

### Asymmetries in the Response of Household Consumption to the Business Cycle

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#### Abstract

The asymmetric movement of economic variables over the phases of business cycles has attracted interest among economists and policymakers. Some economic variables are believed to move asymmetrically during good and bad phases of the business cycle, moving quickly and sharply during a recession and slowly and gradually during a recovery. For example, loan rates may climb quickly in economic downturns but decline slowly during recoveries. Investment experiences an abrupt decline during recessions but recovers sluggishly. The asymmetric movement of economic variables in response to economic activities has two implications. First, it raises concerns regarding the use of economic models that neglect non-linearity and asymmetric disturbances. Second, when taking the asymmetric effect into account, the timing and magnitude of policy reforms should be reexamined.

Household consumption also usually fluctuates with the business cycle, and the pro-cyclicality of household consumption with a nation's economic performance has been well recognized and discussed in the literature. In good times, households are more likely to earn more income; thus the private consumption accordingly increases. In bad times, peoples might lose jobs and lack incentives to spend, depressing the total consumption as a result.

Previous studies have sought to understand the cyclical nature of household behaviors, such as saving, consumption, fertility and so on. However, only a few empirical studies have analyzed the links between the responses of household behaviors and the state of the economy. Shea (1995) finds that private consumption responds more strongly to predictable income declines than to predictable income increases. He further argues that consumption exhibits asymmetric behavior due to loss aversion in intertemporal preferences. In other words, individuals suffer more when forced to reduce consumption standards due to diminishing marginal utility of wealth. On the other hand, Jappelli and Pistaferri (2000) use subjective quantitative income expectations available for a sample of Italian households as an instrument for income growth; however, they do not find evidence for excess sensitivity to both income increases and declines. Kuo and Chung (2002) show that asymmetric sensitivity of consumption to the phases of the business cycle generates asymmetric patterns. They also conclude that the consumption of liquidity-constrained consumers closely relates to the business cycles. Carruth and Dickerson (2003) assess the likelihood that aggregate consumers behave differently under various disequilibrium asymmetric shocks, and their empirical findings provide strong evidence for this possibility. Apergis and Miller (2006) investigate whether stock market wealth affects real consumption asymmetrically through a cointegration and error correction methodology. Their results confirm that stock-market value asymmetrically affects real per capita consumption; and the negative news affects consumption more than positive news. Tagkalakis (2008) uses a yearly panel of nineteen OECD countries from 1970–2002 to investigate the effects of fiscal policy changes on private consumption in recessions and expansions. He concludes that in the presence of binding liquidity constraints on households, fiscal policy is more effective in boosting private consumption in recessions than in expansions. The effect is more pronounced in countries characterized by a less developed consumer credit market. This happens because the fraction of individuals that face binding liquidity constraints in a recession will consume the extra income generated following an unanticipated tax cut or government spending increase.

The main objective of this study is to examine whether and to which extent the behavior of

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household consumption is asymmetrically sensitive to economic upturns and downturns. We apply the threshold model and momentum threshold model along with error correction to characterize the different definitions of a business cycle. For the auxiliary regressors in each model, we also consider two types of data transformations, which are first-differenced and deviation cycle for comparison. In addition, we utilize the HAC standard error test and the HAC-based wild bootstrap test to investigate whether household consumption show asymmetric behavior. Our empirical data are drawn from the 1979-2014 Survey of Family Income and Expenditure in Taiwan.

According to our preliminary results, we demonstrate that household consumption has the procyclical feature during the business cycle in Taiwan. Second and more importantly, the household consumption responds asymmetrically to economic fluctuations such that changes in consumption of a household tend to be larger in expansions than in downturns; moreover, this asymmetry feature is different across different household income quantiles. The contributions of this study are as follows. First, this paper extends a growing and important body of literature on household consumption volatility. We not only consider the cyclicity of household consumption but also demonstrate the upside and downside risk involved with household consumption. Second, we characterize the periods of good and bad times in the business cycle using two different definitions. The first measure is based on the conventional cyclical component of the GDP, which focuses on whether the growth rate of the GDP is positive or negative. The second measure is based on a second-order difference concept that focuses on whether the GDP is acceleratingly or deceleratingly rising and falling. The latter concept has important policy implications for countries such as China, which has been enjoying long-term economic growth but is now facing a “New Normal” stage. Moreover, this study not only uses the traditional asymptotic tests but also conducts an HAC-based wild bootstrap test to investigate the existence of asymmetric behaviors during the business cycle.

In conclusion, the impact of the business cycle on household consumption is nonlinear. This asymmetry has some implications. First, since the responses of private consumption are asymmetric over different phases of the business cycle, some theoretical economic models and empirical econometric models need re-consideration. For example, models with non-linear and asymmetric disturbances may be more appropriate. Second, considering the asymmetric behavioral responses, the government should design different policies to stimulate household consumption for economic boom and recession; in addition, given that the asymmetric behavioral responses exist in the households across different income quantiles, the policies should also be designed accordingly.

