

The Impact of Consumer Credit on Economic Growth

Taking Tongren City of Guizhou Province as an Example

Hong Peng

Zhongnan University of Economics and Law
Wuhan, China
Tongren University
Tongren, China

Abstract—Consumer credit, as a new mode of consumption in recent years, has a profound impact on people's life and economic growth. There is a large gap in the development of consumer credit, especially in less developed areas, consumption credit is more prominent. Taking Tongren city of Guizhou Province as the research object, this paper selects the data of personal consumption credit balance and GDP data in the first quarter of 2011 to the fourth quarter of 2017, verifies the influence of consumer credit on economic growth and concludes that the balance of consumer credit and economic growth in Tongren has a long term equilibrium, but there is a large degree of structural imbalance among different kinds.

Keywords—personal consumption credit balance; economic growth; long-term equilibrium

I. INTRODUCTION

Since the reform and opening, the income and consumption level of Chinese residents have been continuously improving, but the imbalance between the two also makes the various needs of consumers unable to be met in time. Loan consumption has gradually been accepted by people, which is called consumer credit. The role of consumer credit can largely alleviate the contradiction between the insufficient purchasing power and consumer demand.

In recent years, with the change of the overall economic trend in China, the economy progressed rapidly in Guizhou Province, in 2011, its GDP reached 570.184 billion Yuan, and in 2016 it reached 117.3443 billion Yuan. By the end of 2016, the total retail sales of social consumption in Guizhou had reached 370.899 billion Yuan from 175.162 billion Yuan in 2011, and the loan balance had reached 1785.78 billion Yuan. Consumer credit has been developing rapidly, but there still have too large disparity from the advanced areas. Tongren City is one of the six cities in Guizhou Province. Its economic development is relatively poor. At the end of 2016, its GDP is 85.697 billion Yuan, accounting for only 7.3% of the total GDP of Guizhou Province. The balance of loans is 81.765 billion Yuan, accounting for only 4.6% of the total loans of Guizhou Province. In view of this, how about the relationship between the economic development and the existence of consumer credit in Tongren and how to promote Tongren's economic growth? These questions are worth discussing. Based on this, this paper tries to find out the

countermeasures to promote the coordinated development of consumption credit and economic growth in Tongren.

II. A REVIEW OF RESEARCH

The research on consumer credit started for long, but scholars at different times also hold different views on the perspective and methods, and the results are different.

A. *The Direct-effect of Consumer Credit on Economic Growth*

Thomas (2010) found that consumer credit can save transaction costs and reduce the liquidity constraints of capital, directly driving economic growth. Philip A. Klein (1976) used the data of consumer credit in the United States from 1920 to 1976 as independent variables and GDP as dependent variables. It was concluded that consumer credit balance and economic growth have a strong cyclical. Pereira (2003) believes that corporate credit can promote economic growth more than personal consumption credit.

More and more researchers pay attention to this topic, and most of them find that there is a direct pulling effect of consumption credit on economic growth, which mostly used the data of consumption credit balance, disposable income and GDP in VAR model (Wang Jin, 2007; Sang Tingting, 2012).

B. *Indirect-effect of Consumption Credit on Economic Growth*

Some study analyzed the positive relationship between consumer credit and consumer demand. Consumer demand will increase with the increase of consumer credit, and then promote economic development (Zeldes, 1989; Ludvigson, 1999; Ryan, 2010). Maki (2000) found a positive correlation between consumption credit and residents' consumption demand in the future.

Some domestic scholars' empirical studies have found that consumer credit can not directly stimulate consumer demand, but expand demand by increasing residents' income, thereby enhancing economic growth (Li Lili, Wang Tokyo, 2004; Zhao Ailing, 2000). And other scholars think there were strong relationship between the structure of consumer credit and economic growth (Zhou Hong, Liu Yi, 2008; Cai

Guo, 2015). And other study found that the effect of consumer credit on economic growth is greater in the long-run than in the shortterm (Yang Kaihua, 2012; Qiao Bin, 2017).

C. Research on Consumer Credit and Economic Growth from the Perspective of Credit Risk

Fabio Wendling Muniz de Andrade and Lyn Thomos (2007) applied the content of the Basel Accord to measure the retail credit risk and the impact of credit risk on economic growth, and finally looked forward to the future development trend of consumer credit.

