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Financial Development, Growth, and Regional Disparity in Post-Reform China

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Abstract

Deepening financial development and rapid economic growth in China have been accompanied by widening income disparity between the coastal and inland regions. In this paper, by employing panel dataset for 29 Chinese provinces over the period of 1990-2001 and applying the generalized method of moment (GMM) techniques, we examine the impacts of financial development on China's growth performance. Our empirical results show that financial development significantly promotes economic growth in coastal regions but not in the inland regions; the weak finance-growth nexus in inland provinces may aggravate China's regional disparities.

Keywords: financial development, income disparity, economy, China

JEL classification: D63, G20, R11

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Acronyms

ABC   Agricultural Bank of China

AMCs   asset management corporations

BOC   Bank of China

CCB   China Construction Bank

DRC   domestically raised capital

FDI   foreign direct investment

GDP   gross dometic product

GMM   generalized method of moments methodology

ICBC   Industrial and Commercial Bank of China

IFA   investment in fixed assets

INV   variable of investment rate

NMC   negotiable stock market capitalization

PBC   People's Bank of China

TMC   total stock market capitalization

1   Introduction

The increasing regional income disparity in China has recently attracted a lot of attention. China's *open door* policy and economic reforms since 1978 have led not only to rapid economic growth, but also worsening income distribution. First of all, preferential government policy and the concentration of trade and foreign direct investment (FDI) in the coastal areas have significantly promoted economic growth in these regions, but largely left the poor inland regions behind. The coast-interior dichotomy and the widening regional income disparity have posed serious challenges for China's future development.

Different factors have been forwarded to explain China's regional disparity. Tsui (1991) examines the effect of China's fiscal decentralization on regional disparity, and finds a positive relationship between decentralization and worsening regional disparity before 1985. Lee (1994) investigates the relationship between FDI and regional development gap, and concludes that the difference in the amount of FDI contributes to China's regional disparity. Similar results can also be found in the analysis of Dayal-Gulati and Husain (2000). Young (2000) considers the role of local protectionism in explaining China's regional disparity. He presents a lot of evidence on the rise of local protectionism in China during the reform era, and argues that this may widen the income gap among Chinese regions. For some authors, geographical factors and regional preferential policies are considered as the main cause of the economic boom in the coastal regions (e.g., Fleisher and Chen 1997; Démurger *et al.* 2001). Démurger *et al.* (2001) find positive 'pure geographical effects' and positive 'preferential-policy effects' for coastal provinces, and they propose that rapid growth of the coastal provinces in the post-1978 period did not occur too much at the expense of the interior areas.[1] In a recent study, Zhang and Fan (2004) examine the contributions of various types of public investments to regional inequality in rural China. They find that all types of investments in the least-developed western regions reduce regional inequality, whereas additional investments in the coastal and central regions tend to worsen regional inequality; in addition, investments in rural education and agricultural R&D in the western regions have the largest and most favourable impacts on narrowing regional disparity.

Despite a large literature on the cause and consequence of coast-interior development gap in China, only a few attempts have been made to address the role of financial development in the dynamic evolution of China's regional disparity. Using more recent and systemic data on China's financial market and financial intermediation, this paper attempts to add to the existing literature by providing new evidence on the relationship between financial development and economic growth from a coast-interior perspective, and thus contributes to the current debate on China's regional disparity.

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[1] This argument is in contrast to the results of some other research, for example, Zhao (1994) argues that the greater concentration of China's overall investment to the coastal provinces contributes significantly to the economic boom of these regions, partially at the expense of the interior areas.

According to the literature, both theoretical and empirical studies suggest a positive relationship between finance and growth, and that the development of financial markets and institutions is a critical and inextricable part of the growth process (Levine 1997). However, a bi-directional causality between finance and growth, in which financial development and growth are both endogenously determined, has also been proposed in recent empirical works. Given the endogenous nature of these variables, instrumental approaches or more advanced econometric techniques (e.g., the instrumental-variable estimator, and the generalized method of moment-GMM approach) are used in the empirical literature to control for endogeneity arising either from reverse causation or from dynamic specification. In this paper, the GMM approach is employed to control for endogeneity in our regression model.

