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## Journal of Empirical Finance

journal homepage: www.elsevier.com/locate/jempfin



# Are there diversification benefits of increasing noninterest income in the Chinese banking industry?



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#### ARTICLE INFO

Article history:
Received 3 August 2010
Received in revised form 2 September 2013
Accepted 17 October 2013
Available online 25 October 2013

JEL classification: G21 G32

Keywords: Net interest income Noninterest income Income diversification Bank risk

#### ABSTRACT

This paper assesses the potential diversification benefits of the increasing reliance on nontraditional business activities based on data from the Chinese banking industry in 1986–2008. At the aggregate level, there are diversification benefits of the increase in noninterest income. However, noninterest income has higher volatility and cyclicality than net interest income, and the marginal benefit of diversification decreases with the increase in noninterest income. At the bank level, the correlation coefficients of the growth rates of net interest income and noninterest income are mostly negative, which also suggests that there are diversification benefits of increasing the noninterest income. However, further model analysis indicates that the effect of the noninterest income share on the Chinese banking industry's revenue and risk is not significant. Overall, our findings suggest that noninterest income diversifies bank revenue, but increased reliance on noninterest income may worsen the risk/return trade-off for the Chinese banking industry.

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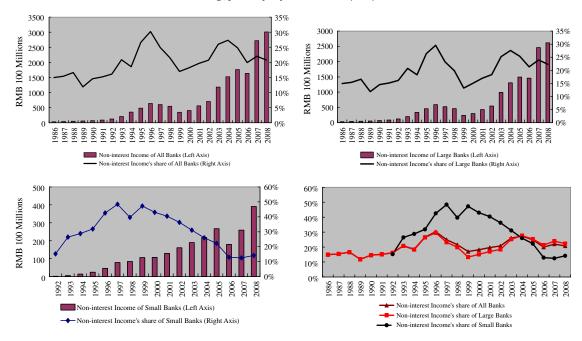
#### 1. Introduction

Over the years, traditional interest income has been the main source of revenue for Chinese commercial banks. However, the Chinese banking industry has been steadily shifting away from traditional sources of revenue and toward the multiple-revenue structure of both net interest income and noninterest income. This shift is a result of interest rate liberalization, financial disintermediation, obvious trends in banking comprehensive operation, and the implementation of a more stringent financial supervision policy. Fig. 1 shows the changes in noninterest income and its share of net operating revenue (defined as net interest income plus noninterest income) from 1986 to 2008.

Fig. 1 shows that the absolute scale of the noninterest income of the Chinese banking industry has grown since the 1980s, but the relative contribution of noninterest income to the net operating revenue has experienced some fluctuations. Overall, the share increased from the 1980s (14.97% in 1986) to the mid-1990s (30.23% in 1996) before decreasing again (16.99% in 1999). It increased again in the first few years of the 2000s (27.34% in 2004) and then decreased after 2004 (20.76% in 2008). Furthermore, the average share of noninterest income during 2000–2008 was higher than that during 1986–1999 (22.17% vs. 18.9%), which revealed the increasing tendency of noninterest income in the Chinese banking industry. Moreover, small banks had a radically fluctuating share of noninterest income, from 15.21% (1992) up to 48.39% (1997), down to 39.64% (1998), up to 47.22% (1999), and then down to 14.13% (2008).

The obvious decreasing trend of the proportion of noninterest income of small banks after 1999 was mainly attributed to the interest rate regulation for deposits and loans. The adjustment of benchmark interest rates, including those for deposits and loans, by the central bank (The People's Bank of China) can directly affect the net interest income of commercial banks, especially small banks, which are more sensitive to interest rate adjustments because of their small size and high liberalization. The benchmark

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**Note:** (1) Large banks are those banks with assets greater than ¥3 trillion (in 2000 RMB), including the Industrial and Commercial Bank of China (ICBC), Agricultural Bank of China (ABC), Bank of China (BOC), China Construction Bank (CCB), and Bank of Communication (BOCOM). Small banks are those banks with assets below ¥3 trillion, including the China Merchants Bank (CMB), China Industrial Bank (CIB), China Minsheng Bank Corp., Ltd. (CMBC), Shenzhen Development Bank (SDB), China CITIC Bank (CNCB), Hua Xia Bank (HXB), Shanghai Pudong Development Bank (SPDB), Guangdong Development Bank (GDB), China Everbright Bank (CEB), and Evergrowing Bank (EB). (2) Net operating income = Net interest income + non-interest income. (3) Due to data completion restrictions, the data sets for medium and small banks begin in 1992. Source: "China's Financial Statistics Yearbook, 1986-2007" and the 2008 Annual Report of each banks.

Fig. 1. Changes in non-interest income and their shares in net operating revenue (1986–2008). *Note*: (1) Large banks are those banks with assets greater than ¥3 trillion (in 2000 RMB), including the Industrial and Commercial Bank of China (ICBC), Agricultural Bank of China (ABC), Bank of China (BOC), China Construction Bank (CCB), and Bank of Communication (BOCOM). Small banks are those banks with assets below ¥3 trillion, including the China Merchants Bank (CMB), China Industrial Bank (CIB), China Minsheng Bank Corp., Ltd. (CMBC), Shenzhen Development Bank (SDB), China CITIC Bank (CNCB), Hua Xia Bank (HXB), Shanghai Pudong Development Bank (SPDB), Guangdong Development Bank (GDB), China Everbright Bank (CEB), and Evergrowing Bank (EB). (2) Net operating income = Net interest income + non-interest income. (3) Due to data completion restrictions, the data sets for medium and small banks begin in 1992. Source: "China's Financial Statistics Yearbook, 1986–2007" and the 2008 Annual Report of each bank.

interest spread in China gradually increased but was at a low level in the 1990s. In the ten-year period from 1990 to 1999, the one-, three, and five-year benchmark interest spreads were 1.55%, 1.47%, and 1.41%, respectively. However, the benchmark interest spread has remained high since the turn of the century. In the seven-year period from 2002 to 2008, the one-, three-, and five-year benchmark interest spreads were 3.33%, 2.32%, and 2.09%, respectively. These trends can be attributed to the Chinese government's strict control of the interest spread to reduce the cost borne by state-owned enterprises during the 1980s and early 1990s to ensure the success of the economic system reform in China. In 1994, the Chinese government began to drive the reform of the state-owned specialized bank, and the profit-maximum goal became the major goal of bank operation. After this shift, the interest spread gradually increased. During 2002 to 2007 in particular, to cool down the overheated economy, the Chinese government raised the benchmark deposit and lending rates ten times, and the interest spread became very high. Fig. 2 shows the changes of benchmark interest spread from 1988 to 2008 in China.

As the benchmark interest rates spread remained low in the 1990s, the scale of net interest income was relatively small, and although the scale of noninterest income was moderate, its share was relatively high. After 2000, as a result of the high benchmark interest spread, the net interest income of commercial banks increased substantially. Although the absolute scale of noninterest income increased compared with that in 1990s, the proportion of noninterest income in the net operating revenue continued to decline. That is, the small scale of net interest income led to the high proportion of noninterest income in small banks in the 1990s. In contrast, although the share of noninterest income decreased in the 21st century due to financial

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