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Openness and Financial Development in China:

The Political Economy of Financial Resources Distribution

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Openness and Financial Development in China: The Political Economy of Financial Resources Distribution [*]

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Abstract

This paper examines the impact of openness on financial development in China. We use two sets of indicators of financial development to distinguish size and efficiency for both bank and capital market sectors as aspects of financial development in 30 provinces of China over the period from 2000 to 2009. The empirical results suggest that trade and financial openness exert positive impact on financial efficiency but negative impact on the size of financial development for both the indirect and direct financial sectors. The results confirm a mismatch problem between the distribution in the types of trading companies and the allocation of financial resources in China.

JEL Classification: F19, G29

Keywords: openness, financial development, bank market, capital market

1. Introduction

One of core functions of the financial system is allocating financial resources. Financial development isdescribed as a process that marks improvement in size and efficiency of the distribution of scarce financial resources, particularly in developing economies. An efficient financial system with appropriate distribution of financial resources promotes economic growth (e.g. Levine, 1997; Demirguc-Kunt and Maksimovic, 1998; Beck et al., 2000; Goodhart, 2004; Darratet al., 2006). Therefore, understanding the sources of financial development becomes a prerequisite to improve the distribution of financial resources. Existing studies examine the sources of financial development from the perspectives of financial liberalization (McKinnon, 1973), legal systems (La Porta et al., 1997, 1998), governmentownership of banks (Andrianovaet al., 2008), and political stability (Girma andShortland, 2008).

Another branch of literature puts forward that openness is an important source of financial development[1]. These studies generally find positive links between trade/financialopenness and financial development and between trade openness and financial openness across developed and developing economies.However, the findings based on the examinations of the two-variable relationships are likely to be incomplete and even misleading, as articulated in the seminal work of Rajan and Zingales (2003).Rajan and Zingales suggest an important three-variable relationship among trade openness, financial openness, and financial development. In particular, they establish that trade openness without financial openness is unlikely to lead to financial development and they verify their hypothesis using data for 24 industrialized countries for 1913–1999.

Baltagi*et al*. (2009) address Rajan and Zingales' (2003) hypothesis,utilizingdatafor both developing and industrialized countries. They find that both trade and financial openness are statistically significant determinants of banking sector development and that opening up either trade or finance without opening up the other could still generate gains in financial development. The empirical results pertaining to developing countriesof Law (2009), nonetheless, show that the simultaneous opening of trade and capital accounts has apositive impact on financial development, which appears to support Rajan and Zingales' hypothesis. Law notes that his finding shouldbe interpreted with caution because his sample countries are from the developing world, where the financial sector is mostly driven by the banking sector.

To enhance the understanding of the relationship between trade/financial openness and financial development in different countries, there is value in performing studies on individual countries with a diverse set of measures of financial development, when the relevant panel data for individual countries are obtainable (Zhang *et al*., 2015). In this paper, we adopt such an approach to gain insight into the dynamic impact of trade openness and financial openness on financial development in China, whose high economic growth over the recent decade has received great attention in the world and where financial development (particularlysize indicators) also appears to have progressed dramatically since the mid-1990s (Zhang *et al*., 2012).

In addition to using a unique panel data set for 30 Chinese provinces over the period from 2000 to 2009, our work contributes to the literature by considering different aspects of financial development in both banking and capital market sectors (i.e. indirect finance and direct finance sectors) and examining the effects of openness on the different indicators of financial

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[1]The relevant literature has focused mainly on two variables relation between trade openness and financial development (Beck, 2002; Svaleryd and Vlachos, 2002; Do and Levchenko, 2004; Braun and Raddatz, 2005; Mishkin, 2009; Kim *et al*., 2010), financial openness and financial development (Levine, 2001; Chinn and Ito, 2006), and financial openness and trade openness (Aizenman and Noy, 2009).

development. The empirical results of the paper show that both trade and financial openness have positive impact onfinancial efficiency, but that openness has a negative impact on the size of financial development. The baseline findings are robust to alternative measures of financial development for both the indirect and direct financial sectors in China.

These findings also constitute an interesting story of political economy of financial resources distribution in China. In particular, there is a mismatch problem (negative relation) between financial development and trade openness at provincial level. The cause of this problem is that financial resource distribution and allocation has been non-market-based with notable local government interventions, whereas trade business between China and the world has been market-based with current account opening up since China's access to the World Trade Organization in 2001. The distorted financial resource distribution system may explain the repression of financial efficiency and expansion of financial size in provinces with either low trade openness or low financial openness.

