Research on the influence of China Nets Union Clearing Corporation on third-party non-interest payment business

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Abstract. Since the People's Bank of China advocated the implementation of the China Nets Union Clearing Corporation Platform, third-party payment institutions began to transform their business and developed non-interest business. Based on the data of 14 months of iResearch, this paper studies the factors of the non-interest business of third-party payment institutions through fixed effect panel regression, and concludes that the influence of China Nets Union Clearing Corporation on the business of third-party payment institutions is positive spillover effect. The impact on smaller third-party payment institutions is more significant. According to this conclusion, the paper puts forward the coping strategies and development ideas of third-party payment institutions.

1. Introduction

The People's Bank of China announced the establishment of the Nets Union Clearing Corporation (hereinafter referred to as NUCC) on August 4th, 2017, and officially listed on June 29th, 2018. From June 30th, 2018, the third-party payment business of all non-bank financial institutions must be settled through the NUCC, which has brought great influence to the third-party payment institutions. What exactly is the "NUCC"? Why do China set up "NUCC"? What is the operation mode of the NUCC? What impacts does it have on third-party payments? What are the spillover effects? What measures should third-party payment institutions take? Based on this mission, 16 of the 45 federation institutions of NUCC were selected and divided into two groups, using E-views 7.2 for the 14-month period from August 31st, 2017 to October 31st, 2018 for two sets of samples respectively. With the panel regression of fixed effect, this paper makes an empirical analysis on spillover effect of unified platform to third-party payment institutions, and then puts forward corresponding countermeasures and suggestions for the Internet clearing and the transformation of third-party payment business.

The main innovations of this paper are as follows: (1) due to the short running time of the unified platform, the research literature in this area is relatively scarce. Among the few studies, some are mainly focus on the impact of third-party payment institutions on commercial banks (Su Dongxi-2018), or on the risk monitoring of NUCC's running to third-party payment (Qiu Wei, Wenqi Ma-2017) and so on, but there are few studies on the influence of NUCC's running to the business of the third-party payment institutions. This paper is going to initiate the exploration in this respect; (2) this paper constructs the model of non-interest service of the third-party payment institutions, empirically analyzes the business orientation of the third-party payment institutions in the post Internet connection era, and realizes the innovation of the research method in this field; (3) according to the results of empirical researches, this paper puts forward the transformation thinking of third-party payment institutions to expand their non-interest business, aiming at Alipay, Tenpay and other large institutions. While consolidating the domestic market, initiative to enter the international market at the same time is a good way.

2. The background, Logic and spillover effect of the establishment of NUCC

2.1 The background to the establishment of NUCC

According to iResearch, the scale of third-party payment transactions in China has expanded rapidly in the past seven years. Especially since 2015, it increase at an annual rate of nearly 20%, from 37 trillion yuan in 2016 to 53 trillion yuan in 2017. In 2018, it is more than 71 trillion yuan. Internet payment of non-bank financial institutions develop rapidly, but related legal and administrative supervision and management measures are falling behind. Figure 1 below shows the scale of third-party transactions and their year-on-year growth rates through nearly eight years of 2011-2018.
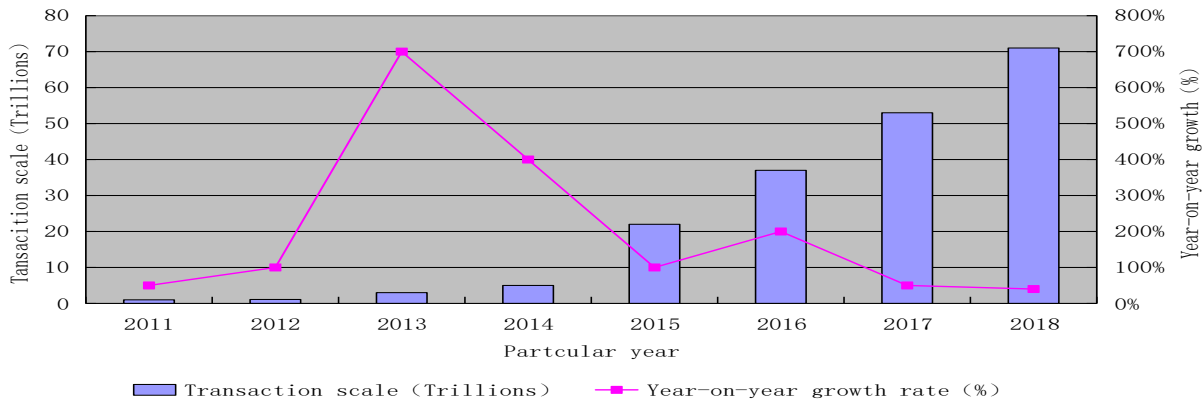

Figure 1 data on the development of third-party payment transactions in China 2011-2018
Source: iResearch

As shown in figure 1, with the vigorous development of the third-party payment industry, the scale of funds in the third-party payment accounts has multiplied in recent years. However, the security risks of the fruits of precipitation funds and the reserve funds in the payment accounts have increased simultaneously, which means financial risk has increased steeply. Who will monitor it? The problems become more and more prominent and need to be solved urgently. Therefore, the establishment of NUCC became eager.