Keywords: Cyclicity, Asymmetry, Business cycle, Household consumption

JEL classifications: D12, E21, E32,

**Impacts of Farmer Professional Cooperatives on Household Income in Rural China**

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**Abstract**

Since China joined the World Trade Organization (WTO) in 2001, Chinese farmers have been facing much more competitive pressures in domestic and international markets and their income has grown slowly. In order to improve farmers' market competition environment and increase farmers' income, the state actively implemented various agricultural policies and supported farmers to develop professional cooperatives, as a result, farmer professional cooperatives are developing rapidly in China. This paper mainly studies the impacts of farmer professional cooperatives on household income in rural China.

Firstly, this paper analyzes the influence paths through which farmer professional cooperatives may affect farmer household income. Farmers can increase agricultural income and non-agricultural income through participating in professional cooperatives. Farmers' agricultural income is based on the use of land, labor and capital for agricultural production. Farmer professional cooperatives can increase farmers' income by increasing agricultural output, increasing sales quantity and price, reducing costs and realizing surplus distribution. The farmers liberated from the agricultural land can engage in other industries to obtain non-agricultural income.

Secondly, this paper constructs a regression model to present further empirical test by using China Household Income Projects (CHIP) 2013 survey data. Since the income in 2013 may have an impact on whether farmers will join the cooperatives in 2013 and 2014, in order to eliminate the endogenous bias caused by this relationship, this paper excludes the data of farmers joining cooperatives in 2013 and 2014. After considering the endogenous problem that the main explanatory variable and the explained variable may be causality, total OLS regression and quantile OLS regression are carried out, respectively. The regression results show that: joining farmer professional cooperatives induces a significantly positive impact on farmer household income, particularly this effect of increasing income is significant for low-income farmer household, and the impacts of land and agricultural fixed assets on farmer household income are significantly positive as well.

Finally, this paper puts forward some policy suggestions as follows: It is necessary to intensify the positive influence of professional cooperatives on farmers' income. It will not only raise the level of farmers' income and stabilize the basic management system in rural areas, but also promote rural economic development, narrow the gap between urban and rural areas and realize the rejuvenation of the countryside, to speed up the development of farmer professional cooperatives and actively guiding farmers to join. However, it is worth noting that with the rapid increase in the number of farmer professional cooperatives in recent years, some non-standard farmer professional cooperatives have also appeared. At the same time, the relevant subsidy policies of the government have also induced some enterprises to pretend to be farmer professional cooperatives, which will weaken the functions of real farmer professional cooperatives. Therefore, the relevant government departments should introduce strict regulations to support the development of farmer professional cooperatives, and improve the management system of farmer professional cooperatives.

**Keywords:** Farmer household income; Farmer professional cooperatives; Quantile regression

**JEL Classification:** Q12;Q13;H31

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**Infrastructure, Urbanization, and Demand for Bank and Non-Bank Loans of Chinese Households****Angela C. Lyons, University of Illinois at Urbana-Champaign<sup>1</sup>****John E. Grable, University of Georgia<sup>2</sup>****Ting Zeng, Southwestern University of Finance and Economics<sup>3</sup>****Abstract**

Financial inclusion plays an important role in giving households greater access to borrowing opportunities, which in turn can be used to improve human capital accumulation, socioeconomic status, and long-run economic development. One way to enhance households' access to and usage of the financial system, especially the formal banking system, is to ensure that an adequate infrastructure exists within their community. This study uses data from the *2013 Chinese Household Finance Survey* to investigate how the infrastructure affects the usage of formal bank loans for both urban and rural households in the People's Republic of China (PRC). The analysis is extended to investigate the impacts of the infrastructure on non-bank loans. The results suggest that the infrastructure, in a variety of forms (e.g., physical, financial, technological, social, and informational), is significantly associated with the loan demand—most notably for urban households using formal bank loans. Further, those living in more urbanized areas and megacities are less likely to demand bank and non-bank loans even after controlling for other factors, suggesting that there may be an “urbanization effect” that is dampening credit access and usage. The potential endogeneity between the infrastructure and the loan demand is taken into consideration. The results show that decisions related to the loan demand and infrastructure mostly appear to be made independently. The findings from this research have important implications for the PRC and other countries working on national strategies aimed at improving financial inclusion, especially the expansion of bank credit in rapidly growing urbanized areas, where the infrastructure may be reaching capacity.

*JEL Classification: D1, G2, O1, I3, J1*

*Keywords: infrastructure, urbanization, banking, financial inclusion, credit, microfinance, China*

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**Portfolio choice in China: Age, expectations and happiness**

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Keywords: Portfolio choice, Demographics, Happiness JEL: E21, R31, O53

**Abstract**

This paper analyses portfolio choice in China, focusing on the determinants of the proportion of risk-free assets held by households in China. The behaviour of people is consistent with a life-cycle model, where they build up their stock of risky assets until retirement. Happiness, along with a measure of perceived risk aversion, is found to have a positive influence on the share of money in a portfolio. Similar to the findings in advanced countries, entrepreneurship leads to a greater holding of cash.