The remainder ofthis paper is organized as follows:Section 2presents the model specification and estimation methods.Section 3describes the data used in the empirical work and some stylized facts about openness and financial development in China.Section 4 provides the estimation results, followed by Section 5, which discussesthe implications of the empirical results.Section 6concludes the paper.

2. Model and estimation method

The aim of our empirical model specification is to investigate the effects of trade and financial openness on different indicators of financial development in China. Since financial development indicators are likely to display considerable persistence, we specify a dynamic log-linear equation for financial development that includes a lagged dependent variable:

$$lnFD_{it} = \beta_0 + \gamma lnFD_{it-1} + \beta_1 lnTO_{it} + \beta_2 lnFO_{it} + \beta_3 lnrgdp_{it}$$
$$+\beta_4 lngov_{it} +\beta_5 lnstate_{it} +\beta_6 lnenroll_{it} + \mu_{it} \quad (1)$$

whereFD is an indicator of financial development, TO is trade openness, and FO is financial openness. In addition, $rgdp$, gov, $state,$ and $enroll$ are control variables that denote the real per capita gross domestic product (GDP), government spending, the share of industrial production of state-owned enterprises (SOEs, as a percentage of total industrial production), and the gross enrollment ratio, respectively. The specification error term μ_{it} contains cross-sectional and time-specific fixed effects:

$$\mu_{it} = \mu_i + \varepsilon_t + v_{it} \quad (2)$$

where$v_{it}$is assumed to be independent and identically distributed.Model (1) postulates that financial development is determined by trade and financial openness, in conjunction with a set ofconditioning variables, namely, the lag of financialdevelopment, thestage of economic development (captured by per capita income), and province-specific factors.

The inclusion of the lagged dependent variable in Model (1) implies a correlation between the regressors and the error term, since lagged financial development depends on the lagged error term, which is a function of the crosssection-specific effect. Because of thiscorrelation, a dynamic panel data estimation of Eq. (1) suffers from theNickell (1981) bias, which disappears only if T tends to infinity. Thepreferred estimator in this case is the dynamic generalized method of moments (GMM), as suggested by Arellano andBond (1991), which basically differences the model to get rid of crosssection-specific effects or any time-invariant province-specific variable.This also eliminates any endogeneity that may be caused by thecorrelation of these province specific effects and the regressors.

The moment conditions utilize the orthogonality conditionsbetween the differenced errors and the lagged values of the dependentvariable. This assumes that the original disturbances in Eq. (1)are serially uncorrelated and that the differenced error is, therefore,a first-order moving average (i.e.,MA(1)) with a unit root. To this end, two diagnostics are computed using theArellano–Bond GMM procedure to test for first-and second-order serial correlation in the disturbances. We should reject the null ofthe absence of first-order serial correlation and not reject the absence ofsecond-order serial correlation.

A special feature of the dynamic panel dataGMMestimation is that thenumber of moment conditions increases with T. Therefore, a Sargantest is performed to test the over-identification restrictions. There isconvincing evidence that too many moment conditions introduce biasat the same time as increasing efficiency. It is, therefore, suggested that a subset ofthese moment conditions be used to take advantage of the trade-offbetween the reduction in bias and loss in efficiency (Baltagi*et al*.,2009). Besides, unlike ina cross-country study, there are no obvious differences in the legal and political system across provinces in China; hence it is unreasonable to use the legal and political systems as instrumental variables, as practiced in the literature. We therefore use two lags of the right-hand side regressors (excluding the control variables, which are treated as exogenous) as instrumental variables and estimate Model (1) by using the Arellano–Bond difference GMM estimator.

3. Data and measurement

This section describes the data for the variables used in the empirical analysis. In all, we consider two different aspects of financial development, namely, size and efficiency, and analyze the effects of trade and financial openness on these different measures of financial development in 30 provinces of China over the period from 2000 to 2009. The regression analyses also involve control variables that characterize the features of thedifferent Chinese provinces. All our variables are measured at the provincial level.A description of the underlying data, measurement, and some stylized facts is presented below.

3.1. Measures of financial development

Several measures of financial development have been suggested by and employed incross-country studies, includingthe ratio of liquid liabilities of the financial systemto the nominal GDP (Levine *et al*., 2000), the ratio of deposits to the GDP (Rajan and Zingales, 2003), the ratio of credits to the private sector to the GDP (Levine *et al*., 2000), and the ratio of stock market capitalizationto the GDP (Rajan and Zingales, 2003; Baltagi*et al*., 2009). Several international non-governmental organizations have also developed comprehensive indices to measure financial development among different economies, including the World Bank[2] and the World Economic Forum[3]. By definition, these measures can be broadly categorized into measurements of the size (e.g.,total liabilities or total credits) and efficiency (e.g., proportion of private credit) of financial development.