The rest of this paper is organized as follows. The next section provides a brief literature review on the relationship between finance and growth. Section 3 highlights recent trend of regional disparity and financial development in China. Variables and data for regression are described in section 4. Empirical analyses are presented in section 5. Using panel data for 29 Chinese provinces over the period of 1990-2001 and applying the GMM techniques, we investigate the impacts of financial development on the pattern of regional economic growth in China. Finally, this paper concludes with section 6.

2   Financial development and economic growth: a brief literature review

The important role of financial sector in the process of economic development has long been recognized in the literature (e.g., McKinnon 1973; Shaw 1973; Greenwood and Jovanovic 1990; Bencivenga and Smith 1991; King and Levine1993a, 1993b; Merton and Bodie 1995; Levine 1997). A well-functioning financial system will stimulate economic growth by providing a number of important functions such as clearing and settling of payments, pooling of savings, facilitating the allocation of resources across space and time, pooling risk, and reducing information costs (Merton and Bodie 1995).

The significant contribution of financial intermediaries in promoting economic growth has been highlighted in recent endogenous growth literature. Through financial intermediations, financial development can lead to an increase in the long-run growth rate. Therefore, within the framework of endogenous growth, financial development can have not only level effects, but also growth effects.

Meanwhile, a number of new insights can be drawn from the recent advance in theoretical works, where various functions of financial intermediaries are stressed. For instance, Greenwood and Jovanovic (1990) develop an endogenous model, in which finance and growth are jointly determined. They highlight two essential functions of financial intermediaries in promoting growth, i.e., collecting and analysing information of alternatives investment projects, and increasing investment efficiency through allocating the funds to the projects with higher expected returns. Alternatively, in the

endogenous model of Bencivenga and Smith (1991), they focus on another key function of financial intermediation for the development process. They argue that by enhancing liquidity and mitigating idiosyncratic risk through risk diversification and pooling, the development of financial intermediaries results in a reduction of households' unproductive reserve of liquid assets, as such funds can be channelled toward illiquid but more productive activities, and therefore financial intermediary development highly contributes to economic growth. Moreover, the importance of portfolio diversification and risking sharing via stock markets in inducing sustained growth is also explored in a number of studies (e.g., Levine 1991; Saint-Paul 1992). All these works provide strong evidence to suggest that financial development can affect long-run growth through different channels and various aspects of innovation or productive activities.

Public policies can also affect financial development in many ways. Roubini and Sala-i-Martin (1992, 1995) are among the few works that incorporate government behaviour and financial development into endogenous growth model. In their recent paper (1995), an AK-type endogenous growth model is set up to examine the effects of financial repression policies on long-term growth. They argue that government might want to repress the financial sector because this sector is an 'easy' source for financing the public budget. In order to increase the revenue from money creation, governments subject to large income-tax evasion may choose to increase seigniorage by repressing the financial sector and increasing inflation rates. Financial repression will therefore be associated with high tax evasion, low growth, and high inflation.

The positive relationship between finance and growth predicted by the endogenous growth literature has received considerable support from a number of empirical studies. Using data on 80 countries over the period of 1960-89, King and Levine (1993a) empirically investigate the finance-growth linkage. They find that higher levels of financial development are positively associated with faster current and future rates of economic growth, physical capital accumulation, and economic efficiency improvement. Based on more recent data for 63 countries over the period of 1960-95, Beck, Levine, and Loayza (2000) find that higher levels of financial intermediary development produce faster rates of economic growth and total factor productivity growth. Similar results can also been found in Levine, Loayza, and Beck (2000). Therefore, these empirical studies suggest a positive, first-order relationship between financial development and economic growth.

