation, keeping total GDP fixed.⁶ We then use this new Chinese final demand vector to calculate changes in output across economies and sectors relying on the ADB's international input-output table for 2021.⁷

4.1 Global implications

Our analysis suggests that a shift in China's demand structure produces notable demand increased for the food manufacturing, agriculture, textile industry and many services, including health care and travel services (Figure 5A).⁸ Therefore, particularly emerging Asian economies, like Cambodia and Vietnam exporting consumer goods to China are set to benefit the most in relative terms (Figure 5B). The value-added exports of Cambodia to China increases by more than 15 % and those of Vietnam by over 5 %. Brazil, a major food producer, also gains, but the benefits are offset by lower demand for industrial raw materials.

Indeed, in sector terms, the steepest declines accrue to the construction sector and industries producing raw materials (e.g. base metals) and investment goods (e.g. machinery). This hits major raw material producers such as Kazakhstan and Russia. Kazakhstan's value-added exports to China decline by nearly 10 % and those of Russia by 5 %. In addition, countries specialized in investment goods (e.g. Japan) stand to lose from China's shift to consumption.

The euro area as a whole and the US would see a more moderate decline in their value-added exports to China, with some sectors gaining and others losing. The US agricultural sector and food manufacturing are set to gain from the shift. The sectors facing largest declines of about 10 % in their value-added exports to China include machine-building and equipment manufacturing, as well as manufacturing of other non-metallic mineral products.

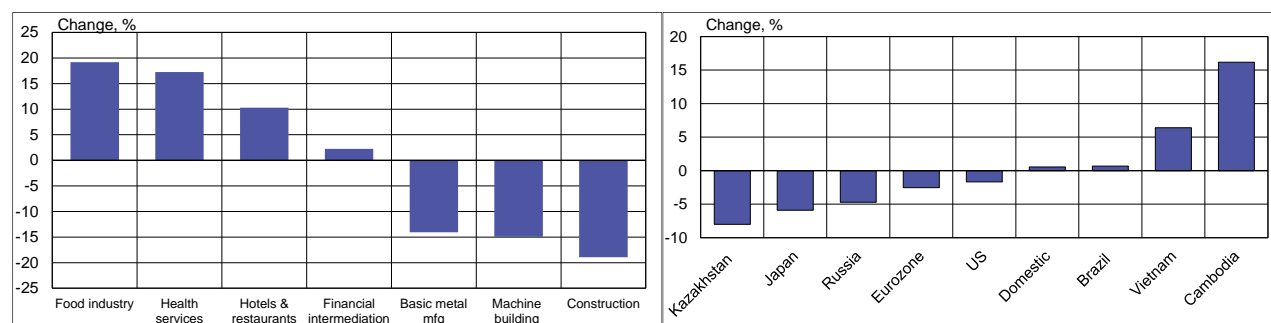
Chinese domestic output records a modest gain due to increased demand for consumer goods such as food and textiles, as well as almost all service sectors. On the other hand, the gains are eroded by a drop of around 20 % in construction sector value added. Commodity-based industries such as manufacturing of non-metallic minerals, base metals and wood processing also face contractions of roughly 15 %.

⁶ We abstract from growth considerations and keep the GDP fixed to illustrate the structural effects more clearly. In reality, we would expect GDP to rise at the shift to greater consumption proceeds. This growth, in turn, should mitigate some of the impact for countries and sectors that confront negative effects from this structural change.

⁷ A description of the data and methodology are provided in the Appendix.

⁸ The effect on travel services is likely to be stronger than these figures suggest as we are relying on 2021 data. At that time, Chinese travel was still heavily subject to covid restrictions.

Figure 5. Changes in Chinese value-added imports due to a 10 percentage point shift in China's final demand from investment to private consumption A) by sector and B) by selected countries.



Sources: ADB MRIO, author's calculations.