To provide a comprehensive lensfor financial development in China, we go further than the traditional measures of financial development used in the literature and employ two sets of indicators to capture the size and efficiency aspects of financial development. The use of different measures can capture different aspects of financial development, which is particularly important in depicting the (distorted)nature of the state-dominatedfinancial system in China. In addition, for both the size and efficiency measures, we use several sub-indicators for each

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[2] The financial development indicators in the Global Financial Development Database, World Bank.
[3]The financial development index in the Financial Development Report, published by the World Economic Forum.

measure to ensure the robustness of the baseline results and to accommodate the alternative measures used in the literature.

Note that the financial system in China has been a bank-based system with banking sector as a dominant component. However, Chinese capital market has witnessed rapid development as a direct financial intermediary since the early 2000s. Therefore, we utilize measures of financial development to cover both banking sector development and capital market development in each of the underlying 30 provinces of China.

Specifically, our first measure of financial development is the size indicator, which is measured by the following two subsets of variables. The first subset of variables is based on development of indirect finance (i.e., banking sector), which includes the following two indicators:

(1)the ratio of total loans in the financial system (including both banking and non-banking financial institutions, e.g., trust companies, credit unions, and microfinance companies, etc.) to the nominal GDP(denoted DEPT); it measures the overall depth of financial intermediation in China (Lu and Yao, 2009);

(2) the ratio of total household savings to nominal GDP (denotedSAV); it serves as a proxy for China's financial intermediary development(Guariglia and Poncet, 2008).[4]

The second subsetof size indicatoris based on development of direct finance (i.e., capital market). Specifically, we consider stock market development in the underlying provinces. The stock market data (including both Shanghai and Shenzhen A share markets) for each province is based on the administrative location (i.e. province)where the listed companies are registered[5]. The measures include the following three indicators:

(3)stock market capitalization as percentage of nominal GDP (denoted SMC);

(4)total value of circulated shares as percentage of nominal GDP (VCS);

(5)the number of listed firms in each province as percentage of total number of listed firms in all provinces (LFQ).

Our second measure of financial development is financial efficiency. It is widely believed that financial repression and distortion areintrinsic characteristics of the Chinese financial system, because of the predominance of inefficient state-owned banks(Allen *et al*., 2013). Hence, it is sensible to consider an efficiency measure for financial development in China. Two subsets of indicators are used in this paper. The first subsetis based on the indirect finance, which includes the following two indicators:

(6) the ratio of total capital formation (i.e.,fixed assets acquired plus net inventory value) to total deposits in the financial system (denotedFTD). It measuresthe efficiency of the transformation of savings into capital investment.Since capital remains the foundation for economic operationsand savings can contribute an incrementalvalue only when they are transformed into capital and enter production areas, a higher FTD represents higher efficiency in wealth creation.

(7) the ratio of credit allocated to private enterprises (denoted PRV) to total domestic credit (denoted PRV); this is a conventional measure of financial efficiency in the literature. In a banking-dominated financial system such asthat of China, private credit is probably the most important financial efficiency indicator, because it measures the extent to which private firms

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[4]This indicator excludes corporate deposits, which may be affected by central government credit policies.

[5] Under the current regulation system in China, whether a company can be listed and how many companies can be listed is closely related to whether and how the corresponding province can obtain financial resources.

have the opportunity to obtain bank loans (Baltagi*et al*., 2009) and measures the ease with which firms with sound projects can do so (Rajan and Zingales, 2003).

The second subset of efficiency indicator is used to measure the development of direct finance, including the following two indicators:

(8)the number of listed private firmsin each province as percentage of total number of listed firms in the underlying province (LPF);

(9)turnover rate (weighted average) of the stocks of the firms in each province (ATR).

To summarize, the size indicators of financial development include DEPT and SAV for indirect finance sector, and SMC, VCS, and LFQ for direct finance sector; the efficiency indicators of financial development include FTD and PRV for indirect finance, and LPF, and ATR for direct finance, respectively.

3.2. Measures of trade and financial openness

Trade openness depicts the level at which countries or economies allow trade or trade with other countries or economies. In this paper, trade openness (TO) is defined at a provincial level andis measured by the ratio of total trade (i.e.,exports plus imports) to the nominal GDP in each province of China.