However, this conventional view has also been challenged by some recent empirical studies. Demetriades and Hussein (1996) highlight the dangers of statistical inference in cross-section studies on finance-growth nexus in which countries with very different experiences in both economic growth and financial development, reflecting different institutional characteristics and different policies, are implicitly treated as homogeneous entities. Using time-series data from 16 countries, their causality tests provide little support to the view that finance is a leading sector in the process of economic development. They find that the patterns and directions of causality between finance and growth vary across countries. Based on a broad dataset covering 95 countries, Ram

(1999) finds that the predominant pattern indicates a negligible or weakly negative association between financial development and economic growth. In addition, when the data sample is split into three subgroups according to growth experience (i.e., low-growth, medium-growth, and high-growth countries), a huge parametric heterogeneity is observed, showing a negligible or negative finance-growth relationship. Andersen and Tarp (2003) also investigate the finance-growth nexus by using data identical to that of Levine, Loayza, and Beck (2000), estimating with both the full sample and the regional sub-samples. They find that while a positive and significant relationship is found in the full sample cross-section studies, the correlation is negative in the poorest countries; meanwhile, in individual-country studies, different causal patterns between finance and growth are reported; moreover, conclusions are very sensitive to the type of estimator used, and slight changes in nuisance parameters often change the results.

Therefore, empirical findings of existing studies on the finance-growth nexus are mixed. Moreover, while a number of studies have been conducted to investigate the finance-growth linkage through cross-country regressions, detailed empirical research in a country- and region-specific context is required to provide deeper insights into this critical nexus. In this paper, with the help of the recently released Chinese provincial data, we attempt to investigate the impacts of regional financial development on the patterns of regional economic growth, so as to better understand to what extent the differences in the degree of financial development across Chinese provinces can account for the increasing regional income disparity in the country.

3 China's financial development and regional growth performance

3.1 Development of financial markets and financial intermediaries

Over the last two decades, substantial change has occurred in China's financial sector, e.g., institutional reforms and financial innovations in the banking system, and rapid development in China's emerging capital market.

The abandonment of the mono-banking system in the late 1970s marked the beginning of China's financial reforms. Four state-owned specialized banks, authorized with specialized functions concerning different scopes of economic activities, were separated from the traditional financial system, and the People's Bank of China (PBC) was reorganized as the central bank of China.[2] Since then, various financial institutions have been successively set up, and China's financial system has been gradually transformed from a mono-banking system into a diversified financial institutional system.

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[2] These four state-owned specialized banks are: the Agricultural Bank of China (ABC), the China Construction Bank (CCB), the Bank of China (BOC) and the Industrial and Commercial Bank of China (ICBC).

The promulgation of the Central Bank Law and the Commercial Bank Law in 1995 further deepened the country's financial reforms. The Central Bank Law endorsed the independent status of the PBC, so that the PBC is 'free from intervention by local governments, public organizations, individuals, or other administrative organs at all levels'. Similarly, the Commercial Bank Law ensures and protects the independent operations of commercial banks, and explicitly separates the commercial banking from the securities business and investment banking. Therefore, both the Commercial Bank Law and the Central Bank Law lay the foundation of a modern banking system in China.

Table 1 reports the ratio of loans and deposits in China's financial institutions to GDP, and that of money and quasi-money (M2) to GDP. Both are important indicators to measure the development level of the financial sector. We find that the scale of loans and deposits in China's financial institutions grew rapidly over the last decade. The deposits-to-GDP ratio amounted to 1.63 in 2002, a sharp increase of 116 per cent from 1990; the loans-to-GDP ratio rose from 0.95 to 1.25 during the same period. The M2-to-GDP ratio also experienced a remarkable increase, amounting to 1.77 in 2002, which was more than double the figure twelve years ago.

However, the large scale of non-performing loans in China's banking sector impedes further development of financial intermediation. Heavy burden of 'policy lending', poor banking operations and management, soft budget constraints due to insider control and government intervention, and the lack of efficient regulation and surveillance system have long been recognized as the main causes of the country's accumulation of non-performing loans.

