



Hong Fu and Calum G. Turvey

**THE EVOLUTION OF
AGRICULTURAL CREDIT
DURING CHINA'S
REPUBLICAN ERA,
1912–1949**



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PREFACE

For sure the modern student of agricultural finance and rural credit in China, and the thousands of Chinese engaged in rural and agricultural credit in the modern era, might well be puzzled about the dizzying pace of reform and wonder how China's system of rural credit evolved to its current state in the first place. Indeed, this is what has led us to prepare this book. The story of rural credit in China is evolutionary but few scholars in the modern era have paid attention to developments in agricultural credit before 1949. It is a story of poverty and inefficiency across China's agricultural economy, and the realization that for China to become a force in the world economy, it needed to strengthen its agricultural and industrial base and modernize its financial institutions. Throughout the Republican era, 1912–49 natural disasters, political tumult, warlords and banditry, the rise of communism, the Northern Expedition, and Japanese imperialism all conspired against China's agricultural, industrial and financial development. To even attempt to understand agricultural credit under these conditions was futile. There were simply too many moving parts with adversity after adversity springing up here and there in an endless pattern of economic subterfuge.

The authors of this book met in Zhejiang in 2015 at a conference of agricultural economists. Hong (Holly) Fu, an associate professor at Shandong University of Finance and Economics in Jinan, was interested in visiting Cornell University in 2016 to study agricultural credit and insurance with the second author Calum Turvey, who by then had written extensively on the subject. We decided to meet in Zhejiang to discuss research collaboration, where we discovered a mutual interest in Chinese

agricultural credit history. Turvey had begun investigating credit history while working on an analysis of credit demand using newly discovered data that John Lossing Buck used in his famous 1937 book *Land Utilization in China*. That John Lossing Buck was the husband of Pearl S. Buck, the 1937 Nobel Laureate in Literature for her book *The Good Earth*, and that both Bucks were Cornell Alumni, made this story even more intriguing. Since at least 2014 Turvey had been pouring over history books and news reports from *China Weekly Review* to make sense of credit conditions during Buck's 1929–33 study period. To a foreigner, trained as an agricultural economist, and specializing in agricultural finance, this was a futile attempt at entering even the lowest rungs of sinology. But in a remarkable turn of events, our conversation in Zhejiang wandered away from modern day agricultural finance and insurance, to other matters, and it was then that Holly explained that her background was not in agricultural insurance or even modern day finance, but that her PhD dissertation at Nankai University department of finance was on the history of agricultural credit during the Republican era, and that she had published a book in Chinese on the subject. This was an astonishing coincidence, and it was decided that when Holly travelled to Ithaca we would dabble in history, while doing some work on finance and insurance. We did no work on finance and insurance. Instead, Holly was drawn into the research on agricultural credit demand using Buck's data, providing some translations from her book. We then expanded our scope to the document archives in the Asian Collection at Cornell University libraries and the National Archives at Beijing and Nanjing. Soon, simple questions became complex. Chapters 2 and 3 for example came about when Turvey rhetorically asked how conditions in 1921 agriculture could be so bad. Holly recalled a paper she once read on high-level equilibrium traps by Mark Elvin, so with no background in growth theory to start, we finished with a model describing fractional poverty traps. Likewise, with a rhetorical question about how agriculture survived in Japanese controlled areas, Holly pointed to the Luxi Bank in Shandong that issued its own currency in communist-held base areas. This gave us Chap. 11. And so it went until we decided that we should produce this book which Palgrave Macmillan decided to publish.

In preparing the book we should warn the reader, as one of the book reviewers warned us, that we are better economists than we are sinologists. This is correct. We are not trained as historians, nor can we be called sinologists. For example, why would we place such heavy reliance on Reverend DuHalde, or Malthus or Ricardo in Chaps. 2 and 3 when there might be

much better descriptions of history prepared by modern historians? The reason was to note when these works were written; that these writers were describing contemporaneous conditions as they observed them at that time and we preferred the original source for effect. Nonetheless, we have adhered to the same documentation principles and style as many of the historians that we read, while also adhering to the documentation principles and style of agricultural economists. As we discuss below, we have opted for narrative rather than mathematics or economic theory with only a few departures.