The measure of financial openness (FO) is less straightforward than the measure of trade openness. There are two alternative measures of financial openness used in the literature, categorized as de facto and de jure, respectively. The de facto measure was developed byLane and Milesi-Ferretti (2007)and is defined as the volume of a country's (or region's) foreign assets and liabilities as a percentage of its GDP. The de jure measure was proposed by Chinn and Ito (2006) and can be constructed from dummy variables that codify restrictions on cross-border financial transactions. Each measure of financial openness has its strengths and weaknesses. The de facto measure is less susceptible to endogeneity than the de jure measure, while the de jure measure may be better grounded theoretically (for a comprehensive discussion on the issue, see Baltagi*et al*.,2009).

Since it is difficult to determinewhich measure of financial openness is superior to the other, one may utilize both the de facto and de jure measures of financial openness in an analysis if the data for both measures are available. In this paper, we adopt the de facto measure of financial openness because of the availability of data. The variable is constructed as the ratio of foreign direct investment (FDI) to the GDP at the level of the Chinese provinces.

3.3. Control variables

Alongside the above variables, we include relevant control variables in the underlying modelto capture the provincial features of economic performance and social development. Specifically, the control variables include the real per capita GDP (*rgdp*), the ratio of government spending tothe GDP (*gov*), the ratio of the industrial output of the state-owned sector to total industrial output (*state*), and the gross enrollment ratio (*enroll*), which is calculated as the ratio of the number of individuals actually enrolled in schoolto the number of children who are of school age in the relevant province.

These control variables are potentially relevant to financial development. For instance, it is widely acknowledged in the financial development and economic growth literature that real economic performance (e.g.,real per capita GDP) is related to financial development. In relation to this, government spending and improvements in education can enhance economic development (Dollar, 1992; Barro and Sala-i-Martin, 1995) and this,in turn,generally affectsfinancial development. Moreover, the share of the industrial output of the state-owned sector captures features of provincial economic development that also relate to regional

financial development. In particular, a high level of stateownership in a regional economy representshigh financial distortion andlow efficiency of the allocation of financial resources in the region (Boyreau-Debray, 2003; Guariglia and Poncet, 2008).

3.4.Data sources and statistical summary

The raw data for constructing the above variables are obtained from various sources. The data for the variables relevant to the banking and other financial sectorsare taken from annual issues of China's Finance and Banking Almanac. The data for the stock market are obtained from RESSET, WIND, and CSMAR databases. The data for other variables are obtained from official publications: the China Statistical Yearbooks and Provincial Statistical Yearbooks. Note that the indicatorof PRV is obtained from the National Economic Research InstituteIndex of the Marketization of China's Provinces 2011 report (Fan and Wang, 2011) and we use the final indexation results. Table 1summarizes descriptive statistics for the underlying variablesand provides an average numerical impression of the underlying variables (measures) used in our empirical analysis.

Table 1: Summary statistics of the variables

description		Mean	Median	Maximum	Minimum	Std.
Size (indirect finance)	DEPT	1.022	0.993	2.252	0.533	0.299
Size (indirect finance)	SAV	0.900	0.680	7.226	0.378	1.090
Size (direct finance)	SMC	0.375	0.239	2.460	0.054	0.403
Size (direct finance)	VCS	0.667	0.339	7.093	0.062	0.894
Size (direct finance)	LFQ	0.033	0.022	0.129	0.006	0.027
Efficiency (indirect)	FTD	0.740	0.705	1.920	0.350	0.239
Efficiency (indirect)	PRV	7.939	7.915	14.65	0.000	3.620
Efficiency (direct)	LPF	0.382	0.364	0.784	0.071	0.132
Efficiency (direct)	ATR	442.4	365.6	2642.8	145.5	292.5
Trade openness	TO	0.331	0.125	1.721	0.037	0.420
Financial openness	FO	0.030	0.023	0.146	0.001	0.025
Control variables	rgdp	0.154	0.146	0.478	0.021	0.066
	gov	0.163	0.149	0.450	0.069	0.066
	state	0.508	0.518	0.891	0.108	0.203
	enroll	0.991	0.996	1.000	0.816	0.015

Note: This table reportsthe descriptive statistics of the variables used in the empirical analysis across 30 major provinces in China for the period from 2000 to 2009.

4. Estimation results

4.1.Estimation results for the size indicators of financial development

Table 2reports the regression results pertaining to the two subsets ofsizemeasures of financial development as dependent variables. In all, there are fiveregressions, corresponding to the indirect and direct financial development, respectively. Several interesting results merit discussion.

