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# The varying shadow of China s banking system

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## ABSTRACT

The rapid rise of shadow banking activities in China since 2009 has attracted a great deal of attention in both academia and policy circles. Most existing studies and commentary on China s shadow banking have treated it as a recent phenomenon that appeared after the Global Financial Crisis and China s response to it. In this paper, I argue that shadow banking is not a new phenomenon; it has always been a part of China s financial system since the 9 0s, and arose from the need to get around various lending restrictions imposed by the central government on banks. I also emphasi e that there are two types of shadow banking activities, those initiated by banks and those initiated by local governments or state-owned enterprises. I provide evidence suggesting that the shadow banking activities initiated by banks prior to 99 helped directing credits to the more productive non-state sector and were efficiency enhancing. In recent years, however, I find that the shadow banking loans have a positive effect on real estate investments only, and their effects on investments by private firms outside the real estate sector have been negative.

Since 2009, shadow banking activities have grown rapidly in China. Fig. shows the breakdown of loans to non-financial sectors in China by four ma or sources bank loans, entrusted loans, trust loans, and bankers acceptances. Entrusted loans are loans made on behalf of large companies by banks, trust loans are loans made by trust companies, and bankers acceptances are notes issued by banks on behalf of non-financial firms. The later three types of loans are the main forms of shadow bank lending in China. Their share of total credits in China was 2 percent in 2009, grew to 20 percent by 20 , and stayed around 20 percent until 20 when a tightening of regulations on shadow banking by the central government reduced it to percent. The rapid rise of shadow banking activities since 2009 has attracted a great deal of attention in both policy circles and academia.<sup>2</sup> Is shadow banking a new phenomenon in China

hat are the driving forces behind China s shadow banking activities Most important, how does shadow banking affect China s real economy These are the uestions that I address in this paper.

I argue that shadow banking is not a new phenomenon; it has always been a part of China s financial system since the 9 0s, and arose from the need to get around various lending restrictions imposed by the central government on banks. I also emphasi e two potential effects of shadow banking on China s real economy. On one hand, because many productive private firms face difficulties in

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See, for example, Ellibitt, roeber, and is 20 , Sheng et al. 20 , and the IMF s Global Financial Stability Reports and FSB s Global Shadow Banking Monitoring Reports since 20 .

<sup>2</sup> See Acharya, ian and ang 20 , Bai, sieh, and Song 20 , ang et al 20 , Allen et al. 20 , achem and Song 20 , Chen, Ren, and Zha 20 , Allen et al. 20 9, and Chen, e, and Liu 20 9.

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#### 1.1. Related literature



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uotas in the years prior to 99 and through various regulations and window guidance since 99, nonbank lending institutions have played an important role in the overall credit allocation in China. The most prominent nonbank lending institutions are the trust and investment companies TICs, urban credit cooperatives CCs, and rural credit cooperatives RCCs. Other nonbank lending institutions include finance companies and leasing companies, but their shares of total credits have been very small. Therefore, my discussion here will focus on the TICs, CCs, and RCCs.

## 3.1. Nonbank lending institutions in the 1980s and early 1990s

*Trust and Investment Companies* rior to 99 , TICs can be broadly grouped into two types those affiliated with banks and those that were set up by local governments or large SOEs. Because the TICs were less regulated than banks and therefore had more exibility in credit allocation, banks had strong incentives to set up affiliated TICs as a way o get around the central government s restriction on loans; in the 9 0s and early 990s, almost all local branches of the state-owned banks in ma or cities had their own affiliated TICs. Local governments and large SOEs also had strong incentives to set up TICs so that they could use them to direct funds to their favorite pro ects. Not surprisingly, the number of TICs increased rapidly in the 9 0s. In 9 , the first year when the BC started to report the number of TICs, there were already of them. ithin one year, the number increased by more than 0 percent, to in 9 . The growth, however, was checked by the central government as it became concerned about the role of the TICs in diverting funds from the state-owned banks. About half of the TICs were closed down by the central government during a two-year crack-down in 9 9–90. The restriction on the growth of TICs may relaxed after eng Xiaoping s push for further market reforms during his famous tour of southern China in 992. The number of TICs increased again, but modestly from in 99 to 9 in 99