As for form, we have used the modern terms for names and places, even though there are still many spellings used such as Sichuan versus Szechuan, Xi'an versus Xian and so on. Where we are not sure we italicize the name or place with its original spelling. On weights and measures we use modern units as best we can, but for traditional Chinese terms we use endnotes to describe the measures. Here and there we include the original Chinese characters when there is some dispute over their direct translation or when they might have multiple meanings. Hopefully, if we ever erred in translation, we are correct in context.

Our opening chapter discusses agricultural credit in the modern era and its developments since the end of the Mao era with the 1978 reforms. The history of agricultural credit between 1950 and 1978 has also not been told, but we do make a link between our story up to 1949 and the agricultural credit reforms of the past 40 years. Things are changing so quick that we could probably prepare a book entirely on this era, so what we provide is at best a synopsis of current conditions. This includes Rural Credit Cooperatives, the Agricultural Bank of China, the path to reforms after the turn of the century, agricultural credit conditions, the role of credit in inclusive rural transformation, and the expansion of Village Banks, joint stock banks, the conversion of Rural Credit Cooperatives to Rural Credit Banks, lending only companies and so on. We provide several appendices to Chap. 1 that include time series on agricultural credit from 1978 through 2016. We thank Hexian Wang, a MSc student at Cornell University for compiling this data from archival sources, gazetteers, and obscure statistical reports. We think this may be of use to modern students and scholars of agricultural credit as we are unaware of any data records of this sort published elsewhere.

As for the remainder of the book, understanding China's approach to rural credit in the Republican era requires an understanding of the conditions facing rural China over this period, and those times—as will be

presented in detail—were very difficult with drought, floods, famine, bandits, communist insurgencies, KMT (Kuomintang) conflicts, Japanese expansionism, and other factors. Using primary data and papers written in contemporaneous time from both Chinese and English sources we piece together this story. We use the word ‘story’ with purpose. While our academic positions at Shandong University of Finance and Economics and Cornell University are rooted in agricultural and financial economics, we no doubt make economics as the focal point. But the economics makes little sense without fully understanding the conditions of rural credit prior to the end of the Qing in 1911, the disarray from the warlord period between 1912 and 1928, the era of reconstruction that followed the Northern expedition to unify China in 1928, Japanese aggression not only in Manchuria in 1930 and 1931, but the Sino-Japanese war from 1937 to 1945, and the war of independence between 1945 and 1949. Neither can we ignore the impacts of China’s dynastic rule over the previous 4000 years. China, in 1921, may well have settled into a low-level equilibrium trap that bound the vast majority of Chinese farmers to conditions of poverty or sub-poverty. It is important to understand how China got to the state it was in 1921 when the International China Famine Relief Commission first proposed credit cooperatives as a means to extract farmers from persistent poverty. The alarm over rural conditions resulting from famine and floods requires some narrative on the frequency, intensity, and nature of the causes of famine and we include that as part of the story as well. Likewise, there are many personalities involved including Timothy Richards, an early advocate of international famine relief, and academics such as J.B. Tayler, John Lossing Buck, and Paul Hsu, and institutions such as Nanking University and Nankai University that were incredibly important in the push for rural credit, and deserve some space and discussion.

Although we wanted to present all this in story form, there are several places where we found no way around some mathematics to illustrate our point. We hope that our narrative is strong enough that this can be skipped by non-economists without losing the greater points made. In Chap. 2 we ask the question as to how China’s agriculture got to the point it was in 1921. We elected to tell this story through the lens of equilibrium traps and take a Malthusian or neo-Malthusian approach relying on the early works of R. Nurkse, R.R. Nelson, M. Elvin, R. Sinha, and P. Huang among others. We incorporate Justin Y. Lin’s ideas about the so-called ‘Needham Trap’ and extend the discussion even further to address the

more recent attraction to the idea of poverty traps. In Chap. 2 we provide a softer discussion examining various aspects of dynastic rule and grading emperors on whether they were good for agriculture or bad for agriculture, and we examine the historical pattern in drought, flood, and famine, all with the same intent of trying to understand the state of agriculture and agricultural credit at the turn of the twentieth century. On examining the history in Chap. 2 and the economics of equilibrium and poverty traps in Chap. 3, we were not satisfied that we had enough of an explanation of how poverty traps happened. The equilibrium trap models are short-run models which might explain a state of poverty at a moment in time, but did not explain how such things could arise or persist. All the ingredients for an economic interpretation were in place except for the explicit consideration of risk as an exogenous force.

