FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH IN CHINA

Liu Yimiao¹, Wu Zihao², Sesay Brima³

¹School of International Education, Wuhan University of Technology, Wuhan, MS. China, 430070

²School of International Education, Wuhan University of Technology, Wuhan, Mr. China, 430070

³School of Economics, Wuhan University of Technology, Wuhan, P. R. China, 430070

*Corresponding Author Email: 437529276@qq.com, wuzihao0914@foxmail.com, brimasesay30@gmail.com

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ABSTRACT

Using annual time series data for a period of 37 years spanning from 1980 to 2016, this paper investigates the relationship between financial development and economic growth at the country level in China. The ordinary least square estimation technique was employed to establish the relationship. The study uses broad money to GDP ratio and domestic credit to the private sector as proxies for financial development. The empirical result reveals that, financial development as a whole has not contributed significantly to the growth rate of China which has been attributed largely to the high rate of non-performing loans. On the other hand, control variables such as labour, investment and trade, were found to be positive and highly statically significant in influencing growth. It was therefore concluded that the economic growth of China is highly attributed to the growth of its labour force and trade.

1. INTRODUCTION

Economic Literature attributes greater importance to the rate of physical capital accumulation in the process of economic growth and hence to economic development. However, the relationship between financial development and economic growth is a controversial issue because, the question as to whether financial development plays a casual role on economic growth is mixed, with the debates still ongoing. Despite this understanding, however, this research does not undermine the role of finance on growth and growth on finance. This is because poor performance in the financial system may impact negatively on investment and hence economic growth. It is the case that, recently the world witnessed one of the most devastating financial meltdowns of 2007-2009 since the great depression of the 1930s and affected investment, employment, remittances and trade thus leading to world recession. The relationship between financial development and economic growth has been one of the most debated in the recent past, yet with little consensus. Central to this debate is the question of whether strong economic performance is finance-led, or growth driven. This study therefore, seek to systematically investigate the relationship between financial development and economic growth in the context of China from 1990-2016.

In terms of the empirical evidence, a number of studies have been recorded, for instance, in a study in the Asian Development Bank's combined times series observation and cross-sectional data for India, Korea, Malaysia, Nepal, Pakistan, Singapore, Taiwan and Thailand, they found that the incremental output-capital ratio was positively associated with the real deposit rate with the later variable being statistically significant at 5-percent level [1]. However, conflicting result in a cross-section study of India and Korea using dynamic multiplier analysis to examine the long-run effects of changes in nominal interest rates and inflation rates on economic growth. The result shows an unfavorable effect of higher interest rates on economic

growth.

In China, series of reforms have taken place to revitalize the economy. The objective of the economic reform in china according to official document was to establish a socialist market-oriented economy based primarily on public ownership [2]. Reform in the banking sector was necessary to achieve this goal. The road map for financial reform was "to create an efficient banking system by giving more freedom of operation and profit motives to specialized and other commercial banks", while monetary policy was to be controlled by the central bank. Despite the restructuring of the banking system and series of reforms in the financial sector, the banking sector is still dominated by the "big four" state owned banks despite of a considerable expansion since late 1980s. These are lending to the state-owned firms, while the economy has increasingly shifted towards private firms [3]. Importantly, these banks are under increasing pressure to reduce the quantity of non-performing loans. In fact, non-performing loans (NPL) represent a significant part of the assets of Chinese banks according to the People's Bank of China (PBC), the NPL ratio of the big four banks stood at 16 percent in 2004, although down from 20 percent at the end of 2003.

2. DATA, MODEL SPECIFICATION AND EXPECTED SIGNS

The study adopts an empirical approach in the analysis. It makes use of secondary annual time series data collected from the World Development Indicators of the World Bank data base from 1980 to 2016 on financial sector indicators and control variables that influenced growth of output.

According to a study, the growth of real GDP is considered to depend on several variables [4]. For the purpose of our study, the relationship between finance and growth can be augmented from the Barro-growth regression of financial development variables which takes the form thus;

$$\text{Growth} = \alpha_0 + \beta_1[\text{Finance}] + \gamma_1[\text{conditioning set}] + \mu_t \quad (1)$$

Where β_1 the coefficient of the measures of financial sector

development/indicators and γ_i is the coefficients of the set of control variables. μ_t is the erro term

However, it is difficult to identify proxies for measuring financial sector development and growth. For instance, discuss different indicators of financial development capturing the size, activity and efficiency of the financial sector, institutions or markets and taking a clue from previous studies [4-6]. However, this study improves on their models by including two measures of financial development.