In February 2017, Nets Union Clearing Corporation was formally registered and established. Under the guidance of the People's Bank of China, 45 shareholders were invested. Under the principle of "joint set-up, ownership and haring", third-party payment institutions contributed 2 billion yuan, with 63% of the shares occupied. In addition, 7 companies under the central bank contributed 1.1 billion, with 37% of the shares occupied. The operation was carried out by the NUCC to perform the functions of unified supervision and unified clearing. Major shareholders are shown in figure 2 below:
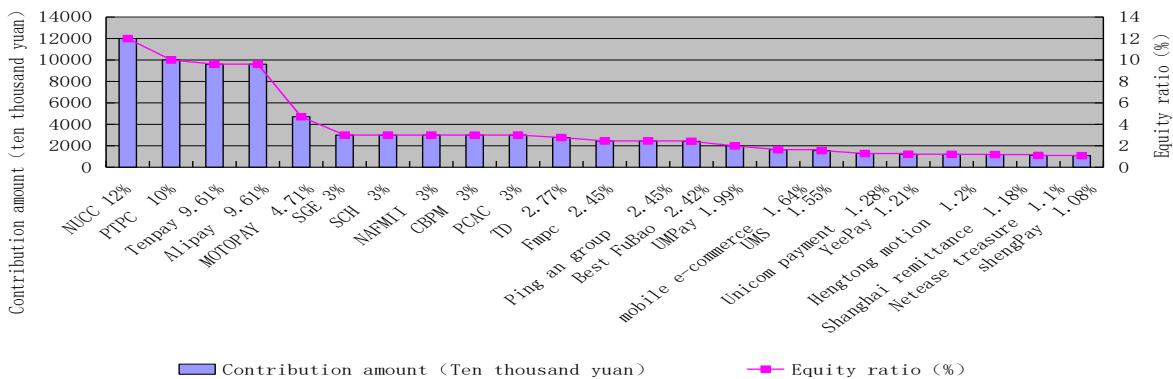

Figure 2 shareholder contribution and shareholding ratio of NUCC Data
Source: 2017 < Establishment Agreement of Nets Union Clearing Corporation >

2.2The Logic of the establishment of NUCC

2.2.1 The need to make up for the blind spot of third-party payment regulation

Before the establishment of the NUCC, China had formulated the "Measures For the Administration of Network Payment", which clearly stipulated the ownership of funds deposited by customers in payment institutions, but there were no corresponding laws and regulations on such issues as the difference in the time of settlement of reserve funds. This legal loophole made the third-party payment look at the precipitation funds and their fruits. For more than 10 years, the specific data of the precipitation funds and fruits produced by Tenpay, Alipay and other third-party payment institutions have not been published. After the establishment of NUCC, the network payment of funds and reserve fruits and other hidden income of the third-party platform will be completely in the hands of the government, implementing absolute effective management.

2.2.2 The need to maintain the security of clients' funds

In the payment industry, due to the different operating ability and platform management technology of each payment institution, the account of the payment institution is facing the risk of capital security and information security. In addition, the progress of the various payment institutions in promoting the customer real-name system is different. Some payment institutions' app do not require the real-name system or the real-name system to be audited loosely, or even open multiple accounts, which is easy for criminals to make use of payment accounts to defraud, transnational money-laundering, illegal financing and other network crimes. After the running of the NUCC, this loophole was plugged effectively.

2.2.3 The need to maintain the information security of customers

With the enlargement of customers, third-party payment institutions have more and more private information. Although institutions also use technical means to strengthen the protection of customer information, the public commitments on websites or apps in the form of documents or announcements they made is still not enough. The risk clauses given are often too long and difficult to interpret, and contain a large number of exemptions, and individual institutions even define security hazards that have been hacked because of inadequate technical protection as "systemic factors" and "non-insurmountable factors" for their own exemption in the future. On the other hand, due to the fierce competition in the industry, some weak third-party payment institutions are on the verge of being eliminated, and a large number of customer personal information they have is in danger of being leaked seriously.

