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Applied Financial Economics ›

Volume 20, 2010 - Issue 20

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Determinants of financial performance in Chinese banking

Shelagh A. Heffernan & Xiaoqing Fu

Pages 1585-1600 | Published online: 21 Sep 2010

Cite this article https://doi.org/10.1080/09603107.2010.505553

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Abstract

China's banking system has undergone gradual reform since 1978, with a view to improving efficiency and resource allocation. Recent reforms have focused on allowing banks to list some shares on domestic and foreign exchanges, greater foreign equity participation in Chinese banks and the establishment of new rural financial institutions. To assess whether these objectives have been achieved, this study looks at how well different types of Chinese banks have performed between 1999 and 2006, and tests for the factors influencing performance. It also evaluates four measures of performance to identify which one, if any, is superior. The independent variables include the standard financial ratios, those which reflect more recent reforms (listing, bank type, the extent

of foreign ownership) and macroeconomic variables. The results suggest Economic Value Added (EVA) and the Net Interest Margin (NIM) do better than the more conventional measures of profitability, namely Return On Average Equity (ROAE) and Return On Average Assets (ROAA). Some macroeconomic variables and financial ratios are significant with the expected signs. Though the type of bank is influential, bank size is not. Neither the percentage of foreign ownership nor bank listings has a discernable effect.

Notes

[1] The Central Bank Law and the Commercial Bank Law.

[2] The equity participation of a single overseas financial institution in Chinese banks cannot exceed 20%. Source: CBRC (2003).

[3] Prior to these changes, the big four state-owned banks had high percentages of Nonperformance Loans (NPLs) stemming largely from loans made to state-owned enterprises. In 1997, they were re-capitalized via the issue of special government bonds (CNY270 bn or $32.5 bn), and their NPLs were transferred to four asset management companies. $60 bn drawn from foreign exchange reserves were injected into three of the big four. The Bank of China and China Construction Bank each received $22.5 bn in 2003; $15 bn went to the Industrial and Commercial Bank of China in 2005. For more detail on bank reforms, see Berger et al. (2009) and Fu and Heffernan (2009).

[4] The NFWC met three times, in 1997, 2002 and 2007. Organized by the State Council, the NFWC brings together key financial and political leaders from the National Development and Reform Commission, the Ministry of Finance, the People's Bank of China (PBC), regulatory and financial institutions, various ministries, provinces and municipalities. New policy and major targets are proposed for the next economic period – usually 5 years. For example, the decision to inject capital into three of the big four banks was taken at the meetings held in 1997 and 2002.

[5] Bonaccorsi di Patti and Hardy (2005) also report that new private domestic banks outperformed foreign-owned banks in some cases.

[6] The big four, nine of the 11 national joint-stocks, 16 city commercial banks (out of 113 at the end of the year 2003), six joint-venture banks and two foreign banks.

[7] The three policy banks were created to promote China's development objectives (e.g. infrastructure) and unlike the other banks are not expected to maximize profits. They are funded via the PBC and state bond issues.

[8] As reported in the Economist (1992).

[9] Weaver (2001) reports a response rate of 40%, or 29 firms.

[10] It is notable that no study in the management accounting literature adjusts for factor inputs. In the banking literature, only Fiordelisi (2007) standardizes EVA by capital invested.

[11] The CI rating in terms of domestic strength is applied here.

[12] The average long-term government bond yield is not available between 1999 and 2000. Since there were no changes in either the central bank or financial institution base rates between 1999 and 2001, this study used the 2001 average long-term government bond yield for these 2 years.

[13] Arellano and Bond (1991), Arellano and Bover (1995), Bond (2002), Baltagi (2005) and Baum (2006).

[14] Once lagged variables are introduced, the sample is reduced from 76 to 70 banks over 7 years (2000–2006), hence posing, potentially, a ‘large N, small T’ problem. Fixed individual effects could include the sample of banks sharing some time-invariant factors such as certain organizational and ownership structures; heteroscedasticity may be present because although the study only includes commercial banks, the differences among them is substantial, both in terms of size and business scope. For example, only the city and rural commercial banks are prohibited from setting up branches overseas. Autocorrelation could be a problem if current bank performance is correlated with past profitability to some degree. Or shocks affecting performance could be serially correlated and relative bank-specific factors (cost to income, capital to assets, etc.) might respond to these shocks. Thus, though the coefficient on the lagged dependent variable is not of direct interest, allowing for dynamics in the underlying process may be crucial for recovering consistent estimates of other parameters.

[15] The limited number of banks in the study meant only two lags could be tested; otherwise, instruments would exceed the number of banks. The one lag model generated the lowest Hansen test statistic when the dependent variables are EVA, ROAA or NIM. The two lag specification is slightly better for ROAE, with the respective Hansen test statistics almost the same at 30.1 and 32.5. But the signs on the lagged ROAE coefficients are counter-intuitive: positive for ROAE lagged by 1 year, but negative when lagged by 2 years. On this basis, we proceed with the one lag model.