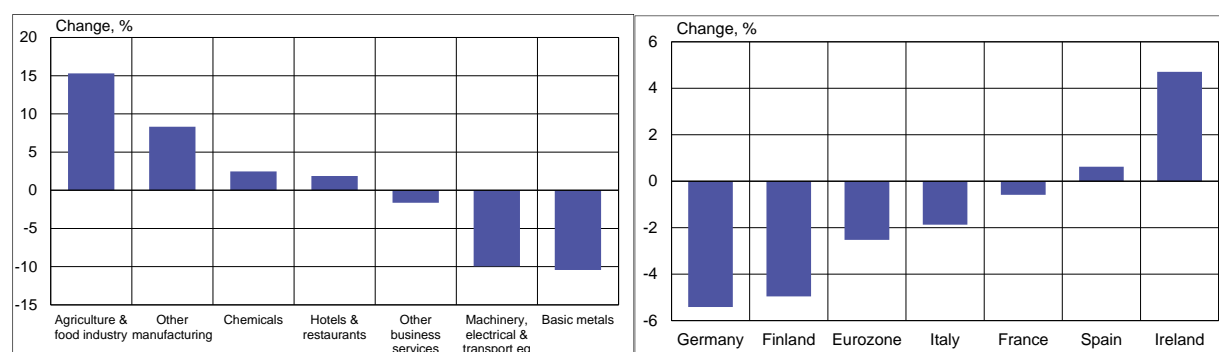
4.2 Implications for the euro area

Our simulations suggest that the shift in China's demand structure leads to decline of 2.5 % in total euro area value-added exports to China. Sectors gaining from the shift include agriculture and food manufacturing, as well as other manufacturing (Figure 6A). Euro area exports of base metals and machinery and equipment face a contraction of 10 % in their value-added exports to China.

In country terms, the euro-area economies hit most severely by the shift in China's demand structure likely include Germany and Finland (Figure 6B). This is mainly due to the concentration of their exports on machinery, equipment and base metals. On the service side, business services account for the majority of service exports. The demand for these services is also set to decline, but more moderately than for industrial and investment goods.

Italian value-added exports to China could also suffer from the reduced demand for basic metals and machinery. On the other hand, Italy and France would gain from the increased demand for food products, textiles and leather products as well as consumer chemicals. In addition, other manufacturing in France is among the biggest winners. The exports of Ireland and Spain to China could increase, buoyed by demand for food products, other manufacturing, and travel-related services.

Figure 6. Change in the value-added exports to China caused by the shift in China's demand structure in selected eurozone A) industries and B) countries.



Sources: ADB MRIO, author's calculations.

The change in China's demand from investment to consumption also affects Eurozone economies via changes in commodity prices. China is a major global buyer of key commodities. A gradual weakening in Chinese investment demand leads to lower commodity prices in global markets and Eurozone imports. Notably, this could have a mild positive effect for the Eurozone economy. This issue cannot be addressed in our simulation framework, but earlier literature suggests that the effect would be limited (Dieppe et al., 2018).

5. Concluding remarks

China's low share of private consumption to GDP reflects its investment-led growth model. In the past decade, however, the situation began to normalize with the share of private consumption increasing. The covid-19 pandemic and China's virus-suppression strategy ended this trend for several years. With China now reopening its economy, we expect the share of consumption to return to the long-term normalization trend. Chinese officials themselves have stated that the rebalancing growth from investment to consumption is a policy target for the years ahead.

Such a structural change is expected to proceed gradually, likely not exceeding more than one percentage point a year. Nevertheless, such a shift has important implications for sectoral and geographical structure of global trade over the medium and long term as China is one of the largest economies in the world. Our simulations suggest that the shift in China's demand structure could increase import demand for such sectors as agriculture, food and textile manufacturing and travel services. Sectors facing decline in demand include base metals, non-metallic minerals, as well as machinery and equipment.

China is also an important trading partner for the Eurozone. Eurozone exports to China currently focus on goods and services linked to investment demand. As a result, Eurozone aggregate value-added exports to China could decline with the rebalancing of China's demand structure. The effects are quite heterogeneous across countries and sectors, however. Manufacturing of food products and the sector of other manufacturing in many Eurozone countries are likely to benefit, while industries such as machinery and equipment manufacturing face the risk of a contraction in value-added exports to China.

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Appendix A. Description of data and methodology

The simulations here are based on the international input-output table for 2021 compiled by the Asian Development Bank (ADB). The data are in current USD. We use the version that covers 62 economies and a Rest-of-the-World block. All major developed and emerging economies are included. The data are further distributed to 35 economic sectors.

The simulations are conducted with basic input-output analysis presented e.g. in Timmer et al. (2015). We denote the output vector of countries and industries by X , the coefficient matrix of intermediate inputs by A and the final demand vector by C . Output can be expressed as

$$X = (I - A)^{-1}C, \quad (1)$$

where I is the identity matrix and $(I - A)^{-1}$ the so called Leontief inverse.

We next multiply the output matrix X by a diagonal matrix V that contains the ratios of value added to gross output of all countries and industries in its diagonal. Thus, we calculate value-added production K to supply final demand C as

$$K = V(I - A)^{-1}C. \quad (2)$$

We modify the Chinese final demand components by increasing the share of private consumption by 10 percentage points and correspondingly reducing the share of gross fixed capital formation. We keep other demand components and the total GDP fixed to highlight the effect of structural change in demand. We substitute this modified demand vector for China in (2) and calculate the resulting changes in value added across countries and sectors.

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