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Law, finance, and economic growth in China ☆

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Abstract

China is an important counterexample to the findings in the law, institutions, finance, and growth literature: Neither its legal nor financial system is well developed, yet it has one of the fastest growing economies. While the law–finance–growth nexus applies to the State Sector and the Listed Sector, with arguably poorer applicable legal and financial mechanisms, the Private Sector grows much faster than the others and provides most of the economy's growth. The imbalance among the three sectors suggests that alternative financing channels and

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governance mechanisms, such as those based on reputation and relationships, support the growth of the Private Sector.

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1. Introduction

Several related strands of literature on law, institutions, finance, and economic growth have emerged in financial economics in recent years, and their impact on other areas of research has been significant. First, La Porta, Lopez-de-Silanes, Shleifer, Vishny (LLSV hereafter) and others have produced a substantial body of empirical evidence that links the origin of a country's legal system to the country's institutions and financial and economic "outcomes." One of the central results of this literature is that countries with English common-law origin (French civil law origin) provide the strongest (weakest) legal protection to both shareholders and creditors (LLSV, 1998, 2000a). Countries with English origin also seem to have better institutions, including less corrupt governments (LLSV, 1999), more efficient courts (Djankov, La Porta, Lopez-de-Silanes, and Shleifer, DLLS hereafter, 2003), and more informative accounting standards (LLSV, 1998). Better legal protection and better institutions, in turn, lead to better outcomes for the financial system, both at the aggregate and firm levels.[1] Related to the LLSV results, there is a recent body of literature that attempts to understand why and how a country's legal origin affects the country's institutions, and how legal origin and institutions, both jointly and separately, affect economic and financial outcomes.[2]

The second strand of literature champions the view that the development of a financial system that includes a stock market and intermediation contributes to a country's overall economic growth (e.g., McKinnon, 1973). Recently, researchers have strengthened this view by presenting supporting empirical evidence at the country level (e.g., King and Levine, 1993; Levine and Zervos, 1998), as well as at the industry and firm level (e.g., Rajan and Zingales, 1998; Jayaratne and Strahan, 1996). The third strand of literature provides evidence for the link and causality

[1]For example, relative to firms in French-origin countries, firms in English-origin countries have more dispersed shareholder ownership (La Porta, Lopez-de-Silanes, and Shleifer, LLS hereafter, 1999), rely more on external capital markets to raise funds (LLSV, 1997a), have higher Tobin's Q (LLSV, 2002), and can enter a new market or industry more easily (Djankov et al., 2002).

[2]Endeavors by researchers include examining the difference between contracting institutions and property rights institutions (e.g., Johnson et al., 2002; Acemoglu and Johnson, 2003), the endowment of geography and disease environment in former colonial countries (e.g., Acemoglu et al., 2001; Beck et al., 2003a), the legal system's ability to adapt to evolving economic conditions (e.g., Posner, 1973; Beck et al., 2003b), and religion and cultural beliefs (e.g., Greif, 1994; Stulz and Williamson, 2003).

among law, finance, and economic growth at country, industry, and firm level (e.g., Demirgüç-Kunt and Maksimovic, 1998; Levine, 1999; Beck and Levine, 2002).

However, many of the above studies are at the country level, and they treat each country in their sample on an equal-weight basis. For example, among the countries in the LLSV (1998) sample, large diverse countries such as Brazil and India receive the same weight as small homogeneous countries like Jordan and Ecuador. We might expect that small homogeneous countries could have more effective legal systems because they can be closely tailored to these countries' needs. Moreover, most of the studies exclude one of the most important developing countries in the world, China. In this paper, we demonstrate that China is a significant counter-example to the findings of the existing literature on law, institutions, finance, and growth. Despite its poor legal and financial systems, China has one of the fastest growing economies in the world. Using Purchasing Power Parity (PPP hereafter), it presently is the second largest economy, and if current trends continue, will overtake the U.S. and become the largest economy in the world in ten years.

We examine three sectors of the Chinese economy: (1) the *State Sector* includes all companies such that the government has ultimate control (state-owned enterprises, or SOEs); (2) the *Listed Sector* includes all firms that are listed on an exchange and are publicly traded; and, (3) the *Private Sector* includes all the other firms with various types of private and local government ownership.[3] We find that the law-finance-growth nexus established by the existing literature works well for the State and Listed sectors: With poor legal protection of minority and outside investors, (standard) external markets are weak, and the growth of these firms is slow or negative. However, the size, growth, and importance of these two sectors in the economy are dominated by those of the Private Sector. In spite of relatively poorer applicable legal protection and standard financing channels, the Private Sector has been growing much faster than the others and has been contributing to most of the economy's growth. Our conclusion for the imbalance among the three sectors is that there exist effective, alternative financing channels and corporate governance mechanisms, such as those based on reputation and relationships, to support the growth of the Private Sector.