To solve the problem of non-performing loans, the central government had injected a total of 270 billion *yuan* (US$32.6 billion) into the four major state-owned banks in 1998. In addition, four asset management corporations (AMCs) were established in 1999 to relieve the heavy burden on four major state banks by taking over 1.4 trillion *yuan* (US$169) of their non-performing loans and bad debts. However, due to the lack of appropriate mechanism in transformation and institutional reforms in financial systems, the effects of these policy measures are quite limited. By the end of 2003, the total amount of non-performing loans in the four major state-owned banks has reached nearly 2 trillion *yuan* (US$242 billion), equivalent to 20 per cent of their total assets.

Table 1

Ratio of money and quasi-money (M2), deposits and loans in financial institutions to GDP, 1990-2002

(%)	1990	1995	1996	1997	1998	1999	2000	2001	2002
Deposits/GDP	0.76	0.92	1.014	1.11	1.22	1.33	1.38	1.48	1.63
Loans/GDP	0.95	0.86	0.90	1.01	1.10	1.14	1.11	1.15	1.25
M2/GDP	0.82	1.04	1.12	1.22	1.33	1.46	1.50	1.63	1.77

Source: NBS (various years).

With China's accession into the WTO in 2001, further penetration of foreign banks and increasingly intensive competition are expected. Under China's commitment to the WTO, its banking sector will be fully open to foreign competition by 2006. To speed up China's financial reform process and to advance banking restructuring, the Chinese authorities have recently instigated a series of policy measures to reduce non-performing loans, improve the efficiency of financial sector, strengthen banks' corporate governance, and enhance their competitiveness.

In December 2003, the Chinese government injected US$45 billion of its foreign reserve into the Bank of China (BOC) and the China Construction Bank (CCB), so as to increase the adequacy of bank reserve and strengthen banks' capital base in preparation for their restructuring into joint-stock commercial banks and stock market public listing. Meanwhile, the Central Huijin Investment Company was set up in 2003 to manage these injected funds and supervise the banking reforms of the BOC and the CCB, in an attempt to turn these two state-owned banks into competitive and modern commercial banks. In the near future, the other two state-owned institutions, i.e., the Industrial and Commercial Bank of China (ICBC) and the Agricultural Bank of China (ABC), are also expected to be re-capitalized; in addition, the joint-stock system reforms of these two banks have been put on the agenda.

The past ten years have witnessed significant development in the country's emerging capital market. Since the opening of Shanghai Stock Exchange and the Shenzhen Stock Exchange in the early 1990s, China's stock market has substantially expanded. The Securities Law in 1999 provided the legal basis as well as detailed regulations for regulating investors and listed companies. Since then, the stock market has played an increasingly important role in the economy by facilitating capital raising, promoting domestic investment, and improving efficiency of financial resource allocation.

Table 2 reports the ratio of China's total stock market capitalization (TMC) and negotiable stock market capitalization (NMC) to GDP. The TMC-to-GDP ratio rose from a mere 8 per cent in 1994 to more than 45 per cent in 2001; NMC-to-GDP ratio also expanded impressively from 2 per cent to 15 per cent in the same period. This suggests a remarkable increase in the importance of stock markets in the Chinese economy. Table 2 also presents the ratio of domestically raised capital to total fixed assets investment, which registered an increase from 0.59 per cent to 3.18 per cent during this period. Furthermore, rapid development in the bonds market, money market, foreign exchange market and other aspects of the financial sector have greatly contributed to China's economic growth.

However, a number of recent studies find that with profit rates and returns to capital differing widely across regions, the integrated level of China's internal financial market is low (e.g., World Bank 2003; Tan and Zhang 2004; Boyreau-Debray and Wei 2004). Due to the fragmentation of the financial market, the development level of local financial intermediaries has been an important factor in determining local economic performance (Boyreau-Debray 2003). Continuing commercialization of the banking

sector and further deepening financial reforms are required to improve China's domestic financial market integration and flexibility.