2.3The Logic of the establishment of NUCC

2.3.1 the Operation mode of UNCC

The operation mode of NUCC is to disconnect the mode of direct connection of the third-party payment institution with the bank, and all network payment business and clearing business must be carried out through the unified platform. But the unified platform does not provide financial services directly for consumers, nor does it touch capital, so it can also be called the fourth-party financial services platform.

the mode of direct connection with bank   the mode of the NUCC supervision
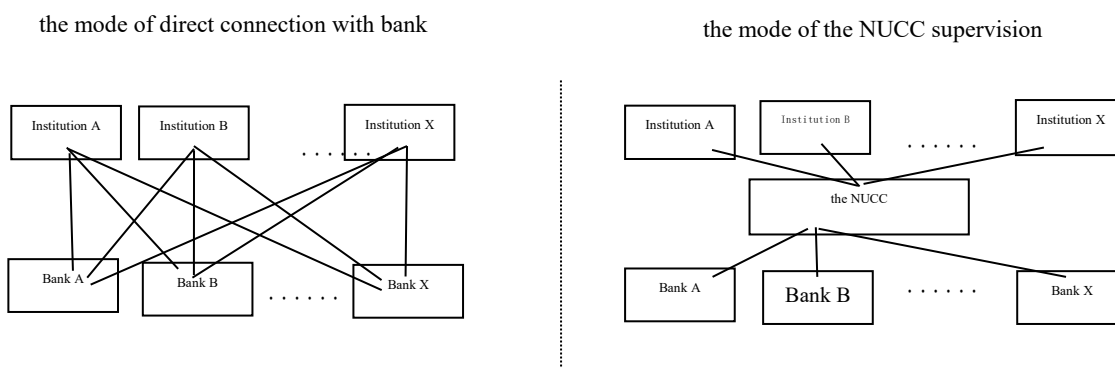

Figure3 comparison of connection modes before and after NUCC implementation

From the above 3, we can see that the biggest difference before and after the operation of NUCC is to change the network connection. That is to say, the third-party payment institutions directly used to connect with commercial banks, but now they must connect directly to indirect connections through an intermediary, the Internet clearing platform. Apparently, the direct connection change to the indirect connection.

2.3.2The main influence of NUCC on Third-party payment institutions

（1）Organizational transformation Before the operation of NUCC, the profit source of the third-party payment institution is mainly the interest rate difference income generated by the customer reserve money deposited with the bank by the third-party payment institution. After the operation of NUCC, the original customer's reserve of the third-party payment institution is centrally deposited with the bank supervision by the NUCC, the bank no longer pays interest on the reserve, the customer's reserve can no longer bring the customer a huge amount of interest income. That's to say, in fact, the cheese is broken. This major change forces third-party payment institutions to transfer their business types to non-interest businesses. In terms of market scope, third-party payment oligarchs such as Alipay and Tenpay must open up the international market as soon as possible.

（2）Efficient market remodeling. As a result of unified access, small and medium-sized payment institutions can obtain the opportunity to compete with oligarchs without spending a huge amount of money to build their own access systems. Besides, because of the uniform rates imposed by the NUCC on all institutions, small and medium-sized institutions are no longer passive in negotiating prices with commercial banks because of differences in investment and technology, and obtain the same access costs as large institutions. As the result, effective competition in the market is repeated.

（3） The cost of system maintenance is reduced. Because NUCC has assumed the docking with each commercial bank in a unified way, the third-party payment institutions can obtain the transaction information without build and maintain the connection system, so the cost of the third-party payment institution' system development, operation and maintenance has been greatly reduced. For small and medium-sized institutions, they can obtain more opportunities for innovation and development.

（4） The rights and interests of users are protected. After running, NUCC has no influence on the user's experience. The user's information is protected by the government public platform, and the government also has the initiative of supervision.

3. Theoretical analysis and research hypothesis

Spillover effect refers to the reaction of an organization that is not available to it, but has a significant impact on other organizations when the organization carries out an activity. In short, the activities of one subject have an impact on another. The spillover effect of NUCC on third-party payment institutions is reflected in the business transformation, product innovation, technological innovation, service innovation and market innovation. During this period, non-interest income is quantifiable. There are two sides to this effect. The positive spillover effect is defined as the positive spillover effect, whereas the negative spillover effect is defined in this paper.