First, the lagged dependent variable in all regressions is positive and statistically significant at the 1% level, suggesting that financial development indicators indeed display considerable persistence. The persistence estimates are particularly high in the regressions for the size indicators and relatively small in the regressions for the efficiency indicators. This is

unsurprising: Financial development indicators that are based on size are likely to display high persistence, since the size of the banking system at any given time, for example, is highly history dependent.

Second, the impact of openness on the different sets of indicators of financial development shows substantial differences. For indirect finance sector, in the regressions of the size indicators, both trade openness and financial openness enter with negative and significant coefficients (except for the regression of FO on DEPT). For the direct finance sector, trade openness also negatively affects the size indicators of financial development. Interestingly, however, financial openness exerts positive impact on the size indictors of direct financial development.

Finally, the results of the diagnostic tests are generally satisfactory. The Sargan tests do not reject the over-identification restrictions in all regressions. Additionally, the absence of first-order autocorrelation is rejected in three out of four cases and the absence of second-order autocorrelation is not rejected in all cases.

Table 2: Dynamic GMM estimation results on size of Model (1)

	Indirect Finance		Direct Finance		
	(1)	(2)	(3)	(4)	(5)
	lnDEPT	lnSAV	lnSMC	lnVCS	lnLFQ
lnFD(-1)	0.828***	0.651***	0.374***	0.235***	0.757***
	(0.030)	(0.025)	(0.014)	(0.011)	(0.0706)
lnTO	-0.257***	-0.103***	-0.679***	-1.007***	-0.0271
	(0.023)	(0.019)	(0.0601)	(0.154)	(0.0254)
lnFO	0.004	-0.033***	0.505***	0.757***	0.0477***
	(0.016)	(0.013)	(0.042)	(0.122)	(0.0114)
lnrgdp	-0.006	-0.044*	0.335***	2.375***	0.0931*
	(0.025)	(0.020)	(0.130)	(0.231)	(0.0507)
lngov	0.397***	0.293***	0.311*	0.360	-0.163**
	(0.043)	(0.052)	(0.166)	(0.350)	(0.0763)
lnstate	0.061	0.130***	0.431**	0.792***	0.130***
	(0.046)	(0.018)	(0.187)	(0.270)	(0.0442)
lnenroll	-1.001*	-0.048	-1.002	-1.645	-0.901***
	(0.360)	(0.217)	(0.917)	(2.282)	(0.250)
Sargan test (p-value)	0.999	0.999	0.998	0.998	0.999
Autocorrelation test					
First order (p-value)	0.036	0.005	0.000	0.000	0.013
Second order(p-value)	0.169	0.577	0.000	0.000	0.556
Number of time periods	8	8	8	8	8
Number of provinces	30	30	30	30	30
Observations	240	240	240	240	240

Note: The table reports the Arellano–Bond dynamic GMM estimation results; the sample spans 2000–2009;standard errors are reported in parentheses;*** , ** , and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

4.2.Estimation results for the efficiency indicators of financial development

Table 3 reports the regression results pertaining to the two subsets ofefficiency measures of financial development as dependent variables. In all, there are four regressions, corresponding

to the indirect and direct financial development, respectively.First, the lagged dependent variable in all regressions is positive and statistically significant at the 1% level, suggesting again that financial development indicators exhibit significant persistence. Second, in most cases, both trade and financial development exert significantly positive impact on financial efficiency. Although the coefficient on trade openness is significantly negative in the regression of LPF as dependent variables, the coefficient estimate is quantitatively very small.

Overall, the baseline estimation results suggest that openness has different impacts on different sets of indicators of financial development in China. For the indirect finance (i.e. banking sector), both trade and financial openness negatively affect the size indicators, while they positively drive the efficiency indicators of financial development. We note that the negative impact of openness on the size indicator is in contrast to the finding in most cross-country studies of a positive link between openness and financial development in general. For the direct financial sector, although trade openness also exerts negative impact on financial development, financial openness tends to enhance financial development. Of course, the enhancement effect of financial openness on capital market development is consistent with the nature (and definitions) of financial openness and capital market development. The next section embarks on the implications of different impact of openness on the size and efficiency of financial development in China.