Table 2

Ratio of market capitalization to GDP and of domestically raised capital to investment in fixed assets:

1994-2001 (100 million *yuan*)

Year	Total market capitalization (TMC)	TMC as % of GDP	Negotiable market capitalization (NMC)	NMC as % of GDP	Domestically raised capital (DRC)	Investment in fixed assets (IFA)	DRC as % of IFA
1994	3,690.62	7.89	964.82	2.06	99.78	17,042.1	0.59
1995	3,474.0	5.94	937.94	1.6	85.51	20,019.3	0.43
1996	9,842.37	14.5	2,867.03	4.22	294.34	22,913.5	1.28
1997	17,529.23	23.44	5,204.43	6.96	856.06	24,941.1	3.43
1998	19,505.64	24.52	5,745.59	7.22	778.02	28,406.2	2.74
1999	26,471.17	32.26	8,213.97	10.01	896.83	29,475.2	3.04
2000	48,090.94	53.79	16,087.52	17.99	1,540.86	32,917.7	4.68
2001	43,522.19	45.37	14,463.16	15.08	1,182.15	37,213.5	3.18

Source: CSSB (2002).

3.2 Regional disparity in China

After more than two decades of market-oriented reforms, the rapid developments of China, especially its great achievements in stimulating economic growth, have been widely acknowledged and well documented. However, rapid economic growth has been accompanied by a remarkable increase in regional income disparity.

Interregional inequality in China has long been considered as a major factor contributing to the aggregate inequality. Regional income disparity, measured by Gini coefficient of provincial GDP per capita in 1978 constant price, rose rapidly throughout the 1990s, amounting to 0.387 in 2002, up from 0.329 in 1990. Figure 1 gives the changes in regional disparity in China over the last decade.

The widening regional disparity has presented a serious challenge to the Chinese government. Increasing concerns of social equity and social stability have also led the authorities to exert greater efforts to fight income disparity. In order to accelerate the economic development of the inland provinces and to lower interregional income disparity, the central government has formulated comprehensive development strategies and policy measures. In 1996, the Chinese government presented its ninth five-year plan, in which rectifying the regional income gap was formally placed on the agenda. By the end of the 1990s, the central government began to implement the strategy for the development of the western regions. According to the *Report on the Work of the Central Government* presented at the third session of the ninth National People's Congress in March 2000, three main goals for the development of the western regions had been well

established, i.e., narrowing regional disparities in economic development and income distribution; maintaining social and political stability in the western areas by accelerating development in these regions; and creating new economic growth by expanding domestic demand to respond to the slowing economic growth in China.[3] The implementation of these strategies and policies is generally based on the comparative advantage of the western regions, and will certainly contribute to accelerate its economic growth and narrow the divergence between the coastal and inland regions.

Figure 1

Regional income disparity in China, 1990-2002
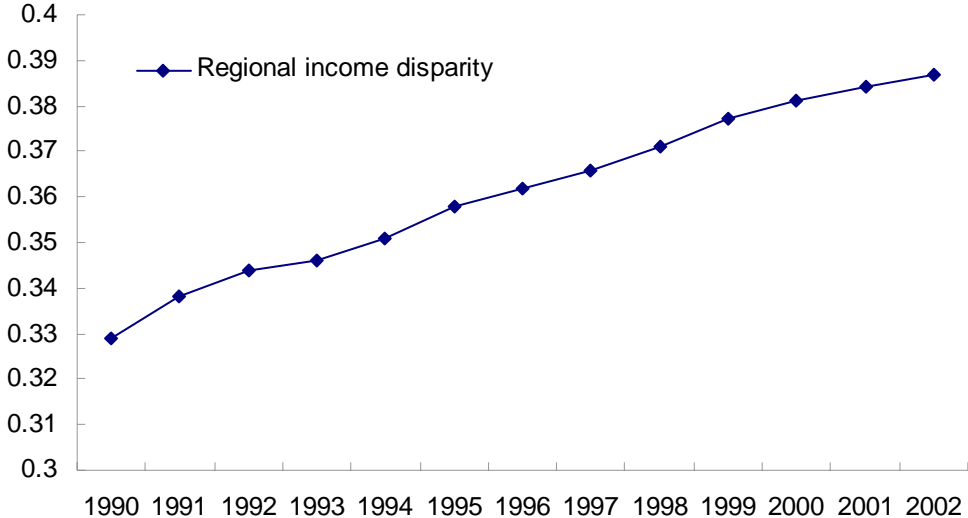
Note: Regional income disparity is measured by the Gini coefficient of provincial real GDP per capita.
Source: NBS (various issues).