In view of the quantifiable spillover effect of the NUCC on the third-party payment institutions, the main manifestation of the spillover effect is the non-interest income, so this paper takes the non-interest income measurement as the research object. If we set the non-interest income as (NI), the cost of non-interest service is (NC), the income of non-interest service is (NR), then we can calculate the formula: NI=NR-NC. To better understand this division, we explain this effect in the following two ways:

3.1 Negative effect

After the operation of the NUCC, third-party payment institutions are no longer directly connected with commercial banks, and the huge reserve money brought by the customer resources of the payment institutions will no longer bring interest income to them. In the short term, the interest income of these institutions will decline markedly. The original connection commercial bank docking

module will appear some unfavorable situations like the asset idle, the investment cost temporarily cannot digest and so on. Individual small institution even abort. Based on this analysis, there are the following:

$$\frac{\partial NI}{\partial TPS} = \frac{\partial NR}{\partial TPS}(-) - \frac{\partial NC}{\partial TPS}(+) < 0$$

It shows that the clearing operation of NUCC has a negative spillover effect on the non-interest income paid by third-party

3.2 Positive effect

After the operation of NUCC, third-party payment companies do not need to establish their own clearing systems, do not need to connect directly with many commercial banks, and do not need to negotiate with various commercial banks, do not need to bear the maintenance costs of their own clearing. They only need to link up with the NUCC, which implements at a fair, open, transparent, and uniform rate. Unexpectedly, this payment market clearing efficiency is improved, and brings third-party payment institutions more resources and capabilities to develop new network payment products instead of relying on interest. Focusing the innovation of payment technology on the front end of customer service, they can innovate payment products and service content. Considering non-interest income as a new strategic profit point, then they can return to the nature of financial services. This is the positive impact that can be achieved, so there are:

$$\frac{\partial NI}{\partial TPS} = \frac{\partial NR}{\partial TPS}(+) - \frac{\partial NC}{\partial TPS}(-) > 0$$
.

According to the needs of the empirical research, this paper extracts 16 third-party payment institutions from the 45 third-party payment institutions that have invested in NUCC. The first group is the majority shareholder, which is composed of the first 3-8 (hereinafter referred to as the third-party large institution); the second group is composed of the bottom 11 (hereinafter referred to as the small and medium-sized third-party institution). Then, it studies the "spillover effect" of NUCC's clearing on the third-party payment of different scale. Before doing the empirical analysis, this paper puts forward two theoretical assumptions:

The first assumption H1: the "spillover effect" of NUCC on all third-party payment institutions exists and is greater than zero. Theoretically, the impacts of the establishment and operation of the platform on the non-interest income paid by the third-party depend on the comparison of the two effects. After the operation of the unified platform, there is no need to establish a long direct connection between the third-party payment institutions and commercial banks. The clearing of the third-party payment market funds is through the centralized processing of the unified platform in a unified way, and all the entries, operations and opportunities of all the institutions are balanced. The cost of negotiating separately with many banks is reduced after centralization. Due to the effect of market scale, the overall clearing cost finally reaches Pareto Optimality (Jianhua Wang, Chunying Zhang 2018). In this way, the payment institution will have more resources and capabilities to invest in technological innovation, product innovation and market innovation, and achieve effective competition. It means that the third-party payment institution has gained more advantages than disadvantages.

The second assumption H2: the "spillover effect" of NUCC on the medium and small payment institutions is greater than that of large institutions. Because there is also a significant "spillover effect" of the establishment of NUCC. With the principle of "joint set-up, ownership and sharing", the data center for sharing the entire payment market has been built, which made the original comprehensive data function of super large third-party payment institutions gradually degenerated into analytical functions, and NUCC acquired and shared transaction data while undertaking all payment and settlement. As a result of powerful support of the technology and data provided by this unified platform, small and medium-sized institutions will receive more resources and capabilities to

invest in product development and risk control, and gain more opportunities for market competition. That is, the third-party small and medium-sized institutions gain more effect.

4. Variable description and Model Construction

4.1 Dependent variable and independent variable

The object of this paper is the ＂spillover effect＂ of the scale of NUCC on the non-interest income of the third-party payment institution. Therefore, we define the dependent variable as the proportion of non-interest income of the third-party payment institution, and the independent variable is the supervision scope of NUCC

4.2controlled variable.

Because there are many factors influencing the non-interest income of third-party payment institution, we analyze the motivation, cost and income of non-interest business of third-party payment institution to ensure the accurate representation of the empirical results. In the model, four controlled variables are introduced: the deposit to loan ratio (DLR), management fee (MF), net interest margin (NIM) and the bad loan ratio (BLR).