In this study, our measures of financial development indicators are purely banking; bank lending to the private sector is considered to be the first-transmission channel through which financial development impacts on growth, followed by stock, bond and then insurance markets. However, this may change over time, as the economy expands, the motivation to involve in financial markets tends to be high and the benefit increases above the cost. Therefore, the selection of banking development indicators as appropriate proxies to financial development (FD) justifies the choice of financial development in China.

This study therefore uses two financial development indicators mainly banking development indicators and includes broad money, quasi liquidity liabilities, domestic credit to the private sector by banks and interest rate spread. The regression model is therefore specified with the Real GDP (RGDP) as dependent variable, measured as GDP growth on an annual basis adjusted for inflation. The explanatory variables comprise both the financial sector indicators and the control variables as follows:

Financial Sector indicators

- The overall financial depth of the financial system (measured as the ratio of broad money to GDP, i.e.

$$\left(\frac{M_2}{GDP}\right)$$

- Credit to the private sector by banks as a share of GDP, which is the value of loans made to the private enterprises and households used as a measure of financial sector

$$\text{development. i.e. } \left(\frac{DCP}{GDP}\right)$$

The Control/Conditioning variables include;

- L = Labor force
- T= Trade ratio.
- INV/GDP = Investment as a share of GDP (measured of gross fixed capital formation)

Hence,

$$FD = f\left(\frac{M_2}{GDP}, \frac{DCP}{GDP}\right)$$

From equations 1 and 2, we specify our model for this study thus;

$$\ln(RGDP) = \alpha + \beta_1 \ln\left(\frac{M_2}{GDP}\right) + \beta_2 \ln\left(\frac{DCP}{GDP}\right) + \beta_3 \ln L + \beta_4 \ln INV/GDP + \beta_5 \ln T + \mu_t$$

Where α is a constant, $\beta_1 - \beta_5$ are parameters to be estimated and μ_t is the error term. The a priori expectations of the model are that $\beta_1, \beta_2 > 0$ and $\beta_3, \beta_4, \beta_5 > 0$. The model is estimated with the aid of E-views 7.2 software. The rationale for making these restrictions are based on economic theory and their expected behavior in the signs (coefficients to be estimated) can be tested in the analysis, it implies that a unit increase in the independent variable will lead to a unit decrease (-) or increase (+) in RGDP.

The coefficient of the measure of broad money (M_2) measures as the ratio of broad money to GDP is expected to be positive or negative depending on the level of per capita income of the country. Most studies have found that for high income countries, the relationship between broad money and growth is positive and significant. For example, financial depth and growth are only associated positively for a high-income sub sample [7]. They offer the explanation that in developing countries the limited fixed cost associated with the provision of financial services inhibits growth.

The coefficient of the variable representing domestic credit supply to the private sector (DCP) as a ratio of GDP is expected to be positive or negative. If credits are well monitored and utilized judiciously, borrowers will minimize risky behavior in the use of loans with low probability of defaults. In such a situation, we expect credit supply to impact positively on growth. However, in a situation where defaults rate on credits are high due to poor monitoring, then the impact on growth is expected to be negative.

The coefficient of the variable representing investment as a ratio of GDP, measures as the gross capital formation is expected to be positive because the combined effect of investment in schools, hospitals, offices, plants, machinery, equipment, constructions of roads and railways and other inventories etc will provide an enabling environment to boost employment and hence economic growth. Similarly, the coefficients of labour force and trade are expected to be positively related to GDP.