Thus, in Chap. 3 we tackled the problem of taking a classical model of population, land, productivity, and growth, and added to it certain stochastic processes, presenting a new, or at least modified, model of agricultural and population growth as an Ito process. Drawing on the limited data in Huang and Perkins we use Monte Carlo methods to simulate China's agricultural economy. Population growth, land limitations, and agricultural innovation all combine in a dynamic and uncertain way to affect the path of economic growth. For the most part we present the story graphically, and then explore, with some liberties, the effects of dynastic rule on agriculture and how calamities combined with dynastic rule might offer an explanation. From an economist point of view we felt that additional depth was required to merge our presentation with the modern stream of literature following from Malthus to equilibrium and poverty traps. So, we then went a step further and using certain properties of fractional Brownian motion, we provide measures of the Hurst coefficient and show that population growth and certain ratios such as output to population have fractional properties. There will never be enough real data to prove our assertion beyond the mathematical abstraction, but this is an important advance. Brent Swallow and Chris Barrett have argued recently that poverty traps are fractal. We illustrate this in a different, dynamic, and stochastic way. When measured as the expanse of time in which agricultural output falls below a certain level of subsistence, this is shown to be of a mean reverting form with periods of poverty so measured coming and going in Malthusian form as in a pattern of excursions. As stated, we did not intend when we started this book to end a chapter with a discourse on stochastic dynamic equations and fractional Brownian

motion, but that is where the story led us, and we think this has advanced the discussions around population, land, and agricultural productivity in a meaningful way that might advance the study of low-level equilibrium and fractional poverty traps.

The only other chapter in which we use mathematics in a more than casual way is in Chap. 6 where we present some detailed econometric estimation of rural credit demand and supply using John Lossing Buck's individual household data which he used to compile his book *Land Use in China* in 1937. Around the year 2000 several cartons were discovered in Nanjing holding the original, handwritten, worksheets from Buck's study. Much credit goes to Professor Hua Hu and his students at Nanjing Agricultural University who spent hundreds of hours digitizing and collating the data before handing the spreadsheets to us for analysis, and meeting with Turvey and his Cornell students in Nanjing on several occasions. Dizi Chang and Ziang (June) Cheng, both Master of Science students at Cornell University, did a huge amount of the leg work and econometric estimation as part of their theses. This we believe is the first econometric analysis of credit demand during this period and represents original work. In order to investigate credit relationships between 1929 and 1933 we settled on a three-equation econometric model and for academic purposes felt we must present and discuss the model structure in economic and econometric terms. Again, we hope that we present to the casual reader without advanced understanding of demand elasticities and econometrics a readable narrative that gets to the points of historical significance without muddying the waters too much.

Leading up to this we discuss historical development in agricultural credit in Chap. 4 which we date back to 202 B.C. with the formation of granaries as a means of storage to smooth consumption and to make loans. This evolved into the Green Sprouts policy around 1058 A.D. which made loans to farmers at planting, to be repaid at harvest. We explore and present in detail a number of money-loan societies (*Qian Hui*), the ancient precursor to the modern day Rotating Savings and Credit Associations (ROSCA). These presented various forms of informal credit, including the beginnings of the pawn shop. We also present the origination of formal financial institutions in the form of Native Banks.

In Chap. 5 we explore the state of agricultural finance in the early Warlord period of the Republican era. We discuss there (and elsewhere in the book) the maddening currency and measures that described China at the time and the struggles to develop a modern financial system by the

new governments. Notable in this period was the development of the Agricultural and Industrial Banks that were chartered not only to deal with agriculturally related businesses but also to promote credit associations and rural credit cooperatives. The Agricultural and Industrial Banks floundered in this goal, and had largely left the market by 1923, but by 1923 in the face of the 1921 famine a different economic force was pushing for agricultural credit.