It can be seen that foreign scholars often study consumer credit from the national perspective, and the relevant literature is relatively long before. Domestic scholars focus on the analysis of the development of consumer credit and economic growth, and there are few theoretical studies on them. We believe that consumer credit has regional characteristics, and there are few researches on a specific area. In this paper, Tongren City is taken as the research object to explore the relationship between consumer credit and economic growth, trying to provide ideas for regional economic development.

III. THE IMPACT MECHANISM OF CONSUMER CREDIT ON ECONOMIC GROWTH

Consumer credit means to satisfy people's current consumption demand through credit loan. According to Keynes's economic theory, consumption is one of the driving forces of economic growth. This paper expounds the mechanism between the two from two aspects, direct and indirect.

A. The Direct Effect of Consumer Credit on Economic Growth

The increase in consumption credit can be seen as an increase in consumption demand. According to the expenditure act $Y=C+I+G+(X-M)$, consumption, investment, government expenditure and net exports all play a positive role in GDP. However, investment, government purchases and net exports increase slowly due to policy constraints, while consumption can increase with the improvement of national living standards, which is an important force determining the stable development of the national economy.

B. Indirect Effect of Consumer Credit on Economic Growth

The indirect effect of consumer credit on economic growth is mainly manifested in two aspects: one is that the development of consumer credit will make the consumer demand that the residents have not realized for the time being become actual demand, improve the consumption ability, upgrade the quality of consumer goods, and rationalize the consumption structure. At the same time, in order to meet the increasing consumption demand, enterprises and society will speed up the production speed and expand the scale of production to adapt to it and stimulate economic growth; second, consumer credit has a multiplier effect on consumption demand, indirectly

promoting economic growth. According to Keynesian consumption theory, the marginal propensity of low-income people is high, while that of high-income people is low. The formation of consumer credit can enable low-income people to obtain additional consumption capacity and improve the overall level of consumption.

IV. THE CURRENT SITUATION OF CONSUMER CREDIT AND ECONOMIC DEVELOPMENT IN TONGREN

A. Development of Consumer Credit in Tongren

From the overall situation of consumer credit, the scale of consumer credit in Tongren City has been expanding year by year, and the proportion of total loans has been rising. As can be seen from "Table I", the consumption balance of Tongren City ranged from 17.454 billion Yuan in 2011 to 70.577 billion Yuan in 2017, with an increase of about four times. In 2011, consumer credit accounted for 58.07% of the loan balance of financial institutions. By the end of 2017, the proportion had reached 78.63%. From this, we can see that the development of consumer credit in Tongren City is rapid and the future development prospects are very optimistic.

TABLE I. THE SCALE OF CONSUMER CREDIT IN TONGREN

Year	Total	Institutions	Ratio (%)
2011	174.54	300.52	58.07%
2012	245.42	381.38	64.35%
2013	315.69	472.99	66.74%
2014	424.13	601.65	70.49%
2015	526.21	716.77	73.41%
2016	639.55	817.65	78.21%
2017	700.57	890.98	78.63%

^a. Data source: Tongren Municipal People's Bank Central sub branch and Tongren yearly statistical bulletin

^b. Total-Consumer Credit Balance, Institutions- Loan balances of financial institutions, Ratio- The Ratio of Consumer Credit to the Total Amount of Financial Loans

^c Unit: 100 million Yuan

From the perspective of consumption credit structure, the consumption credit varieties in Tongren are increasing. With the steady development of Tongren's economy and finance, the types of consumer credit products are gradually enriched, but there is a serious imbalance between different types of credit products. Because the short-term consumer credit data is not easy to obtain, so the following analysis of Tongren's medium and long-term consumer credit products.

Tongren City has gradually enriched the types of consumer credit to meet the various needs of consumers, but the problem has also become prominent. From 2011 to 2017, apart from the slowdown of student loans, personal automobile loans, housing loans and other loans in Tongren City showed an upward trend year by year as shown in "Table II". However, the structure of consumer credit is seriously unbalanced, housing loans and other loans account for a large proportion, while student loans and automobile loans account for a small proportion, and student loans are close to zero, which is not conducive to the stable development of the consumer credit market in Tongren City.