[16] Arellano–Bond tests for Autoregression AR(1) and AR(2) in first differences. The test for no second-order serial correlation of the disturbances of the first-differenced equation is important for the consistency of the GMM estimator. In addition, the Hansen (1982) J test for the joint validity of the moment conditions (the presence of over-identification) is crucial to the validity of GMM estimates.

[17] The listed banks include the Industrial and Commercial Bank of China, Bank of China Limited, China Construction Bank Corporation, China Merchants Bank Co. Ltd., China, Minsheng Banking Corporation, Shanghai Pudong Development Bank, Hua Xia Bank and Shenzhen Development Bank Co. Ltd.

[18] Out of a possible 113 city banks at the end of 2006.

[19] Even by the end of 2006, only a selected number (3) were allowed to offer CNY denominated services and/or establish a limited number of branches. They continue to complain of discrimination.

[20] No data are available for urban credit unions; there are some data for just two rural coop banks (out of 80) and three rural credit unions (out of 19 348). They provide very basic banking services to local members. Based on average assets in 2006, the rural coops (CNY5.82 bn) and credit unions (CNY0.18 bn) are much smaller than the city (CNY22.95 bn) and rural (CNY38.76 bn) commercial banks. Source: Almanac of China's Finance and Banking (2007).

[21] Roughly 20% of shares are listed on the Hong Kong stock exchange for three of these banks, but they remain largely state-owned. The Agricultural Bank of China was confined to providing services to the rural sector but following reforms in 1999, it has been allowed to expand its customer base, on a par with the other state banks. According to the Annual Report of the CBRC, the Bank of Communications was re-classified as a state commercial bank sometime in 2007.

[22] Since the end of 2006, a few (e.g. Bank of Beijing, Bank of Shanghai) have been allowed to establish branches in other cities/regions.

[23] Sources: www.cbrc.gov.cn and Bankscope.

[24] Other banks have even lower net fee income ratio due to fewer branch networks (Wang, 2006).

[25] The independent variables are selected based on findings from previous studies (e.g. Goddard et al., 2004; Kosmidou et al., 2004; Valverde and Fernández, 2007; Athanasoglou et al., 2008 and etc.). Data availability also constrained some of the variable choices. For example, had it been possible to come up with a suitable measure for bank reform, it would have been included. But the gradual process of Chinese bank reform precludes the use of a measure, not even a dummy.

[26] Net loans equal gross loans minus loan loss reserves.

[27] See, among others, Shleifer and Vishny (1986) and McConnell and Servaes (1990).

[28] Under the system GMM approach, both CI and OIA are instrumented to avoid possible endogeneity problems.

[29] The consumer price index is the deflator with 2000 as the base year.

[30] In all, five versions of the GMM and two of the FE were tested using different specifications. For example, the log of total assets (LOGTA) was tested in other GMM estimations and found to be insignificant. Likewise for the lagged inflation rate. In the FE model it is not possible to test for time invariant dummies such as type of bank. The reported estimations are based on the best results in terms of AR(1), AR(2) and the Hansen test for GMM, and for FE, the F-tests and adjusted R^2.

[31] See Clarke et al. (2005) and Megginson (2005) on the privatization experience in developing countries.

[32] This is borne out by the relatively small percentage of noninterest income to total income for most banks. In 2005, the ratio of noninterest income to total income was between 3.3% and 12.4% among the big four. For the 12 joint-stocks, the figure ranged from 1% to 19%. Sources: Bankscope; Almanac of China's Finance and Banking (China Finance Society, 2008).

[33] The reform of the Rural Credit Cooperatives (RCCs) began in 2001 when three rural commercial banks were created. They were classified into three types, namely rural commercial banks, rural cooperative banks and credit unions. As with other banks, to help relieve their accumulation of NPLs, the government (via its central bank, the PBC) adopted a series of policies including government subsidies, preferential taxation and financial aids. By April 2005, the PBC had swapped CNY36.9 billion worth of central bank bills for CNY31.9 billion of NPLs. It also wrote off CNY4.99 billion of losses incurred by 648 RCCs in the eight provinces selected for the pilot reform. In addition, the PBC extended financial aid to the RCCs in another 21 provinces selected for the second batch of the pilot reform. Source: www.cbrc.gov.cn.

[34] Policy loans finance key projects designated by the government to be of national importance. In 1994 three policy banks were created for this purpose, so other banks could operate on a national footing. However, banks that are largely state-owned (from the big four to rural coops) continue to be pressured into making these loans.

[35] For more detail, see PBC (2004).

[36] The lagged inflation rate was dropped because it was insignificant in all seven models tested, and was highly correlated with the other macro variables.

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