*Urban Credit Cooperatives* CCs were community-based credit cooperatives that mainly served the financing needs of local small and medium-si ed enterprises in the non-state sector. Because these enterprises had difficulty getting loans from the state-owned banks, their demand for credits from CCs were high. The first CC was established in 9 9. By 9 there were more than one thousand CCs in China. This growth happened despite the uncertain legal status of CCs, and accelerated after 9 when the BC formally sanctioned CCs as legal deposit-taking and lending institutions. Similar to the TICs, some of the CCs were also set up by the local branches of the state-owned banks as a way to get around the central government s restrictions on their lending activities and their growth were also checked in 9 9–90 as the central government tightened regulations of all nonbank financial institutions. **B**C

brought under the direct supervision of local branches of the Agricultural Bank of China ABC and therefore had strong connections with the formal banking system. By 9 there were more than six thousand RCCs in China, and they became a ma or source of financing for the township and village enterprises or T Es – the rural non-state enterprises that were the engine of China s growth in the 9 0s and early 990s.

In summary, the CCs, RCCs, and TICs are important-nonbank lending institutions that, in the 9 0s and early 990s, had strong connections to the state-owned commercial banks and, at the same time, faced less restrictions on their lending decisions. They were the shadow banks in China during that period. Their exibility in credit allocation and their links to banks greatly facilitated the diversion of funds from the formal banking system for lending to non-state enterprises outside the central government s credit plans. As documented by Brandt and Zhu 99, 2000, the central government s regulation of these nonbank lending institutions uctuated between strict and lax during this period, so did the role of these institutions in the overall credit allocation of the economy. Table 2 reports the amounts-of-outstanding loans made by these nonbank lending institutions and their shares of total credits in the economy. The data source is the *Almanac of China's Finance anetBanking* publis hed annually by the BC. The share of total credits accounted for by the TICs, RCCs, and CCs together had an upward trend between 9 and 99, but the speed of increase uctuated significantly. The uctuations were particularly pronounced for the TICs. In 99 and 99 , but the speed of increase uctuated significantly declined as a result of the banking reform launched in 99 and the associated recentrali ation of China's banking system. In 2009, their share of total credit was only 9. 2 percent.

3.2. Banking reform in 1994 and

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banks. The ownership structure of these banks also changed from collective to shareholding companies with the SOEs as the controlling shareholders. For example, when the Bei ing Rural Commercial Bank was established in 200, its three largest shareholders were all SOEs under the supervision of the Bei ing city government Bei ing Company Ltd., and Bei ing uarong Investment Company. The head Bei ing, and by asset it was ranked 0 in 200 among the list of Top 000 orld Banks published by The Banker maga ine in England.

# 3.3. The role of nonbank lending institutions in credit allocation

Because the CCs and RCCs lend mainly to small and medium-si ed enterprises in the non-state sector, their rise in the 9 0s and early 990s played an important role in the improvement of capital allocation we saw in Fig. 2. In Fig. , I plot the share of short-term non-agricultural loans made by all financial institutions that went to the state-owned enterprises SOEs . Comparing Fig. to Fig. 2, one can see that capital misallocation is strongly associated with the SOEs share of short-term credits to non-agricultural enterprises, which uctuated around a declining trend from 9 to 99, but then reversed the course and trended upward. The reversal is a result of the banking reform in 99. As we discussed earlier, the CCs and RCCs have been gradually consolidated into much larger city and rural commercial banks, which are under the control of local governments and generally favor large enterprises over small and medium-si ed enterprises in their credit allocation. ang 20 , for example, uses city-level panel data to study the impact of city commercial banks on local economic growth. e finds that between 999 and 200, firms in cities with newly established city commercial banks had significantly lower growth rates than firms in other cities, and the negative effect is particularly strong for small firms. This evidence suggests that the recentrali ation of the banking system is one of the reasons behind the increased misallocation of capital after 99.