Table 3: Dynamic GMM estimation results on efficiency of Model (1)

	Indirect Finance		Direct Finance	
	(1)	(2)	(3)	(4)
	lnFTD	lnPRV	lnLPF	lnATR
lnFD(-1)	0.784***	0.213***	0.571***	0.048***
	(0.019)	(0.005)	(0.046)	(0.006)
lnTO	0.222***	-0.031	-0.042***	0.170**
	(0.044)	(0.055)	(0.016)	(0.076)
lnFO	-0.024	0.156***	0.023	0.219***
	(0.022)	(0.041)	(0.019)	(0.055)
lnrgdp	0.001	1.115***	0.133***	1.652***
	(0.059)	(0.118)	(0.021)	(0.120)
lngov	0.027	-0.957***	-0.071*	-0.175
	(0.121)	(0.216)	(0.037)	(0.210)
lnstate	-0.113	-0.509***	0.034	0.152
	(0.099)	(0.145)	(0.023)	(0.210)
lnenroll	0.628	4.498***	-0.297	0.438
	(0.466)	(0.557)	(0.343)	(1.231)
Sargan test (p-value)	1.000	1.000	1.000	0.999
Autocorrelation test				
First order (p-value)	0.001	0.313	0.029	0.000
Second order(p-value)	0.989	0.241	0.551	0.014
Number of time periods	8	8	8	8
Number of provinces	30	30	30	30
Observations	240	240	240	240

Note: This table reports the Arellano–Bond dynamic GMM estimation results; the sample spans 2000–2009;standard errors are reported in the parentheses.

5. Implications

This section discusses the implications of the different impacts of openness on the different indicators of financial development in China. We provide explanations of the impact of openness on the size indicator first and then the efficiency indicators in China. In each case, we distinguish between the roles of trade openness and financial openness in regard to financial development.

5.1.The impact of openness on financial size

5.1.1 The impact of trade openness on financial size

The impact of trade openness on both credit and capital market is negative。 The finding that trade openness has a negative impact on the size indicator of financial development is in contrast tothe existingstudies. For example,Ginebri*et al*. (2001),Beck (2002),Svaleryd and Vlachos(2002),Aizenman(2008), and Mishkin(2009) all find a positive link between trade openness and financial development. Our finding may indicate that,in the short run, greater exposure to competition, technology, and changes in the prices of factors and products during trade openness results in higher uncertainty and less investmentand thereby slowsdown a country's financial development. This implication is consistent with thefinding in Kim *et al*. (2010).

The negative impact of trade openness on the size of financial development isattributed to the mismatch betweenthe distribution ofthe types of China's trading companies (in terms of ownership) and the allocation of financial resources over the past decade(Zhang *et al*., 2015). To be clear, the distribution of trading companies refers to the proportion of each type of firm taking a share in China's foreign trade and the distribution of financial resources refers to the proportion of financial (credit) resources distributed to or obtained by different types of firms.

Table 4 illustrates thedistribution of China's export trading companies for the different types of firms during the period between 2000 and 2009. It shows that foreign-invested enterprises (FIEs) maintained the highest shares of exports (above 50%) during the entire period of the last decade, while collectivelyownedenterprises (COEs) had the lowest shares of exports over most of the sample period. More interestingly (importantly), the roles played by state-owned enterprises (SOEs)and private firms(PREs) in Chinese exports have switched since 2006:Since 2006,PREs have contributed more than SOEs to total exports.

The changes in the structure of China's exporting companies in terms of firm ownershipimply that PREs have greater export competitiveness than SOEs. Although the PREs are usually short innational policy support and fiscal subsidies and are inferior to SOEs in regard to capital accumulation, technological levels, and other initial conditions, they have more flexible operational mechanisms, faster reactions to external demand, and a better structure of production factors that fit China's factor endowment structure.

Table 4: Shares of China's exports byfirm ownership: 2000–2012 (%)

	SOEs	FLEs	COEs	PREs
2000	46.73	47.93	4.24	1.10
2001	42.54	50.06	5.34	2.05
2002	37.73	52.21	5.79	4.26
2003	31.49	54.83	5.73	7.95
2004	25.89	57.07	5.36	11.69

2005	22.15	58.30	4.79	14.76
2006	19.75	58.18	4.24	17.83
2007	18.46	57.10	3.85	20.59
2008	18.01	55.34	3.83	22.82
2009	15.89	55.94	3.37	24.79

As trade openness rises, the PREs become more active than the SOEs in exportactivities and, as a result,may demand more financial resources. However, it is well known that financial repression and distortion are widespread across China's financial system. It has been very difficult for PREs to obtain bank credit support or financial resources or, more generally, financial resources through formal financial channels. There is an apparent mismatchwith the rising involvement ofprivate firms in Chinese exporting activities. This mismatch may be the result of government control over financial institutions, which leads to a misallocation of financial capital between PREs andSOEs(Boyreau-Debray and Wei, 2005).