TABLE II. QUANTITY AND PROPORTION OF CONSUMER CREDIT

Year	Housing loan		Auto loans	
	Total	(%)	Total	(%)
2011	105.12	60.23	0.1834	0.11
2012	139.16	56.70	0.1419	0.06
2013	173.98	55.11	1.0039	0.32
2014	234.10	55.20	1.7806	0.42
2015	304.82	50.62	1.7633	0.29
2016	402.51	65.13	3.1682	0.51
2017	446.62	63.75	4.5420	0.65

Year	Student loans		Other loans	
	Total	(%)	Total	(%)
2011	0.1916	0.11	69.04	39.56
2012	0.1074	0.04	106.01	43.20
2013	0.0361	0.01	140.68	44.56
2014	0.0166	0.00	188.24	44.38
2015	0.0079	0.00	219.62	36.47
2016	0.0052	0.00	233.87	37.85
2017	0.0030	0.00	249.40	36.60

a. Unit: 100 million Yuan

b. Data source: Tongren people's Bank of China sub branch. The data retain two places after the decimal point.

The development of consumer credit in Tongren has large space and great potential. First of all, the income level of residents has gradually increased, creating conditions for the development of consumer credit. The per capita disposable income of urban and rural residents in Tongren City is increasing year by year. By the end of 2017, the per capita income of urban residents was 26,944 Yuan, and that of rural residents was 8401 Yuan. Secondly, the consumption credit balance accounts for a relatively low proportion of GDP, which has great room for development. The proportion of consumer credit in Tongren accounts for GDP, rising from 48.8% in 2011 to 72.2% in 2017. However, from the perspective of the whole province, it accounted for only 5.9% of Guizhou's GDP in 2017, the overall level is low, and there is great room for growth. Finally, the rise of other financial loan companies has increased the pace of consumer credit development. Consumer credit in Tongren City started relatively late, and its development is not mature. There are also some restrictions on the types, structure and investment of credit products. But with the rise of some financial loan companies, which promote the growth of consumer credit.

B. Tongren's Economic Development

Tongren's GDP showed a steady upward trend. In 2011, Tongren's GDP was 35.572 billion Yuan and by the end of 2017, its total value reached 96.986 billion Yuan, close to the 100 billion mark. The GDP growth rate reached a peak of 42.11% in 2013, while it declined in 2014, with a growth

rate of only 1.97%. However, the overall growth rate is still in a state of growth.

V. THE EMPIRICAL ANALYSIS OF CONSUMER CREDIT AND ECONOMIC GROWTH IN TONGREN

A. Model and Data Processing

In view of previous research conclusions, it is found that most of them use the balance of consumer credit as the index of consumer credit. According to the development of Tongren's credit, this paper chooses housing loan (HL), automobile loan (CL), student loan (SL), and other loans (EL) as the index of consumer credit, and uses GDP as an indicator of economic growth. The econometric model is as follows:

$$\text{LNGDP} = C + \alpha \text{LNHL} + \beta \text{LNCL} + \gamma \text{LNSL} + \delta \text{LNEL} + \varepsilon (1)$$

According to the actual development of Tongren City, this paper selected the data of credit consumption collected by Tongren Central Branch from the first quarter of 2011 to the fourth quarter of 2017. The GDP data came from Tongren National Economic and Social Development Statistical Bulletin and the statistics of China Economic and Social Network. In order to eliminate the interference of hetero-scedasticity or instability factors, the original data is processed logarithmically to make the test results more real and effective (interested readers can ask writer for it).

B. Model Analysis

1) *Stationarity test*: Usually the financial time series data are non-stationary state. In order to prevent the false regression phenomenon in regression analysis, this paper selects ADF test method to test the stability of the above data, and the results are as follows:

TABLE III. THE RESULTS OF ADF

via	Test form (N,M,T)	ADF value	P-value	Statio-narrity
LNGDP	(1,1,0)	-2.93462	0.168	no
▼LNGDP	(1,0,0)	-6.42276	0	yes
LNHL	(1,1,0)	-2.34195	0.3991	no
▼LNHL	(1,0,0)	-6.29381	0	yes
LNSL	(1,1,0)	-2.38945	0.3763	no
▼LNSL	(1,0,0)	-5.49817	0.0001	yes
LNCL	(1,0,0)	-2.96672	0.0547	no
▼LNCL	(0,0,1)	-2.17435	0.031	yes
LNEL	(0,0,1)	1.00906	0.9117	no
▼LNEL	(1,1,0)	-9.22898	0	yes

c. ▼-first order difference, N-Intercept item, M-Trend item, T-none

It can be seen that under the 5% significant level, variables of GDP, SL, HL, CL and EL are non-stationary. After the first-order difference of these variables, they are all stationary, that is, the variables satisfy the first-order monolithic, and there is a stable relationship between them.