4   Variables, model and data

4.1 Variables definitions and measurements

In our empirical estimations on the relationship between finance and growth, the logarithm of real GDP per capita in 1978 constant price (Y) is employed as the dependent variable. In order to measure the financial development level in China, three financial indicators frequently used in the literature are included in the regression

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[3] Moreover, in stimulating the economic development of the western regions, five focal points are also stressed by the central government (i) accelerating infrastructure construction, especially in water conservancy, communications, and transportation, travel and broadcasting; (ii) strengthening ecological construction and environmental protection; (iii) adjusting the industrial structure, giving priority to the industries with comparative advantages and market prospects, while fostering and forming new economic growth points; (iv) developing technology, education, and accelerating personnel training; and (v) deepening reforms and openness by adopting major policies and measures to attract domestic and international investments.

model, i.e. financial depth (DEPTH), bank competition (COMP) and share of private credit (PRIVATE).

DEPTH, defined as the ratio of total loans of the financial institutions to GDP, is employed in our regressions to measure the financial depth. In addition, we introduce an indicator of bank competition (COMP), measured by the share of credit issued by financial institutions other than the four major state banks, to reflect the degree of competition in the financial sector. As for the indicator of PRIVATE, we follow King and Levine (1993a) to define it as the share of credit allocated to the private sector.

It is well acknowledged that bank lending in China, especially that of the state-owned banks, is heavily influenced by government policy (Lardy 1988). In order to finance the government's policy-lending targets, credit quotas are often unevenly distributed among regions without the ability of local deposits in the region: some rapidly growing provinces might have a low credit quota and be constrained in their lending volume, while banks in the slower growing regions can be assigned high quotas, and have to rely heavily on additional funds from the central banks to fill the gap between insufficient local deposits and above-quota lending (Boyreau-Debray 2003). Therefore, central bank lending to the provinces can be considered as a useful indicator to reflect the degree of state intervention in credit allocation. However, data on central bank credits to the provinces are unavailable in China. Thus, given the data limitations, we construct here the indicator, CENTR, measured as the ratio of financial institutions' total loans to total deposits, as a proxy for central bank lending to provinces.

Furthermore, the variable of investment rate (INV), measured as the ratio of total fixed assets investment to GDP, is also included into our regression model to test the conventional hypothesis of investment-induced growth.

4.2 Regression model

In general, for econometric test, the regression model can be described as follows:

$$Y_{i,t} = \alpha \ + \ \beta_0 Y_{i,t-1} + \beta_1 F_{i,t} + \beta_2 X_{i,t} + u_i + \varepsilon_{i,t} \tag{1}$$

In this model, $Y_{i,t}$ is the logarithm of the real GDP per capita in province i at the year t; $F_{i,t}$ is a vector of endogenous variables; and $X_{i,t}$ is a vector of exogenous variables. The inclusion of the lag of the logarithm of real GDP per capita ($Y_{i,t-1}$) allows us to use the information contained in the initial conditions to generate more efficient estimation. In addition, this specification also contains an unobservable province-specific effect u_i, a constant term α and an error term $\varepsilon_{i,t}$. Table 3 presents the definitions of variables. Descriptive statistics for all these variables can be found in Table 4. Moreover, the Generalized Method of Moments (GMM) methodology, proposed by Arellano and

Bond (1991) and then further developed by Blundell and Bond (1998), is employed here to control for endogeneity in our regression model.