Most private firms inChina are small or mediumsized and intrinsically have a higher risk of default than SOEs (which are too big to fail). Therefore, it may be unsurprising to observe that banks discriminateagainst private firms and are reluctant to lend to them. As a matter of fact, the prevailing view of banks in Chinais that lending to PREs isfar riskier than lending toSOEs, because oftheshort credit history of PREs and their lower chances of being bailed out by the government in turbulent times. According to a report on the development of small and medium-sized enterprises in China conducted by the All-China Federation of Industry and Commerce in 2012, about 90% of the PREs questionedwere unable to obtain loans from banks. Over the three years prior to the date of the report, 62% of the funds for these firms camefrom private lending.

Tocomparethe financial resources (loans) obtained by PREs with those obtained by SOEs, we calculate the allocations of total loans to all types of domestic enterprises in China in 2010 and 2011 (subject to data availability). The results summarized in Table 5show that loans allocated to private firms are indeed much smaller than those distributed to state-owned firms are. The percentage of loans made to SOEs is above 66%, while the percentage of loans to PREs is below 25%. There appear to be subtle changesin the proportion of loans distributed to SOEs and PREs over time. In 2010, for example, the percentage of loans obtained by SOEs is about 3.3 times that obtained by PREs. In 2011, however, the percentage of loans obtained by SOEs decreased to 2.75 timesthat obtained by PREs.

Table 5: Distribution of total loans to domestic enterprisesin China (%)

	2010	2011
SOEs	69	66
PREs	21	24
COEs	5	5
Others	4	4

Note: This table reports the distribution of total loans from allfinancial institutions in China (including foreign-funded institutions).The raw data are obtained from China Financial Year Book."Others" refer to Hong Kong, Macao, and Taiwan, and foreign-holding enterprises in China.

Despite the notable changes in the proportions of loans obtained by SOEs and PREs over time, SOEs occupy the dominant position in obtaining financing resources in China. This dominant position of the SOEs in finance does not match the changing distribution of trading companies in terms of firm ownership, discussed above. To put it bluntly, the PREs are starting to play a more important role in exporting activities, while the SOEs remain dominant in

obtaining financing resources. This is equivalent to saying that there will be fewer financing resources (i.e.,the size of financial development will decrease) when China's trade is more open, since PREs will only obtain a small proportion of the financing resources. This mismatch betweenthe distribution of China's trading companies and the allocation of financing resources over the past decade goes a long way toward explaining the negative link between trade openness and the size indicator for financial development in China.

From the perspective of direct finance, our results suggest that trade openness exerts negative impact on capitalization of real economy (i.e. market value of stocks as percentage of GDP). This finding indicates that provinces with higher level of trade openness have lower capitalization. This is not surprising because the distribution of capital market resource is not in line with the level of trade openness of individual provinces in China. Because private firms constitute a larger proportion of trade sector than state-owned enterprises, the provinces with higher level of trade openness generally have more private firms than the provinces with lower level of trade openness.

5.1.2 The impact of financial openness on financial size

The impact of financial openness on the credit market is negative, whereas the impact of the financial openness on the capital market is positive. In terms of the impact of financial openness on financial development in China, we believe that the negative impact of financial openness on the size indicator in credit market reflects the substitution effect of foreign capital for domestic capital. Against the background of financial repression in China, many enterprises, especially non-SOEs, undertaken very high financing costs from domestic banks. They will thereforeincrease their financial dependence on foreign capital while decreasing their dependence on domestic capital. Therefore, increasing financial openness is likely to reduce the amount of domestic finance.

In terms of the positive impact of financial openness on capital market, we believe that financial openness brings more foreign capital inflows to Chinese capital market. Indeed, a sizable number of studies have shown that financial openness can promote domestic capital market development. Although China implements regulations on its capital account and Chinese financial market is, to a large extent, not open to foreign investors, there are still notable amount of short-term capital inflows which eventually invest in the capital market.

5.2.The impact of openness on financial efficiency

5.2.1 The impact of trade openness on financial efficiency

For efficiency indicator, the impact of trade openness on credit market is positive, while that on the development of capital market is uncertain. Two points are related to this finding. First, higher trade openness means that more and more enterprises are involved in the production, processing and relevant services in foreign trade industry, most of which are small and medium-sized private enterprises. With the increase of their importance in the economy, financial institutions have to pay close attention to their financing needs by initiatively offering credit service to those with good qualification. On the other hand, because of the large ratio that import and export trade contributes to the economy growth, government gradually pays closer attention to the financing needs of small and medium-sized foreign trade enterprises by requiring financial institutions to support their loan demands. Therefore, not only state-owned big banks create some trade based financing products, small and medium-sized banks together with small loan companies also start to provide credit services to small and medium-sized enterprises. All of these changes enhance the allocative efficiency of

financial resources in China. Second, the impact of trade openness on the development of capital market is uncertain, and the coefficient and significance level both reflect the weak impact. Therefore, trade openness is not enough to enhance the development of capital market.