2) *Cointegration test*: In order to test whether there is a long-term equilibrium relationship between consumer credit and economic growth, we use EG two-step method to verify the relationship between HL, SL, CL, EL and GDP. After

optimizing regression, the problem of vector auto-regression is avoided to the greatest extent. The stepwise regression method is adopted to obtain the cointegration equation.

$$LNGDP = 2.365 + 0.342LNHL + 0.358LNEL$$

(18.08) (3.135) (2.896)

(2)

$$R^2 = 0.945960 \quad F - \text{Value} = 218.8085 \quad DW = 1.166896$$

Therefore, the fitting effect of the model is very good. In order to ensure the credibility of the results, we also tested the residual series of equation (2) by ADF, which is also stable. Therefore, there is a long-term equilibrium relationship between housing loans, other loans and economic growth: every additional unit of housing loans and other loans can promote economic growth by 0.34 and 0.36, respectively.

3) *Error correction mode*: There two variables with long-term equilibrium relationship maybe imbalances in the short term. We should pay attention to the self-correction ability of short-term fluctuations. Next, we use regression residual series as explanatory variables to test whether there is a short-term dynamic relationship between variables:

$$\Delta LNGDP = 0.013 + 0.431 \Delta LNHL + 0.082 \Delta LNEL - 0.523 \text{resid02}(-1) \quad (3)$$

$$R^2 = 0.286916 \quad DW = 1.816489$$

It can be seen that the symbols of HL and EL coefficients are consistent with long-term equilibrium, and the coefficient of correction term is negative, which conforms to the reverse correction mechanism. Therefore, housing loans and other loans may deviate from the long-term equilibrium in the short term, but eventually they will be pulled back from the non-equilibrium to the equilibrium with the adjustment of 0.523. Therefore, there is a long-term equilibrium relationship between consumer credit and economic growth, which can effectively stimulate economic growth.

VI. SUGGESTIONS ON THE DEVELOPMENT OF CONSUMER CREDIT IN TONGREN

From the above, we know that there is a long-term equilibrium relationship between consumer credit and economic growth. The consumer credits can effectively promote economic growth. Housing loans and other loans play a larger role, followed by automobile loans, and student loans have not found significant correlation. In recent years, the overall level of personal consumption loans in Tongren City has increased rapidly, but there are still some problems as follows: unreasonable structure of credit products, simplification of varieties; large income gap between urban and rural residents, unbalanced development of regional credit; immature personal credit system; late start of consumer loans, fewer credit institutions; guarantee system is not perfect, and so on. Therefore, we should strive from the following angles:

Firstly, adjusting the scale of credit structure and develop diversified products: steady development of housing loans, while pulling up the proportion of other consumer loans. For example, rationally plan land for housing construction, properly reduce housing prices, relax the minimum restrictions on automobile loans and increase the investment of student loans, so as to balance credit structure. Introduce diversified consumer loans, such as developing loans for children and infants, innovative entrepreneurship loans for young and middle-aged people, consumer loans for cosmetics and beauty products, and loans for health care products for the elderly, or set up loan products at different levels according to regional income level.

Secondly, promoting credit consumption steadily by balancing development between urban and rural: the government should support the development of related industries in rural areas, increase the construction of agricultural and rural infrastructure, stimulate the income of rural residents, narrow the gap and improve the level of consumption; at the same time, appropriate propaganda should be carried out to encourage and advocate the residents to carry out credit consumption and change their consumption concept, so as to promote the balanced development of consumer credit between urban and rural areas.

