

# A Review of the Impact of RMB Exchange Rate Changes on Consumption Structure

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**Abstract:** Optimizing the consumption structure is beneficial to economic growth, specifically, the appreciation of RMB on consumption is beneficial to the transformation and upgrading of the consumption structure. In light of this, the literature research approach is used in this work to examine the literature on the influence of exchange rate changes on consumption structure at home and abroad. It has been shown that the majority of international studies focus on explaining the "Backus-Smith puzzle." Domestic studies, in addition to foreign studies, examine the mechanism of the influence of exchange rate changes on consumption structure. The current research is rich, but domestic scholars cannot reach a consistent conclusion due to the different sample selection and research methods. Afterwards, scholars can search for the reasons and improve the research methods.

**Keywords:** Consumption structure, Exchange rate change, Mechanism of action.

## 1. Introduction

In July 2005, China initiated a new wave of exchange rate system reform in which the RMB exchange rate was no longer tied to the US dollar but instead referred to a basket of currencies and was modified via a floating exchange rate system. Since then, the RMB has also changed from a significant depreciation to an appreciation that has lasted for a long time. Certainly, the change of RMB exchange rate will have an impact on China's consumption structure, and clarifying the relationship between the two will help optimize the consumption structure and sustain the economic growth of China. In view of this, this paper will sort out the domestic and foreign research results about the impact of exchange rate changes on consumption structure, in order to provide reference and reference for the future research work on the specific path to realize the expansion of domestic demand.

## 2. Review of Foreign Literature

The traditional belief is that there is a positive relationship between the real exchange rate and consumption, despite the fact that theoretical and empirical investigations on the topic have not consistently reached a result. Backus and Smith were pioneers in studying the link between consumption and the real exchange rate, and they theoretically argued that consumption is positively related to the real exchange rate under the conditions of complete financial markets. However, the empirical study found that quarterly data for eight OECD nations from 1971 to 1990 did not show a significant relationship between consumption and the real exchange rate. This finding is known as the "Backus-Smith puzzle" [1]. This phenomenon has subsequently been studied in depth by scholars. Corsetti, Dedola, and Leduc found that data for OECD countries from 1973 to 2001 showed a very small or negative correlation coefficient between the real exchange rate and consumption, with median values between -0.3 and -0.2 [2]. The cross-country empirical study by Bahmani-Oskooee and Hajilee also provided direct evidence that a lower exchange rate depresses residential consumption [3].

Other scholars have questioned the traditional complete financial market hypothesis and introduced the incomplete financial market hypothesis. Most scholars have empirically tested the paradox and found that it still holds. Selaive and Tuesta theoretically explained the zero or negative correlation between the real exchange rate and relative consumption based on the incomplete market hypothesis [4]. Corsetti, Dedola, and Leduc suggested that higher productivity, improved terms of trade, and exchange rate appreciation will raise domestic consumption in comparison to other nations. [2]. The Backus-Smith puzzle has been studied empirically, for example, Kollmann [5] and Ravn [6] discovered that the real exchange rate has a very limited effect on consumption. Hess and Shin [7] and Hadzi-Vaskov [8] found that relative consumption growth is positively associated with real exchange rate movements after eliminating nominal exchange rate fluctuations, using quarterly panel data for 12 euro area countries from 1999-2006. However, Shiu-Sheng Chen rejected the "Backus-Smith puzzle". He argued that the instrumental variables used in previous studies to deal with the endogeneity of the explanatory variables in the regressions are invalid, and that improving the instrumental variables yields a positive association between exchange rates and relative consumption [9].

## 3. Review of Domestic Related Literature

Since the beginning of the RMB exchange rate reform regime in 2005, a growing number of scholars have studied the relationship between the real exchange rate and consumption. Some scholars have also focused on the "Backus-Smith puzzle". Fu Zhangyan empirically examined the effect of real exchange rate on consumption by building a panel data model with 22 countries or regions and finds that the Backus-Smith puzzle also exists in most developing countries [10]. Chen Ke, and Lu Jian [11], Zhou Yajun [12] all found that the Chinese economy fits the characteristics of the Backus-Smith puzzle through empirical tests. Duan Junshan and Mao Zhonggen constructed a binary choice

model and discovered that exchange rate fluctuations have a growing impact on consumption, and that changes in residents' consumption also affected the real exchange rate [13].

Some scholars believe that the increase in consumption is conducive to the bettering of the consumption structure. Yuan, Xia Linfeng, and Fan Xiaoya found through empirical analysis that the growth in consumption expenditure contributes significantly to the upgrading of consumption structure, and the change in the relative prices of various goods and services also has an important impact on the consumption structure of the population [14]. Most of the remaining scholars in China study the important intermediate transmission medium or mechanism through which the RMB exchange rate affects consumption. Some other academics argue that changes in the RMB exchange rate will affect China's consumption structure through the following three channels.