（1）**the deposit to loan ratio (DLR)**

The ratio of deposit to loan is the ratio of loan scale and deposit scale. This is an indicator of the liquidity and turnover of third-party institution. The higher DLR is, the greater the liquidity of third-party institution is and the greater the risk of institutional liquidity is. When liquidity risk increases, for large third-party payment institutions that rely on asset operations, they can only increase non-interest income to make up for the lack brought about by the blocking of this relying business. It leads to inevitable choice for third-party payment institutions to develop non-interest business. At this time, the DLR of large institutions and the non-interest business income of large institutions show a positive correlation. For small and medium-sized third-party payment institutions, the situation is just the opposite. When they are prepared to increase the DLR, it reveals that it focuses on developing non-interest business. Therefore, we think that there is a negative correlation between the two in theory. The key to understanding this theory is that large institutions are already reducing risk at the high DLR, while small institutions are trying to increase interest on asset operations at lower DLR and lower liquidity risks.

（2）**management fee (MF)**

Management fee refer to the expenses incurred by third-party payment institution in carrying out various operations. If the management fees are high, the cost of conducting non-interest business will increase, and the growth of non-interest income of third-party institution will be reduced in the short term; But on the other hand, it also shows that third-party institution has put more cost into non-interest income business, and in the long run, it should be beneficial to the growth of non-interest business income. The author thinks that for large third-party payment institutions, the proportion of management fees used in asset business is higher, so the elasticity of non-interest income will not be obvious. That is to say, it reflects a lower pull effect. At this time, there is a negative correlation between management fees and non-interest income. On the contrary, the third party small and medium-sized institutions tend to use management fees to carry out non-interest business, so the pull effect is more significant, and the two variables have a positive correlation in theory.

（3）**net interest margin (NIM)**

Net interest margin refers to the difference between the average yield on interest-bearing assets and the average cost of interest-bearing liabilities. Net interest margin is an important indicator to measure the net interest income of third-party institution. If the net interest margin of the third-party institution is bigger, it means that the higher the proportion of the interest-bearing business is and the better the efficiency is. Then it will not have more willingness and opportunity to carry out the non-interest business for that will reduce the non-interest income. Therefore, this paper concludes that

there is a negative correlation between the expected net interest margin and the non-interest income of the third-party institution.

（4）the bad loan ratio (BLR)

The bad loan ratio (BLR) refers to the ratio between the problem loan and the total loan in the asset business of the third-party payment institution, which is an important index for it to measure the credit risk and the quality of assets. If a high proportion of the assets of large institutions paid by third-party, it must be the result of their bigger asset operations, and that will cause a relative run of the non-interest income business. So for large third-party payment institution, we think that the bad loan ratio is negatively related to the development of non-interest income. While for small and medium-sized institutions, better benefited from NUCC, if the bad loan ratio is high, the interest rate on assets must be reduced to make up the gap of interest income caused by the reduction of excellent assets, to maintain the expected profit level. We believe that the bad loan ratio and non-interest income are positively related to the third-party payment of small and medium-sized institutions.

The variables involved in the model and its expectation of non-interest income for third-party institutions are shown in Table 1.

Table 1 Summary of model composition variables, expected symbols and data source descriptions

Variable	Variable Declaration	Expected symbol	sources of date
Non-interest (NI)	Ratio of Non-interest Income to Total Assets		iResearch
UNCC settlement scale（UNCCSS）	the Logarithmic Data ofUNCC settlement scale	+	iResearch
the Bad Loan ratio (BLR)	Ratio of Non-performing Loans to Deposits	Large（-）Small（+）	iResearch
the Deposit to Loan Ratio (DLR)	Ratio of Loans to Deposits	Large（-）Small（+）	iResearch
Management Fee（MF）	Logarithmic Data on Management Fee	Large（-）Small（+）	Giant tide information
Net Interest Margin (NIM)	Ratio of Interest Income to Average Total Assets	-	iResearch

Therefore, this paper establishes the following model to analyze the impact of Internet platform on non-interest income paid by third-party:

$$NI_{it}=a_0+ a_1*UNCCSS_{it}+ a_2*BLR_{it}+ a_3*DLR_{it}+ a_4*MF_{it}+a_5*NIM_{it}+ \varepsilon_{it}$$

Among them, the random disturbance term is expressed as ε_{it}. The third-party payment institution individual is I, sequence time is expressed by t.