5.2.2 The impact of financial openness onefficiency indicator

First, in both credit market and capital market, the impact of financial openness on efficiency indicator is positive. The positive link between financial openness and the efficiency indicator may be related to the positive spillover effect of foreign capital inflows. Indeed, Levine (2001) finds that liberalizing restrictions on international portfolio flows tends to enhance stock market liquidity and allowing for greater foreign bank presence tends to enhance the efficiency of the domestic banking system. In the case of China, foreign capital inflows increase the amount of capital formation and financial efficiency asmeasured by the ratio of total capital formation to total deposits in the financial system (i.e. FTD).

Second, with the growth of FDI, the foreign institutions which provide financial service to foreign institutional investors(e.g. transnational corporations) access to Chinese financial markets. For instance, in year 2000, there was 191 foreign banks providing financial services in China and the total asset was 344.34 US dollars. In year 2009, the number of foreign banks increased to 338 and the total asset climbed to 1,975.11 US dollars (data source: Almanac of China's Finance and Banking, 2001&2010). Because of the inferiority in competing with local banks for some traditional quality customers, foreign financial institutions focus more on taking the advantages of their own products and service to offer private departments with credit services, and they even cultivated some potential quality customers. This increases competition between local and foreign banks in striving for customers in private departments, which enhances bank efficiency as a whole.

Third, private firms are inferior to state-owned firms in obtaining capital market resources in the current apply-and-approve stock public offering system in China. Therefore, only the outstanding private enterprises have the eligibility to be listed in the stock market. Financial openness, i.e. international capital flows, enhances the ratio of private enterprises to be listed in the stock market. This is because international capital flows, e.g. FDI, improve corporate governance of local firms. In most of the cases, companies who have upstream and downstream cooperation with transnational companies, most of which being private companies, will improve management strategiesby communicating with advanced transnational companies. In some situations, foreign capital will become a shareholder of domestic enterprises and offer them with advanced management experience, which increases the likelihood of being listed in the stock market for local firms.

Finally，financial openness also has positive impact on theturnover rate of stock market which reflects the attention of stock market participants pay on the listed firms. It may be noted that the effect of financial openness on turnover rate is indirect. Through spillover effect of openness, for example, companies at growing stage can obtain more capital and higher technology and increase their capabilities of corporate governance. Once listed in the stock market, these companies at growing stage will draw much attention from investors, which boots the development of direct finance.

6. Conclusions

Recent studies of financial development create a new frontier in the field of openness and financial development and provide an important contribution to understanding the nexus between openness and financial development across countries. However, empirical studies

using data from a pool of both developing and industrialized countries seem to provide mixed results. The mixed evidence is unsurprising because the nature of the nexus between openness and financial development may vary between different countries and empirical studies with multi-country data cannot fully capture the diversity of historical experiences, cultural norms, and financial contexts in different countries.In addition, the financial systems in different sample countries may be driven by very different sectors, so that the measurement for financial development needs to cover these differences.

This paper investigates the impact of trade and financial openness on financial development in China. We use panel datafor 30 provinces of China over the period from 2000 to 2009 to account for cross-province differences in and the timeseries variation of financial development in China. More importantly, we distinguish size and efficiency aspects of financial development in both indirect and direct financial sectors. The empirical results suggest thattrade openness and financial openness are generallypositive determinants of financial efficiency, but thatopennesshas a negative impact on the size of financial development.

The empirical results reinforce the mismatch problem betweenthe distribution of China's trading companies and the allocationof financial resources. In essence, it is the result of a misallocation of financial credit and the financial distortion in the Chinese financial system,which is dominatedby the state-owned banks. A positive breakthrough, among many other things, could be the introduction of market-based interest rates and a more flexibleexchange rate system, through whichthe Chinese financial system maybetter cater to the needs of the private sector, which will be the backbone of the Chinese economy in the foreseeable future.

Overall, the paper shows a typical story of openness and financial development in the largest transitional economy. In particular, in such an economy where trade sector is liberalized but financial sector is under liberalized, financial development is likely to be hindered. Therefore, financial development and reform in Chinese economy must be multifaceted. Apparently, liberalization and more generally openness of financial sector, including both capitalaccount and capital market, remains an open issue for policy-makers in China.

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