### 3.1. Wealth effect

The wealth effect refers to changes in the price of financial assets that affect the wealth of the population and thus promote or inhibit the growth of consumption.

Gu Zijing argued that the exchange rate upward will increase asset prices, leading to an increase in residents' total wealth, and encourages more consumption while optimizing the consumption structure [15].

However, some scholars have put forward a different view. Gu Ning and Zhu Jiaqi found that the wealth effect has the largest contribution to the information entropy of residents' consumption structure through a vector autoregressive model, and RMB appreciation will bring about a deterioration of the overall consumption structure [16]. Fan Xia showed through PVAR model analysis that the rapid growth of per capita wealth due to RMB exchange rate appreciation is detrimental to the optimization of consumption structure [17].

### 3.2. Price effect

The price effect is that a change in price leads to a change in purchasing power.

Gu Zijing theoretically analyzed that exchange rate changes affect the purchasing power and consumption expenditure of residents by affecting the prices of imported goods and thus. Due to the appreciation of the local currency, the relative decrease in the prices of imported goods makes the purchasing power of the residents rise, which promotes consumption and optimizes the consumption structure [15]. Fan Xia used Granger causality test to find that the price channel is significantly present ( $p$ -value for price transmission channel is 0.001) and the appreciation of RMB exchange rate promotes consumption, the consumer price index decreases, and the impact on consumption structure is positive [17].

However, Gu Ning and Zhu Jiaqi came to the conclusion by charting the consumer price reaction that the appreciation of the local currency leads the consumer price index to briefly decline before weakening and eventually changing into a positive effect. However, based on actual facts under different circumstances, an increase in price level will restrict residents' purchasing power to some extent, lower their consumption spending, and degrade the consumption structure [16].

### 3.3. Income effect

The income effect is the change in consumption of a good

brought on by a change in the real income of the consumer, holding constant the nominal price and nominal income of all other goods.

Gu Ning and Zhu Jiaqi concluded by plotting the per capita and disposable income response that RMB appreciation increases the income of China's residents, and the impact effect starts to diminish year by year after the second year. However, whether the consumption structure can be optimized depends on the growth rate of per capita income and consumer price level of residents [16]. Gu Zijing analyzed from the aspect of monetary wage mechanism, RMB appreciation will make real wages rise. Consumers' purchasing power increases and will tend to buy imported goods with lower prices relative to domestic goods, and the quality of consumption is improved [16]. Fan Xia designed a PVAR model whose parametric results indicated that RMB appreciation raises disposable income per capita, which is consistent with the theoretical analysis that RMB appreciation positively affects consumption structure [17].

A small number of scholars hold a different view. Li Ying and Gao Jiangang studied that income distribution was a crucial intermediary mechanism via which exchange rate fluctuations affected locals' consumption. They did this by creating a Neo-Kaleckian model of economic growth and the determination of income distribution. Further they concluded that RMB appreciation can promote consumption but is not conducive to the upgrading of consumption structure through Sobel mediating effect test [18].

Some other scholars have conducted studies from the perspective of marketable and non-tradable products. Chen Min and Chen Bin argued that domestic currency appreciation raises the price of domestically produced traded goods relative to imported commodities, increasing domestic demand for imported goods [19]. Wang Qian, Huang Rui, and Feng Xiaochu constructed a mathematical model of exchange rate influence on consumption structure based on the "Balassa-Samuelson" effect, and conducted an empirical test to find that the consumption of tradable products rises as the RMB exchange rate rises, while the consumption of non-tradable goods declines.

## 4. Conclusions

The foreign studies examine the relationship between the real exchange rate and relative consumption growth, as well as the causes of inconsistencies between theoretical and empirical test results. It is useful to further study the connection between the real exchange rate and consumption structure.

A part of the domestic research has concentrated on the existence of the "Backus-Smith puzzle" in China. However, most of the scholars mainly study the transmission mechanism of the influence of exchange rate fluctuations on consumption structure, and they have all explored the effects of wealth effect, price effect and income effect, and the research findings all prove to some extent that exchange rate changes will have an impact on China's consumption structure, but due to the different research methods, the direction of the impact has not been able to get consistent conclusions. The subsequent studies can further analyze the reasons for the inconsistent findings, so that the research methods and data selection can be improved at this stage.

A few academics have also performed research on both tradeable and non-tradeable products, confirming that exchange rate appreciation has an impact on their

consumption, but not further exploring whether it has an impact on the consumption structure.

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