Table 3

Definitions of variables

Variable	Definition
Y	The logarithm of the real GDP per capita
Financial variables:	
DEPTH	Financial depth, measured as the ratio of total loans of financial institutions to GDP
PRIVATE	Share of private credit, measured as the share of credit allocated to private sector
COMP	Bank competition, measured by the share of credit issued by banks and financial institutions other than the four major state-owned banks
Other control variables:	
INV	The variable of investment rate (INV), measured by the ratio of total fixed assets investment to GDP
CENTR	The central bank lending to the provinces, measured as the ratio of total loans to total deposits of financial institutions

Table 4

Description statistics of variables

	Mean	Std dev.	Minimum	Maximum	Observations
Y (in Logarithm)	7.3582	0.6761	6.0217	9.7439	348
INV	0.3323	0.0970	0.1527	0.7294	348
CENTR	1.0419	0.2652	0.2357	1.9390	348
DEPTH	1.0183	0.2992	0.54	2.53	348
PRIVATE	0.1530	0.0746	0.01	0.35	348
COMP	0.3256	0.1358	0.01	0.59	348

Note: Y = the logarithm of real GDP per capita;
INV = the investment rate;
CENTR = the central bank lending to the provinces;
DEPTH = financial depth;
COMP = bank competition;
PRIVATE = share of private credit.

4.3 Data

Using panel dataset covering 29 Chinese provinces over the period of 1990-2001, we investigate the relationship between finance and growth in China. Data used in our empirical test are from *China Statistical Yearbook* (various issues), *China Financial Yearbook* (various issues), *Comprehensive Statistical Data and Materials on 50 Years of China*, individual provincial statistical yearbooks and National Bureau of Statistics.

5 Empirical results

Based on the methodology of GMM system estimator, empirical results for the coastal and inland regions are reported respectively in Tables 5 and 6. For each regression, we test our specification of equation with the Sargan test for instrument validity, and then with the serial correlation test for the second-order serial correlation. The test results suggest that our instruments are valid, and there exists no evidence of second serial correlation in our estimations.

In the case of the coastal regions, all the financial indicators are significant in our estimations with the expected signs (Table 5). Empirical results show that financial development significantly contributes to the economic growth of the coastal regions.

Table 5

Financial development and growth in the coastal regions

(Dependent variable = $Y_{i,t}$: the logarithm of real GDP per capita)

	Generalized method of moments			
	Regression I	Regression II	Regression III	Regression IV
$Y_{i,t-1}$	0.8003*** (21.53)	0.7792*** (19.81)	0.7280*** (16.43)	0.7623*** (18.55)
$INV_{i,t}$	0.2266*** (4.44)	0.2283*** (4.50)	0.2192*** (4.17)	0.1997*** (3.80)
$CENTR_{i,t}$	-0.2477*** (-5.33)	-0.2594*** (-5.52)	-0.1636*** (-4.71)	-0.2325*** (-4.95)
Financial indicators				
$DEPTH_{i,t}$	0.0633*** (2.69)	0.0650*** (2.70)		0.0525** (2.20)
$PRIVATE_{i,t}$	0.1258* (1.84)		0.1780** (2.58)	0.1697** (2.45)
$COMP_{i,t}$		0.0911* (1.81)	0.1471*** (2.70)	0.1148** (2.19)
Constant	0.0047 (1.04)	0.0063 (1.39)	0.0127*** (2.73)	0.0068 (1.46)
Sagan test	1.0000	1.0000	1.0000	1.0000
AR(2)	0.2465	0.2079	0.3554	0.3148
Observations	120	120	120	120
Provinces	12	12	12	12

Notes: Y = the logarithm of real GDP per capita;
INV = the investment rate;
CENTR = the central bank lending to the provinces;
DEPTH = financial depth;
COMP = bank competition;
PRIVATE = share of private credit.
*** significant at the 1% level; ** significant at the 5% level; * significant at 10% level.
For all regressions, T-statistics values are presented in parentheses.

First, the coefficients of financial depth (DEPTH) are positive and highly significant at 1 per cent level for regressions I and II, and at 5 per cent level for regression IV. Therefore, financial deepening tends to facilitate economic growth in coastal China.