5. Empirical test and results

5.1 Sample descriptive statistics

In this paper, 16 third-party payment institutions selected from the shareholders of the NUCC are divided into two groups. The first group of samples includes Tenpay, Alipay, MOTOPAY, Tianjin E-Commerce, and Fast Line Payment. The second group of samples included the small institutions that Superior paid for at the bottom of the list. The time span is from August 31st, 2017 to October 31st, 2018. The data used are 14 months of iResearch. The first group selects 450 sample data, and the second group selects 960 sample data. The descriptive statistics are shown in Table 2.

Table 2 the Descriptive statistics

item	the Large Third-party Payment Institution						the Small and Middle-size Third-party Payment Institution					
statistical quantity	NI	BLR	DLR	LNMF	NLM	UNCCSS	NI	BLR	DLR	MF	NLM	IFSS
maximal value	42.60	2.40	83.86	16.41	2.81	10.74	33.91	1.56	76.98	13.61	3.08	10.74
minimum value	17.46	0.87	58.30	13.67	1.83	9.23	7.95	0.83	42.68	11.07	2.01	9.23
mean value	27.59	1.30	69.95	15.08	2.37	10.00	19.15	1.02	61.90	12.49	2.45	10.00
standard deviation	5.34	0.34	4.99	0.61	0.23	0.45	6.83	0.22	9.37	0.81	0.25	0.45

From Table 2, it can be seen that the non-interest income of large and small third-party institutions accounts for 42.6 and 33.91 DI respectively, which means that the non-interest income of large institutions is relatively higher. But the difference between them is the opposite--25.14 and 25.96, and the volatility is 5.34 and 6.83 respectively, which fully show that small third-party payment institutions have more space to develop non-interest business, and the effect will be more obvious. This descriptive statistic is also consistent with the pre-model assumptions. It can be seen from the deposit to loan ratio that the asset business of the large third-party payment organizations are more than other, and its bad loan ratio is also higher. This shows that the large third-party payment institution, after the operation of the NUCC, still has the ability to obtain part of the interest margin income for the time being. However, this net interest margin level will be lower than that of the small payment institution. This alone does not directly indicate that its income from the asset business is not high but only shows that the assets of the large third-party payment institutions are relatively large compared with the small, and the relative lower interest income after plummeting. As for management fee, obviously, large institutions are higher.

5.2 Unit root test of variables and cointegration test

Time series are trendy, so we use QLS regression analysis for the selected two kinds of panel data to calculate the smoothness of the first sequence. With E-views7.2 , we use ADF method to check the unit root of the panel data. The result is shown in Table 3 below.

Table 3 Results of unit root test of variables

the Large Third-party Payment Institution			the Small Third-party Payment Institution	
Variable Sequence	Primary Sequence	First-order difference sequence	Primary Sequence	First-order difference sequence
NL	0.2227	0.0002（***）	0.1706	0.0001(***)
BLR	0.6421	0.0065（***）	0.2199	0.0447(**)
DLR	0.6006	0.0108（**）	0.1638	0.0000(***)
MF	0.0183（**）	0.0000（***）	0.0000(***)	0.0000（***）
NIM	0.4861	0.0000（***）	0.9976	0.0003（***）
UNCCSS	0.0002（***）	0.0205（***）	0.0002(***)	0.0205（***）

Note: ***, **, * means significant at a significant level of 1%, 5%, 10% *

Table 4 Kao test results

the Large Third-party Payment Institution					the Small Third-party Payment Institution			
Name of Statistic	Lag sequence	Statistics T	Value P	Result	Lag sequence	Statistics T	Value P	Result
ADF	2	-2.716208	0.0033	Reject （***）	2	-4.889884	0.0000	Reject （***）

Note: *** indicates that the original hypothesis is rejected at a significant level of 1%, and the lag order is determined by the SIC criterion

From the column of the original sequence in Table 3, it is not difficult to find that most of the sequences are non-stationary at the 5% significant level, but after the first order difference processing, the difference sequences are all stable at the significant level of 5%,. And the whole panel is first order monolithic. Then, with E-views 7.2, we further test the cointegration of variables using Kao method. The results are shown in Table 4.

As we can see from Table 4, at a significant level of 1%, both large third-party payment institutions and small third-party payment institutions rejected the original assumption that panel data are not cointegrated, so we believe that from August 31st 2017 to October 31st 2018, there is a cointegration relationship between the proportion of non-interest income and the variable of the large third-party payment institution and the small third-party payment institution.