The role of the TICs in allocating credits between the state and the non-state enterprises is not as clear as the role of the CCs and RCCs. On the one hand, the state-owned banks tend to use their affiliated TICs as a way to get around the restrictions of the credit plans so that they can lend to more profitable non-state enterprises. On the other hand, the local governments and large SOEs tend to use the TICs under their control to direct funds to their favorite pro ects in the state sector. Since there were many bank-affiliated TICs prior to 99 and all of them were shut down after 99, one may expect the role of the TICs in credit allocation to be different before and after 99. In Table, I report OLS and Tobit regressions of the SOEs share of short-term credits on the share of TIC loans as a percentage of loans made by all financial institutions and its interaction with a post-99 dummy.

The regression results show that over the entire sample period the SOEs share of total credits was negatively correlated with the share of TIC loans, but not statistically significant. For the period after 99, however, the correlation between the two shares is significantly positive. These results are consistent with the hypothesis that the bank-affiliated TICs tend to direct credits to the non-state enterprises while the local government SOE controlled TICs direct credit to the state-owned firms. For the period after 99, because the TICs were mostly controlled by local governments and large SOEs, a increase in the share of TIC loans is associated with increase in the share of total short-term credits to the SOEs. In contrast, for the period between 9 and 99, the share of TIC loans is associated with the share of total short-term credits to the SOEs. In contrast, for the period between 9 and 99, the share of TIC loans is associated with the share of total short-term credits to the SOEs. In contrast, for the period between 19 and 19 and 19 as the share of TIC loans is associated with the share of TIC loans

loans is not correlated with the SOEs share of short-term credits.

To recap, before the mid-1 990s, China s banking system had become more decentrali ed with the expansion of the shadow banking sector that included the bank-affiliated TICs, CCs, and RCCs. These institutions were instrumental in directing credits to the more efficient non-state enterprises and therefore improving capital allocation. The banking reform launched in 99, however, reversed this process of decentrali ation. The shadow banking sector shrank as the CCs and RCCs were consolidated into large commercial banks under the control of local governments and the bank-affiliated TICs were shut down. The result is a recentrali ation of the banking system that had significant negative effect on the non-state sector s access to credits. Conse uently, the overall efficiency of capital allocation worsened since the mid- 990s.

To understand the reason behind the re-centrali ation of the banking system in the mid-1990s, one needs to review the macroeconomic crisis the Chinese central government faced around 199.

## 4.1. Growth and inflation cycles in China before 1996

Fig. plots for each year since 9 9 the annual in ation rate and the growth rate of money supply M in the previous year in China. rior to 99 China had recurring in ation problems. On the surface the in ation in China then was clearly a monetary phenomenon. There were recurring in ation problems because the central government periodically lost control of money supply growth during that period. The average growth rate of M was 22 percent between 9 9 and 99 , and the average in ation rate between 9 0 and 99 was more than 9 percent. Furthermore, the peak in ation rate in each cycle was getting higher over time, from . percent in 9 0 to 1. percent in 9 , . percent in 9 , and 2 .2 percent in 99 . Brandt and Zhu 2000 examine the

Another important reason for increased capital misallocation is the fiscal reform that was carried out at the same time when the banking reform started. By implementing a centrali ed value-added tax system, the fiscal reform put significantly more resources at the disposal of the central government, which used the resources for regional and industrial policies that effectively favored investments in the state sector. See Brandt, Tombe, and Zhu 20 for a more detailed analysis of this.