Thirdly, improving the personal credit system: from the perspective of financial institutions, it is suggested to strengthen the collection and timely update of personal credit data, strengthen personal credit awareness, strengthen the establishment of social credit system, establish a lifelong credit supervision system, urge people to pay attention to credit issues and ensure catch with the pace of development of consumer credit.

Fourth, encouraging loan companies to develop consumer credit business legally: At present, there are dozens of loan companies in Tongren City, but they are not very popular in county towns. Therefore, more loan companies are encouraged to participate, with the government as the guarantee and the bank as the support, more companies can carry out consumer credit, relax access procedures, and gradually extend from cities and towns to rural areas.

Lastly, reforming the government system and strengthen the social security system.

We should adjust the direction and intensity of government support, such as education, confidence of consumers, and interest of providers and investment in the development of credit consumption; strengthen social financial investment, improve residents' consumption affordability, reduce expected risk savings, so as to accelerate the development of consumer credit in Tongren City.

VII. CONCLUSION

Under the background of global economic downturn, China's economy has also experienced a decline in growth rate. It has become enter the "new normal" of economic

growth, we had to seek new economic growth point and maintain stable economic growth. The importance of finance in sustaining economic growth by providing power and financial support for consumption and investment has been gradually emphasized. The development of small towns in Western China has an important impact on China's economic growth. Based on the empirical analysis of consumption credit in representative towns of Guizhou Province, this paper demonstrates that consumption credit will indeed contribute to local economic growth. Through historical data analysis, it finds out the typical problems in the scale and structure of financial development, and holds that local governments, financial institutions, and even the enterprises and residents should be taken to consideration to cultivate and improve financial markets in order to promote economic development.

REFERENCES

- [1] Thomas L C. Consumer finance: challenges for operational research[J]. *Journal of the Operational Research Society*, 2010, 61(1):41-52.
- [2] Philip A, Klein. The cyclical Timing of Consumer Credit [J]. Occastioaal Paper,1976. Meghan Bishop, Credit Spending and Its Implications for Recent U.S. Economic Growth [J]. Washington College, 2011.
- [3] Pereira. Jonathan. The Demand and Supply for Household Debt: A GrossCountry Comparison. Mimeo. University of Edinburgh, 2003.
- [4] Zeldes and Stephen P. Consumption and Liquidity Constraints: An EmpiricalInvestigation. *Journal of Political Economy*, 1989.
- [5] Ludvigson, S. Consumption and Credit: A Model of Time-Varying Liquidity Constraints [J]. *TheReview of Economics and Statistics*, 1999,(3): 434-447.
- [6] Maki D M. The Growth of Consumer Credit and the Household Debt Service Burden[J]. *Finance & Economics Discussion*, 2000(2000-12):43-68.
- [7] Ryan, M. Patterns and determinants of Irish consumption [EB/OL], <http://www.centralbank.ie/data/QrtBullFiles/Patterns>, 2010-03-20.
- [8] Fabio Wendling Muniz de Andrade, Lyn Thomas. Structural Models in Consumer Credit [J], *European Journal of Operational Research*, 2007, 183, 1569-1581.
- [9] Wang Jin. An Empirical Study on the relationship between consumption credit development and economic growth [D]. Southwest Jiao Tong University, 2007.
- [10] Sang Ting Ting. Study on the relationship between consumption credit and economic growth in China [D]. Dongbei University of Finance and Economics, 2012.
- [11] Wang Dongjing, Li Li. On consumer credit and domestic demand [J]. *finance and trade economics*, 2004 (4): 15-20.
- [12] Zhao Ailing. On the relationship between consumer credit and income and economic growth [J]. *financial research*, 2000 (10): 34-37.
- [13] Zhou Hong, Liu Yi. Differences between Consumer Credit and Regional Economic Growth: An Empirical Study Based on Hunan Province Data [J]. *Seeking*, 2008 (12): 41-43.
- [14] Yangkaihua. The mechanism and Empirical Study of consumer credit affecting economic growth in China [D]. Hunan Normal University, 2012.
- [15] Cai Guo. Research on the Impact of Consumer Credit on Economic Growth: Empirical Evidence from Neijiang City [D]. Southwest University of Political Science and Law, 2015.
- [16] Qiao Bing. Influence of consumer credit and its term structure on China's economic growth [D]. Tianjin University of Finance Economics, 2017.