5.3 Test and Hausman test

The test logic here is: the validity and reasonableness of the model-cointegration test-effect coefficient regression-F model are selected. The sum of the squared residuals obtained by the variable coefficient regression in the fixed effect and the mixed effect is expressed in S1 and S2, respectively. Then the F test model is:

$$F= \frac{(S_1 - S_2)/[(N-1)(k+1)]}{S_2/[NT - N(k+1)]}$$

In this test, N denotes the number of cross sections in the panel data, k represents the number of independent variables of the model, and T represents the time span in the panel. Principle: when F is below the critical level, the panel model can be applied to the mixed effect, otherwise, it does not hold.

Secondly, to determine whether the panel analysis is suitable for fixed effect or random effect, we choose Hausman to test. Through the above two tests, the results obtained in this paper are shown in Table 5.

Table 5 Results of panel data f test and Hausman test for large third-party payment institutions

	the Large Third-party Payment Institution	the Small and Middle-size Third-party Payment Institution
Statistic F	5.4543	14.7735
critical value	1.7995	1.4517
Rate of Hausma-test p	0.0132（**）	0.0000（***）

Note: the confidence of the critical value of the F statistic is 5%，***，**，* respectively indicate the rejection of random utility at a significant level of 1%, 5%, 10%.

From Table 4, we can see that the statistical value of F is higher than the critical value of 5% significant level, either the large third-party payment institution or the small third-party payment institution, so the panel data cannot be analyzed by mixed effect. Similarly, through the Hausman test, panel regression with random effects cannot be proceed, because panel data are rejected at a significant level of 5%. Finally, we can only use the fixed effect panel to regress the two panel data through E-views 7. 2.

5.4 Panel regression and model conclusion

We use e-views 7.2 to regress the two panel data as shown in Table 6. The empirical results of large third-party payment institution and small third-party payment institution are shown in equation (1) and equation (2), respectively.

Equation (1):

DI=180.2344-9.6321BLR+0.4673DLR -12.2834MF -21.1564DIM+5.1031UNCCSS

(6.0023***)(-4.1236***)(2.3568**)(-5.8016***)(-5.4962***)(2.5136**)

Table 6 Fixed-effect cointegration test results of third-party payment institutions

Variable	the Large Third-party Payment Institution			the Small and Middle-size Third-party Payment Institution		
	Coefficient	Statistic T	Statistic P	Coefficient	Statistic T	Statistic P
C	180.2344	6.002312	0.0000(***)	-55.36469	-2.00151	0.0461（**）
BLR	-9.632132	-4.123636	0.0002(***)	7.629558	2.355771	0.0228（**）
DLR	0.448861	2.356809	0.0182（**）	-0.342774	-3.012322	0.0051（***）
MF	-12.28343	-5.801625	0.0000（***）	3.865499	2.963119	0.0058（***）
DLM	-21.15643	-5.505787	0.0000（***）	-4.012124	-2.799887	0.0074(***)
NUCCSS	4.912653	2.565858	0.0136（**）	5.016372	2.401509	0.0230(**)

Note: In the table ***, **, * respectively indicates significant data sources at a significant level of 1%, 5%, 10%: Erie Counseling

Equation (2):
  R2=0.8127 Adjusted-R2=0.8023 F=24.5328 p=0.0000
  NI=-55.2867+7.6125BLR -0.2976DLR +3.8536MF -4.0121NIM +5.007NUCCSS
  (-2.0015**)(2.3672**)(-3.0123***)(2.9631***)-(2.6013***)(2.4015**)
  R2=0.9231 Adjusted-R2=0.9012 F=52.9756 p=0.0000

The goodness of fit of equation (1) R2 is 0.8127, adjust to 0.8023. Therefore, the fitting degree of the equation is 2, which is good. The statistical value of F of the whole equation is 24.5328, and the joint performance of all variables is significant at the level of 1% significance, which proves that the whole equation has passed the test. Similarly, for equation (2), the goodness of fit R2 is 0.9231, adjust R2 to 0.9012, then the explanation ability of the equation is good, and the statistical value of F corresponds to P value, so the whole equation is more assured to pass the test. Therefore, the coefficients of the two models finally draw such a conclusion: in the non-interest income model of third-party payment institutions, the relationship between dependent variables and each independent variables is completely consistent with the theoretical expectations of the design of the model. It also fits perfectly with the two previous assumptions-- the operation of the platform has a positive "spillover effect" on the non-interest service of the third-party payment institution, and this effect is more obvious in the small third-party payment institution than in the large institution.

6. Conclusions and recommendations

6.1Conclusions

On the basis of picking out the sequence data, this paper uses the regression method to carry on the empirical analysis, and draws the following conclusions:

6.1.1 the operation of the NUCC has a positive "spillover effect" on the third-party payment institution's non-interest income.