SOEs share of short-term non-agricultural loans Source author s calculation based on data from *Almanac of China's Finance and Banking*, various years.

reference of TICs in credit allocation ependent variable SOE s share of short-term credits mple period 9 –2009.		
Method	OLS	Tobit
TIC s loan share	-0.	
ost-9 dummy	0.   29999   .90   .	0.  90 2.9
TIC s loan share ost-9 dummy	2.11	2.2 0
Constant	0. 2 0.2 2.	0. 0.2 2.2 9
Number of observations	2	2
R-s uared	0.29	1
Ad usted. R-s uared	0.190	
arameter Stability Test Statistics	0. 29	
Structural Break	No	

e use cusum test to test parameter stability. The test statistic is smaller than 0.

critical value and unable to re ect the null hypothesis of no structural break.

fundamental causes of the in ation cycles the productivity difference between the state and non-state enterprises, the decentrali ation of the banking system, and the government s commitment to support inefficient state-owned enterprises. I brie y summari e their findings below.

ntil 99 , each year the central government had a detailed investment plan with most of the planned investment pro ects in the state sector. To finance the investments, the central government also had a detailed credit plan that re uired the state-owned banks to provide financing for pro ects in the investment plan. The central government understood that this investment and credit allocation process was highly inefficient, and therefore tried to decentrali e the credit allocation process by giving the state-owned banks some discretions in using their funds. owever, such discretions were only allowed during years when the in ation rate was low and the credit plan during those years were called indicative plan. Since average returns to investment were higher in the non-state sector than in the state sector, the state-owned banks under indicative plans had strong incentives to move funds to the nonbank lending institutions connected to them so that they could lend to high return pro ects in the non-state sector. This diversion of funds, however, often resulted in large funding gaps for completing pro ects within the central government s investment plan. To ensure the completion of planned investment pro ects in the state sector, then, the BC was often forced to either provide direct funding for those pro ects or provide loans to the state-owned banks so that they could provide funding for those pro ects. So, the diversions of funds by the state-owned banks to non-bank lending institutions had two effects. On the one hand, they provided the more efficient non-state sector with much needed capital, resulting in better capital allocation, higher aggregate TF and higher G growth. On the other hand, it forced



Money growth and in ation in China.

the BC to increase money supply and resulted in higher in ation. hen the in ation rate was moderate, the central government tolerated such diversions because of their positive effect on G growth. hen in ation accelerated, however, the central government was more concerned that high in ation might cause political instability, so controlling in ation became the policy priority. At those times, the central government changed the credit plan from indicative to administrative – taking away the discretions in use of funds from the state-owned banks and also cracking down on nonbank lending institutions as we discussed earlier. Such measures resulted in less efficient capital allocation and slower G growth, but they were effective in controlling diversions of funds by the state-owned banks and therefore eliminating the needs for BC to finance planned investment pro ects with money creation. In ation fell under the administrative plan. For the years prior to 99, there were pronounced policy cycles when central government policy was regularly switching between indicative and administrative plans. Both G growth and money supply growth uctuated in the same direction as a result of the policy cycles. Fig. plots the real G growth rates and in ation rates. G growth rates generally led in ation as it comoved with the money supply growth rates.



Growth and in ation in China Source China statistical yearbook and author s calculations.

# 4.2. The launch of fiscal, banking, and SOE reforms in 1994

In 99 , the combination of the diversions of funds by the state-owned banks to investments in more profitable non-state enterprises and the central government s strong commitment to support the employment in state-owned enterprises with money creation caused the in ation rate to reach a level that was never seen during the communist era and created strong expectation that in ation was out of control. To manage the macroeconomic crisis, Zhu Rong i, then the first vice-premier of the state council and a member of the standing committee of the Chinese Communist arty s political bureau, fired the incumbent head of the BC and appointed himself as the governor of China s central bank.

nder Zhu Rong i s leadership, the banking reform was launched in 99. One of the main ob ectives of the reform is to impose a tighter control of lending by the banking system and eliminate the need for money creation in funding investment pro ects in the state sector. This was done by shutting down all bank-affiliated TICs, severing the links between the state-owned banks and CCs and RCCs, and gradually consolidating CCs and RCCs into urban and rural commercial banks. The result of the banking reform is a much more centrali ed banking system that favors large firms at the expense of small and medium-si ed firms, especially those in the non-state sector.