In Chap. 7 we discuss the push for agricultural credit cooperatives by the International China Famine Relief Commission. This discussion includes a background to famine and a history of the International China Famine Relief Commission and its promotion of credit cooperatives. Based on the successful introduction of credit societies and cooperatives by the College of Agriculture at Nanking University, by the late 1920s and early 1930s cooperative credit societies were to be the backbone of agricultural finance in China. Chapters 8 and 9 discuss the formalization of credit cooperatives as promoted under Rural Reconstruction by the KMT and further development for a more centralized and national approach to agricultural credit via the so-called 'blueprint' which guided efforts, without too much success, between 1929 and 1933. Chapter 10 discusses more broadly the effects of these efforts on the growth of credit cooperatives, including the consequences and impacts of the Sino-Japanese war on cooperative development.

In terms of the war, we became curious as to how the communists in the border and base regions around and within Japanese-held territories provided credit access to farmers. In Chap. 14 we discuss the general impact of the war in greater detail, but early on we noted that many of the cooperative credit societies that were formed before the war had all but disappeared after the war started. Yet story after story appeared of robust agricultural economies within communist-held territories. In Chap. 11 we explore this issue. Using archival information and searching through gazetteers we were able to piece together an interesting story of currency and credit in base and border regions. Currency and credit worked hand in hand, but the idea that border currency could coexist with Chinese national currency and Japanese puppet currency provides an interesting backdrop to the credit story, and one perhaps not well known outside of Chinese academic circles.

China's efforts were not limited to cooperative credit. Central to the 'blueprint' was the formation of the Farmers Bank of China to which we dedicate Chap. 12. In Chap. 13 we discuss the 1936 initiative of *Nong Ben*

Ju which was implemented to consolidate the multi-thronged activities of the KMT towards agriculture including formalizing agricultural credit and integrating agricultural credit with the formal financial markets. The literal interpretation of *Nong Ben Ju* is 'Farm Credit Bureau' but we have opted to use the term in its programmatic sense of building institutions. We continue then with a discussion of the policies and debates that followed including discussions as to whether China should follow a system such as the cooperative Farm Credit System as developed in the United States.

Chapter 14 concludes the book. There we discuss in detail the effects of the war on agricultural credit. Here we rely on a study of Sichuan by Buck. But even despite the war, its effect on agriculture and agricultural productivity, hyperinflation and so on, the KMT continued to press forward with financial and credit reforms. These efforts were of course blunted by the ensuing civil war and collapse of the monetary system in 1948 and 1949, but the basic structure of agricultural credit cooperatives was retained as the embryo to the modern Rural Credit Cooperatives, and the basic design for policy banks such as the Agricultural Bank of China.

Finally, we have some acknowledgements. On the financial side we are grateful for the W.I. Myers Endowment fund assigned to Turvey's professorship. It is somewhat fitting that W.I. Myers was not only appointed by President Franklin D. Roosevelt as the first Governor of the Farm Credit System, but he was also the academic advisor to John Lossing Buck's Master of Science thesis from Cornell in 1923. We are also grateful for the receipt of a grant from Jeffrey Sean Lehman Fund for Scholarly Exchange with China, also awarded through Cornell University for providing the funds to travel and prepare this book and other upcoming works on this topic. We are also grateful to the Shandong Provincial Natural Science Foundation, China for giving us a chance to work together on rural credit and the International Cooperation Program for Excellent Scholars Grant from Shandong Provincial Education Department, which supported Hong's research at Cornell as a visiting scholar. Turvey also owes many Chinese colleagues a debt of gratitude. Professor Pei Guo at China Agricultural University introduced him to the world of rural credit in China in 2006. Pei, along with Professor Guangwen He from China Agricultural University and Jiujiu Ma from Renmin University spent countless days traveling with him in rural areas. Professor Rong Kong of Northwest Agriculture and Forestry University has been indispensable in Turvey's research, organizing field research, providing graduate students, preparing and translating survey instruments, and coauthoring somewhere