3.RESULTS AND DISCUSSION

Multiple linear Regression is run after satisfying all conditions of OLS to establish the relationships. However, unit root test was also done to check the stationary properties of the variables in the model. Results of the regression are shown in table 1 below:

Table 1: Regression result

Dependent Variable: lnRGDP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-36.31103	11.28051	-3.218917	0.0030
lnM2	-0.108672	0.445562	-0.243899	0.8089
lnDC	-0.705744	0.527871	-1.336963	0.1910
lnL	7.339587	2.205596	3.327711	0.0023
lnI	2.451053	0.531641	4.610353	0.0001
lnT	0.515804	0.225419	2.288199	0.0291
R-squared	0.586233	Mean dependent var		
Adjusted R-squared	0.519497	S.D. dependent var		
S.E. of regression	0.215938	Akaike info criterion		
Sum squared resid	1.445501	Schwarz criterion		
Log likelihood	7.484821	Hannan-Quinn criter.		
F-statistic	8.784292	Durbin-Watson stat		
Prob(F-statistic)	0.000028			

Note: lnM2 is the log of M2 to GDP, lnDC is log of domestic credit lnL is labour, lnI is investment, lnT is trade.

The ratio of M2 to GDP has a negative sign and exerts a significant effect on real GDP. The coefficient of the variable representing domestic credit to the private sector is also negative and statistically insignificant. This finding is in conformity with findings [7]. They argued that the level of per capita income of the country will determine the magnitude of the relationship between broad money and growth. Most studies have found that for high income countries, the relationship between broad money and growth is positive and significant. For example, find that financial depth and growth are only associated positively for a high-income sub sample [7]. They offer the explanation that in developing countries the limited fixed cost associated with the provision of financial services inhibits growth. This can be attributed to the fact that the Chinese banking sector is concentrated in the four largest state-owned banks (SOBs) which allocate a lion's share of credits to the state-owned enterprise under the government's management. These banks are doing the "banking" with significantly different objectives than the private commercial banks in the market economy [8]. The government of china uses the credit to achieve regional equality [9]. Most importantly, it is well-known that the Chinese banking sector is running with high non-performing loans (NPLs) showing that there is a misallocation of credit. In a study also reported that NPLs within the SOBs are 12.6% of total loans and 15.5% of total GDP, which is significantly higher than in other countries [3]. This suggests that the major chunk of the credits is not issued for the productive use in China. However,

it should be noted that the NPLs are continuously decreasing since 2003, which is an encouraging sign for the future of the Chinese financial sector [10].

Unlike broad money, the coefficient representing labour that has been proxied by labour force participation rate is positive and statistically significant at the 1% level implying that an increase in the labour force participation rate will induce economic growth. The positive relationship between labour and economic growth is not surprising because when the labour force increases, the total output of the economy will increase. The fact that labor contributes most to GDP growth (7.98%) in China suggests that the Chinese economy is still a labor-intensive economy and its primary source of growth comes from extensive use of labour.

Another objective that has been specified by the study is to establish the effect of investment on economic growth with the assumption that, investment increases economic growth. From the result in table 1 above, the coefficient representing investment is positive and statistically significant at the 1% level, which by implication, an increase in investment will enhance economic growth. Since both variables are moving in the same direction, it validates the assumption that investment positively affects GDP growth in China.

The adjusted R^2 is 0.507672, implying that 50.76% of the variation in economic growth is explained by the independent variables, which is an indication of a very good fit. In comparison to the R^2 , the adjusted R^2 is better and more precise good fit measure because it allows degree of freedom to sum of squares therefore even after addition of new independent variable(s) the residual variance does not change. The overall equation is highly statistically significant as shown by the probability value of the F-statistic (0.000018).

4. CONCLUSION

The broader objective of this study is to explore the effect of financial development on growth, since the sign of M2 to GDP and domestic credit to the private sector as our measures of financial development are negative and statistically insignificant; it means increase in financial depth is not important for the rise in economic growth. While the coefficient for labour, investment and trade are highly significant. These coefficients reflect that China's economic growth is attributed to its labour intensiveness and international trade. Apparently, our hypothesis that growth depends on financial development is rejected in the case of China. Here, this study follows the growth literature of China, that is, the growth of China is highly attributed to the growth of its labour force and trade. Keeping the Chinese banking sector in view, it is interpreted that the credit allocation of the Chinese SOBs is not very efficient. Furthermore, the NPLs have prevented financial development from contributing to the economic growth. An important policy implication emerging from this finding is that, if China carries on with the same unproductive loan expansion, then the growth of the Chinese economy will be hindered. Therefore, it is vital that further institutional reforms are brought into effect for more efficient allocation of resources.

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