To further control the in ation risk, Zhu Rong i also implemented a tax reform and started the SOE reform in 99 . rior to 99, tax collection was carried out by local governments and, as part of fi

tightened again in 20 0. As pointed out by Allen et al. 20 9 and Chen et al. 20 9, this tightening put large pressures on local governments or the special financing vehicles they set up, who needed to roll over the large amount of loans they borrowed from banks in 200 -09. This explains partly the rapid rise of shadow banking activities in China since 20 0.

Along with the tightening of monetary policy by the BC since 20 0, CBRC also tightened its enforcement of the loan-to-deposit ratio regulation. It switched from monitoring end-of-year loan-to-deposit ratios to end-of- uarter ratios at the end of 2009 then switched again to monitoring end-of-month ratios in late 20 0, and finally moved to monitoring daily average ratios in 20

achem and Song 20 medium-si ed banks. Fig. banks. rior to 20 and medium-si ed banks. Fig. banks. rior to 20 and medium-si ed banks. Fig. banks. rior to 20 and medium-si ed banks. The tightening of monetary policy also reduced overall li uidity in the interbank market and increased the risk of deposit shortfalls for the small- and medium-si ed banks. As a result, these small- and medium-si ed banks faced enormous pressure in either moving ioans off their balance sheets or looking for more funding sources. They did both through shadow banking activities. Chen et al., 20

There are other central government policies that have also contributed to the recent shadow banking growth. In attempts to reduce the risk of housing bubble and deal with the overcapacity issue, the central government has implemented policies in recent years that restrict bank lending to the real estate sector, overcapacity industries, and industries that use outdated polluting technologies. Since local governments in China rely heavily on land sales as a source of fiscal revenues and worry about employment implications of closing down local factories in overcapacity and polluting industries, they have strong incentives to use shadow banking as a way to get around the central government s restrictions and lend to these two types of firms.

Finally, Cong et al. 20 9 and uang, agano, and ani a 20 have shown that the 200 –2009 fiscal stimulus and its aftermath resulted in a shift of bank credits to SOEs and local governments. As a result, small- and medium- enterprises in the private sector faced even tighter credit constraints than before. ang et al. 20 argue that the shadow bank loans, especially the entrusted loans, could potentially be a channel through which productive private firms can secure credits by paying market determined interest rates. Indeed, evidence provided by Chen et al. 20 shows that a large portion of entrusted loans were directed to private firms, especially those in the real estate sector.

In summary, the literature on recent shadow banking activities points to the demand for credits by local governments, risky SOEs, real estate firms, and small- and medium-si ed private firms as the source for the rise of shadow banking loans. ow do the shadow banking loans actually affect investment allocation in the real economy I next use the provincial data on shadow banking loans and investment allocation to examine this uestion.

Starting in 20 , the BC started to publish the total social financing and its component for all of the provinces in China in the previous year. So, the data on shadow banking activity by province currently available are for the years starting 20 . For each province, I calculat the ratios of three ma or loans through shadow banking activities – entrusted loans, trust loans, and bankers acceptances – to bank loans, respectively. From the *Fixed Asset Investment Yearbook* published by China s National Bureau of Statistics NBS , I also calculate by province the shares of fixed asset investment in real estate, infrastructure utilities, transportation, storage and postal services; and water, environment and public facility management , state-owned sector, and private sector, respectively. The data on investment allocation are currently available up to 20 . So, I construct a panel dataset that consists of the investment allocation variables from 20 to 20 .