The empirical results show that the platform can promote the non-interest business of third-party payment institutions. No matter the large or the small should take the initiative to welcome the positive "spillover effect" brought by the full operation of NUCC, combine their own advantages, walk out of the single situation of excessive reliance on interest income, and realize the breakthrough

of non-interest income. Taking advantage of their reputation and brand advantages, although large third-party payment institutions can still retain a certain margin of income by virtue of their property scale, from the perspective of strategic development, they must take advantage of the positive "spillover effect" to increase their non-interest income and improve profitability; For small and medium-sized third-party payment institutions, the "spillover effect" is mainly manifested in fair competition and easy access. If the opportunity cannot be seized, the loss of interest income on reserve payments may be more difficult than that of oligarchs.

6.1.2 The NUCC will slightly reduce the confidence of institution innovation while performing its regulatory duties.

The main purposes of the NUCC are to monitor financial risks, ensure information security, and maintain fair competition in the market. But at the same time, due to the idle and transformation of the clearing platform built by large third-party institutions before, the interest income it brings is lost instantly. It's a blow, at least scruples, for third-party payment institutions' momentum of innovation to build other platforms. And small and micro-payment institutions might be glad they saved the cost of docking and construction, and also wait and see for large-scale innovation investment at the same time.

6.1.3 The spillover effect of Netcom's operation on third-party payment institutions is mainly in the domestic market.

Most third-party payment institutions are concentrated in the domestic market currently, with the domestic customers, so domestic business is affected. If the payment giant abroad actively, they may find an international way to compensate for domestic losses.

6.2 Inspiration and suggestions

6.2.1 Third-party payment institutions should develop non-interest business through innovation as soon as possible

To adapt to and make up the margin of interest on reserve funds, and to develop new non-interest business: first, actively strive to develop high-quality cooperation scenario, innovative the new business model of third-party payment institutions; Second, use the NUCC to share resources, transfer the costs that originally be invested in the docking commercial bank system construction to product development and service innovation; Third, Alipay, Tenpay and other large institutions should use their huge data analysis advantages and huge customer group resources to innovative products, technology and services, develop non-interest business and return to the essence of finance as soon as possible

6.2.2 Central Bank and the NUCC must handle the relationship between Supervision and Industry Innovation.

While doing a good job of monitoring Internet financial risks, we must continue to give and encourage third-party payment institutions to keep innovating and developing. We suggest that: first, we should study and grasp the latest developments in Internet finance, formulate the overall policy of taking into account the current situation supervision and future development guidance, protect the enthusiasm of the third-party to continue innovation, and play a substantive role; Second, after the regulatory authorities have severed the direct relationship between third-party payment institutions and banks, they should coordinate their relations in a timely manner and continue to give certain voice and participation rights to payment giants. At the same time, they also should protect the fair entry and non-discriminatory market treatment of small and medium-sized payment institutions; Third, if the regulatory authorities fully grasp the data, they should not just maintain the security of the data, but should make in-depth efforts in the use and development of data value, develop the explicit and potential value of the data resources, and promote a more comprehensive and more authoritative establishment of nationwide industry credit system.

6.2.3 rely on domestic technology and experience to speed up the expansion of overseas markets

Our third-party payment has been praised by the world as one of China's "four new inventions." Third-party payment institutions, for example, Alipay, Tenpay, should give full play to their leading

advantages in the field of network payment, such as capital, technology, talent, etc. Speeding up the pace of opening up the international market for third-party payment in a timely manner and increasing the speed of development of the overseas market can be made from the following three aspects:

First, actively export our payment standards, technology and products. Alipay, Tenpay and other large institutions should strengthen cooperation and communication with international finance, international standards and other institutions, striving to build our payment standards into the international electronic payment standard and leading the global third-party payment market; In terms of technology, to obtain legal protection in the international market, third-party payment need to see the market and decisively protect payment technology registration before the export of technology. In terms of products, scanner, QR code, output identification equipment and other products that are maturely operating in China need to eat into the international market and guide consumer development.

Second, actively export our payment mode. The government encourages and supports third-party payment giant such as Alipay, Tenpay to seize the international market through direct investment, indirect investment, mergers and acquisitions and other ways, and to win the international market through our mature, advanced business model, profit model.

Third, actively export our payment services. At present, China's outbound tourism, international trade and other activities are developing rapidly. Large third-party payment organizations such as Alipay, Tenpay, and so on, should make full use of the payment needs of these international activities, so as to land the ground, promote overseas market popularizing and growing gradually.

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