in the neighborhood of 20 scholarly journal articles together. Professor Xueping Xiong, Huazhong Agricultural University, worked with Turvey on understanding the problems of financial inclusion in China. Special thanks to Dr. Yanling Peng, who started working with us as a masters student, spent a year as a visiting student at Cornell University, and who is now an assistant professor at Sichuan Agricultural University. Also thanks to Tian (Katrina) Liu a doctoral student at China Agricultural University, who also visited Cornell as a student, provided some data, and provided very helpful comments on Chap. 1. Lastly we would like to thanks Allison Neuburger and Elizabeth Graber at Palgrave Macmillan for shepherding this book through the review and publication process.

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Current Conditions of Rural Credit in China

1.1 INTRODUCTION

This book tells the story of major developments in the provision of agricultural credit in China with a particular emphasis on the Republican era between 1912 and 1949. We are motivated by the rapid expansion of agricultural credit and institutions in the post-1978 modern era to provide some semblance of understanding about agricultural credit in China more generally, and economic history provides a perspective for any student or practitioner in the agricultural finance space. This is particularly true since the reforms around 2003 that allowed the conversion of Rural Credit Cooperatives (RCCs) to Rural Credit Banks and Rural Cooperative Banks (RCBs) which may well see the era of the RCC soon coming to an end. The developments in RCCs in the modern era are usually attributed to reforms in the mid-1950s, but as our story tells, there was a thriving and growing industry of RCCs well before Chinese liberation. 1949 changed everything but the essential structure that was developed prior to liberation remained—that is, the heart of agricultural lending was to be based on cooperative principles, or at least some semblance of cooperative principles that was operational in the post-liberation economy.¹ The main

¹For an overview of agricultural conditions in post-1949 China see Buck, J.L., O.L. Dawson and Yuan-li Wu. (1966). “Food and Agriculture in Communist China” Hoover Institute/Fredrick A. Praeger Publishers, Washington DC/NY NY.

difference, as far as we can tell given the historical record, is that between 1949 and 1950 rural credit societies remained intact in many locations in China but only in skeletal form. Rural credit societies promoted by the Kuomintang (KMT) disappeared at liberation, either dissolved or bankrupt as the Chinese national currency collapsed. But a few lingered on, reconstituting themselves by 1950 as pilots for the establishment of rural credit cooperation and Credit Unions and expanding thereafter.² The Communist Party of China (CPC) had experience in developing rural cooperation. During the early 1930s the communists formed credit societies in their soviets, and to a significant degree this provided encouragement to the KMT to follow suit under rural reconstruction. This in turn started the process of formalizing agricultural credit in China as a matter of policy, poverty alleviation, and agricultural productivity. In 1954 the CPC declared all private lenders as usurers and started pushing for Rural Credit Cooperatives. The 1958 formation consolidated and renamed these societies as Rural Credit Cooperatives and the RCCs were for many years the backbone of agricultural credit.

Of course the agricultural economies of 1912–49, 1950–77, and 1978 to the present are incomparable at so many levels. Even in the modern era the period between 1978 and 2003 differs remarkably from the period after 2003, and even more so after 2006. Nonetheless, to understand the current credit environment, where it stands currently, and how transformations in the financial sector affects agriculture, it is also important to understand its roots—the circumstances that brought about credit access in the Republican era, the evolution of institutions, and their impact on agriculture all have relevance in the modern era.

For example, of the many growth challenges facing the People's Republic of China one of the most critical is the urban-rural divide and an increasing income disparity between urban and rural households. For China to proceed in a sustainable growth pattern there must be an alignment between the rapidly growing industrial sector and agricultural production, productivity and urban-rural household income equality. Given the household responsibility system and the small allocations of land use rights (LUR) the opportunities for Chinese farmers to make a reasonable living from the land are few. However, one mechanism that can leverage

²Mingming Chang. (2006). Performance and Insufficiency: A Historical Investigation of Loan Activities of Rural Credit Cooperatives in the Early Years of New China – Taking Hubei, Hunan, Jiangxi Provinces as Center, in *Chinese Agricultural History*, No.3.