Second, empirical results also suggest that an increase in the share of credit allocated to the private sector (PRIVATE) will enhance economic growth in coastal China. The coefficients of PRIVATE are positive and significant at 5 per cent level in regressions III and IV, and at 10 per cent level for regression I. This result is consistent with the findings in the cross-county studies on finance and growth (e.g., King and Levine 1993a; Levine and Zervos 1998).

Third, a significant and positive impact of bank competition (COMP) on economic growth is also reported in our estimations. It indicates that enhancing competition in the banking sector for coastal China tends to stimulate economic growth in these regions.

Moreover, the hypothesis of investment-induced growth always holds for all specifications. A highly significant and positive impact of investment (INV) on growth is observed in our empirical results. In addition, initial GDP per capita does matter for regional growth of the coastal regions. It is significantly and positively correlated with the current growth level.

Furthermore, the indicator of CENTR, the proxy for central bank lending to the provinces, is found to be negatively and significantly correlated with economic growth. The coefficients of CENTR are negative and significant at the 1 per cent level in all regressions. This result indicates that a decline in the level of government intervention in credit allocation tends to have a positive effect on economic growth.

However, for the inland regions, the empirical results show that, except for the variable of bank competition (COMP) which still exerts a positive and significant impact on economic growth, other financial indicators are all statistically insignificant (Table 6).

As for the role of investment, the empirical results show that investment (INV) still contributes positively and significantly to the growth of inland areas, and can thus be considered as the growth engine for both the coastal and inland regions over this period.

In sum, our empirical results suggest that financial development significantly promotes economic growth in coastal regions but not in inland regions; the weak finance-growth nexus in the less-developed regions may widen the coastal-inland income gap in China.

Table 6

Financial development and growth in the inland regions

(Dependent variable = $Y_{i,t}$: the logarithm of real GDP per capita)

	Generalized method of moments			
	Regression I	Regression II	Regression III	Regression IV
$Y_{i,t-1}$	0.7437*** (11.09)	0.7259*** (11.43)	0.7315*** (11.08)	0.7276*** (10.89)
$INV_{i,t}$	0.2765*** (2.93)	0.2734*** (2.93)	0.3055*** (3.27)	0.2906*** (3.11)
$CENTR_{i,t}$	-0.0403 (-0.96)	-0.0433 (-1.05)	-0.0659* (-1.85)	-0.0378 (-0.92)
Financial indicators				
$DEPTH_{i,t}$	-0.0625 (-1.27)	-0.0632 (-1.31)		-0.0616 (-1.27)
$PRIVATE_{i,t}$	0.0370 (0.37)		0.0410 (0.42)	0.0621 (0.64)
$COMP_{i,t}$		0.1084* (2.35)	0.1187*** (2.61)	0.1086** (2.34)
Constant	0.0206*** (3.19)	0.0195** (3.05)	0.0162*** (2.78)	0.0189*** (2.92)
Sagan test	0.5840	0.5868	0.7496	0.9889
AR(2)	0.7741	0.4763	0.4011	0.5194
Observations	170	170	170	170
Provinces	17	17	17	17

Note: See notes to Table 5.

6   Conclusion

Widening regional disparity in China over the last two decades has generated considerable debate concerning the trade-off between efficiency and equity of China's market-oriented economic reforms. By employing provincial data, this paper attempts to investigate the relationship between financial development and the growth pattern of regional economies in China, and thus contributes to the current debate on the evolving patterns of China's regional income disparity.

Our empirical results show that financial development significantly promotes economic growth in coastal regions but not in inland regions; the weak finance-growth nexus in the inland provinces may aggravate China's regional disparities. These results have important implications for the regional development policy of the country. To accelerate economic growth in the less-developed provinces and to strengthen the role of financial sector in the development process of inland regions, effective policy measures have to be set up to improve the efficiency of capital allocation and investments in these areas. More detailed research is highly encouraged to provide deeper insights into these critical issues.

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