Table reports panel regressions of each of the investment shares on the previous year s three shadow banking variables. The

Shadow bank lending and sample provinces and ependent variables sha ear fixed effect Only N	l investment alle years 20 – res of total fixed ERI index .	ocation 20 I-asset investmen	ıt					
	OLS Regressi	on			14	Tobit Regression		
		2		1				1
ariables	Real estate	Infrastructure	State	rivate	Real estate	Infrastructure	State	rivate
Entrust loan t-	0.29	0.0	0.0 02	-0.2 0	0. 00	0.0 9	0.0 2	-0.2
	0.0 2	0.0	0.0	0.0 2	0.0 9	0.0	0.0	0.0
Trust loan t-	0.0	0.0 09	0.0 2	- <b>0</b> .	0.0	0.0	0.0 9	-0.
	0.0 9	0.029	0.0	0.0 2	0.0 11	0.02	0.0	0.0 9
BankAcceptance loan t-	0.0 0	-0.0   9	-0.0 0	-0. 22	0.0 02	-0.0 0	-0.0 99	-0. 2
	0.0	0.0	0.0 2	0.0	0.0	0.0	0.0	0.0
Marketi ation	0.0l 2	1-0.02 I	-0.0	<b>ø.</b> øl	0.0 2	-0.02	-0.0   9	ø.ol
	0.00	0.002 0	0.00 0	0.00 2	0.00 9	0.002 9	0.00	0.00 0
Constant	0.0	0. 9	0. 0	0. 9	0.0 0	0. 2	0. 9	0.09
1	0.29	0.0	0.0 02	-0.2 0	0.00	0.0 9	0.0 2l	-0.2
ear fixed effect								
rovince fixed effect	N	N	N	N	N	N	N	N
Observations	2	2	2	2	2	2	2	2
R-s uared	0.	0.	0.9	0.2				

Robust standard errors in parentheses.

p < 0.0, p < 0.0, p < 0.1.

lagged independent variables are used to reduce potential endogeneity problems. Since investment allocation may vary across provinces depending on their degree of marketi ation, the 201 Index of Marketi ation the latest year available developed by the National Economic Research Institute Fan, ang, and Zhu, 201 is used as a control. The regressions also controls for year fixed effects. Given that the dependent variables are shares between 0 and 1, Table reports results from both the OLS and Tobit regressions, and the robust standard errors are reported in parentheses. The two methods yield similar results. I summari e the main findings below.

*Entrusted Loans* In both regressions, a province with a higher entrusted loan ratio is associated with a higher real estate investment share, but lower private sector investment share. These correlations are highly significant. Since many real estate firms are private firms, the result shows that the entrusted loans did help some private firms—those in the real estate sector—getting access to credits, as suggested by ang et al.

Shadow bank lending and i	investment allo	ocation with pro	vince fixed e	ffect .		T	1	
	OLS Regressio	on 2			Tobit Regress	ion		
ariables	Real estate	Infrastructure	State	rivate	Real estate	Infrastructure	State	rivate
Entrust loan t-	0.0	-0.0	0.09	-0.0	0.029	-0.0 9	0.019	-0.0 0
	0.0	0.0	0.02	0.0 2	0.0	0.0	0.02	0.0 9
Trust loan t-	0.0	0.00 9	-0.0 02	0.02	0.0	0.0020	-0.0 9	0.02
	0.019	0.0 2	0.0292	0.0	0.0	0.0	0.01	0.0
BankAcceptance loan t-	ó.ol I	ø.02l o	<b>0.022</b>	-0.0	<b>0</b> .0 0	<b>6</b> .0	0.02	-0.0 ol
	0.022	0.020	0.00	0.022	0.0202	0.01 9	0.02	0.0202
Constant	0.2	0.2 2	0. I	0.299	0. I	0.210	0. 02	0.02
	0.00 2	0.00	0.00 09	0.00	0.01 9	0.001 0	0.001 9	0.00
ear fixed effect								
rovince fixed effect								
Observations	12	2	2	2	2	2	2	2
R-s uared	0.9 0	0.9	0.9	0.9 2				

Robust standard errors in parentheses.

p < 0.0, p < 0.0, p < 0.1.

effort in collecting more detailed institutional level micro-data to examine the relationship between shadow banking activities and real activities in a more granular way. owever, I hope the historical time-series evidence and the cross-province evidence of recent years I provided in this paper form a coherent narrative about the evolution of China s banking system and its real impacts, and shed some light on the role of shadow banking activities on capital allocation in China.

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