productivity growth is access to credit at a reasonable and affordable rate. On this there has been progress, especially since the implementation of microcredit loans through rural credit cooperatives and the Agricultural Bank of China since 2003. In Eastern provinces such as Shandong, Jiangxi, Guangxi and others, secondary processing of food has developed for domestic consumption and export. Forestry endowments have led to cottage industries and creditworthy villages are binding together to produce goods for export while horizontal and vertical relationships are developing in numerous provinces between fast-growing business entities and thousands of farm households. China's financial institutions and policies need to be adaptive to modern realities but in responding to these realities it is necessary that they address the institutional heritage that has led to the present; and when deemed inefficient, correct as much as is possible.

The current landscape of rural credit includes not only an expanded role for policy banks such as the Agricultural Development Bank of China, but also changes in regulations and oversight of existing banks such as the Agricultural Bank of China (ABC) and Rural Credit Cooperatives (RCCs). Since 2003 China has not only seen an initial public offering of shares in the ABC, opportunities for RCCs to convert to rural commercial banks (RCB) with joint-stock capital from other individual investors and financial institutions, but also a myriad of different financial institutions, with some accepting deposits and others being joint-stock companies that provide lending-only services.

The new era of institutional reform in China's credit markets is designed to increase capital flows into rural areas and improve financial deepening.^{3,4} Of particular interest is the provision of credit to agriculture. However, an 'agricultural loan' in rural China does not necessarily mean that loans are being made to farm households, but rather to businesses and individuals in an agricultural region. Nonetheless, the expansionary policy has several modes of operation including centrally regulated interest rates and interest rate ceilings designed to induce demand at potentially lower rates than would otherwise be offered. This is a sensible policy. In credit demand studies we have found that as interest rates fall, demand for credit becomes

³ Shaw, E.S. (1973). *Financial Deepening in Economic Development*, Oxford University Press, New York, NY.

Mckinnon, R.I. (1973). *Money and Capital in Economic Development*, Brookings Institution, Washington, DC.

⁴ He, L. and C.G. Turvey. (2009). Financial Repression in China's agricultural economy. *China Agricultural Economics Review*. 1(3):260–274.

more elastic. Increased supply is encouraged by interest rate subsidies paid directly to lenders in direct proportion to increases in agricultural loans over the previous year. But it is also hoped that by expanding the number and types of financial institutions in rural areas there will be a degree of down-scaling in which increased supply will find its way to farm households. Additionally, provincial ministries of agriculture in partnership with counties and the Peoples Bank of China will establish specific funding arrangements with RCCs for targeted development. These include capital for the development of self-help cooperatives or direct interest rate subsidies for farmers' expansion into new areas of agriculture including fruit orchards (e.g. converting grain land to kiwi orchards) and greenhouses for vegetable production.

To provide at least some context, this chapter provides an overview of developments in agricultural credit from 1978 to the present. We start at 1978 and discuss the reforms through 2003. In 2003 rural credit reforms took on a sense of urgency and by 2006 they were the number one policy objective of the Chinese government. We then provide an overview of credit conditions by providing a review of some of our own field research and surveys in China, starting around 2007.

1.1.1 Financial Reform and Transition in China, 1978–2003

China's financial reforms in the years following the introduction of the household responsibility system in 1978 and its move towards a market-based agricultural economy were haphazard at best. If China's leaders were striving towards the creation of a modern financial sector reform it could not, by Western standards, be viewed as a success.⁵ But, as Shen et al. (2010) explain a comparison to Western standards is not the relevant point: the relevant point is how it evolved given the state of the financial sector at the beginning of the reform period. Indeed, financial policy in the early reform period was haphazard and piecemeal responding mostly to contemporaneous policy initiatives which in the rural setting was the establishment and financing of township and village enterprises (TVEs). Overt policies directed towards financial sector development of the scale and scope of Western democracies did not come into force until about

⁵This section is abstracted largely from Shen, Minggao, Jikun Huang, Lingxiu Zhang and S. Rozelle. (2010). "Financial Reform and Transition in China: A Study of the Evolution of Banks in Rural China". *Agricultural Finance Review* 70(3):305–322.