Using measures from the existing literature, we first find that China's law and institutions, including investor protection systems, corporate governance, accounting standards, and quality of government, are significantly less developed than most of the countries in the LLSV (1997a, 1998) and Levine (2002) samples. We also find China's financial system is dominated by a large but underdeveloped banking system that is mainly controlled by the four largest state-owned banks. Its newly established Shanghai Stock Exchange (SHSE hereafter) and ShenZhen Stock Exchange (SZSE hereafter) have been growing very fast since their inception in 1990, but their scale

[3]The Private Sector includes the following types of firms: (1) collective- and jointly-owned companies, where joint ownership among local government, communities, and institutions is forged; and, (2) privately owned companies (but not publicly listed and traded), where controlling owners can be Chinese citizens, investors (or companies) from Taiwan or Hong Kong, or foreign investors (or companies). See Appendix A.4 for more details.

and importance are still not comparable to other channels of financing, in particular the banking sector, for the entire economy.

We next examine separately financing channels, corporate governance, and the growth of firms in each of the three sectors. The State Sector has been shrinking with the ongoing privatization process, which includes firms going public. Our empirical results on the Listed Sector are based on a sample of more than 1,100 firms listed and traded on SHSE and SZSE. First, we find that the equity ownership is concentrated within the State for firms converted from the State Sector, and founders' families for nonstate firms (e.g., Claessens et al., 2000, 2002). Second, the standard corporate governance mechanisms are weak and ineffective in the Listed Sector. Finally, when we examine listed firms' dividend policies and valuations and compare them to those in the LLSV (2000b, 2002) sample firms, we find that both the dividend ratio and firm value of Chinese firms are low compared to similar firms operating in countries with stronger investor protection, consistent with LLSV predictions.

More interesting results are found for the Private Sector. Our evidence is mainly based on a survey of 17 entrepreneurs and executives in Zhejiang and Jiangsu provinces, two of the most developed regions in China. First, the two most important financing channels for these firms during their start-up and subsequent periods are financial intermediaries, including state-owned banks and private credit agencies, and founders' friends and families. Firms have outstanding loans from multiple financial intermediaries, with most of the loans secured by fixed assets or third party guarantees. During a firm's growth period, funds from "ethnic Chinese" investors (from Hong Kong, Taiwan, and other countries) and trade credits from business partners are also important sources. When asked about the prospect of going public, founders and executives list "access to large scale of funding" and "reputation increase" as the most important benefits, and "disclosure of valuable information to competitors and outsiders" and "large amount of fees paid" as the most critical disadvantages of going public.

Secondly, despite the almost nonexistence of formal governance mechanisms, alternative mechanisms have been remarkably effective in the Private Sector. Perhaps the most important of these is the role of reputation and relationships (Greif, 1989, 1993). Without a dominant religion, the most important force shaping China's social values and institutions is the widely held set of beliefs related to Confucius; these beliefs define family and social orders and trust, and are different from western beliefs on the rule of law. Another important mechanism that drives good management and corporate governance is competition. Given the environment of low survivorship during early stages of a firm's development, firms have a strong incentive to gain a comparative advantage. The third important mechanism is the role of local governments. Within the regions that witnessed the most successful economic growth and improvement in living standards, properly motivated government officials support and participate in the growth of Private Sector firms.

Our results on the differences among the three sectors in China challenge the law-and-finance view that it is the legal origin that causes the difference in financial systems, the finance-and-growth view that it is the development of stock markets and a banking system that causes the difference in growth of firms and economies, and

the view supporting the law–finance–growth nexus. Moreover, the success of the Private Sector in China also challenges the view that property rights and the lack of government corruption are crucial in determining financial and economic outcomes. Although our results are based on China, similar "substitutes" based on reputation and relationships may be behind the success of other economies as well, including developed economies. Thus, a thorough examination of these substitutes has more general implications and can provide valuable guidance for many other countries.

Some of our results are consistent with existing research on economies in transition (from Socialist, central planning systems to market-based economies), including Eastern European countries, Russia, Vietnam, and China (e.g., McMillan, 1997; McMillan and Woodruff, 2002). Unlike existing research, our paper provides both aggregate and firm-level evidence on the finance aspects of the Chinese economy, and examines why China differs from other countries studied in the strands of literature on law, institutions, finance, and economic growth.

The rest of the paper is organized as follows. Section 2 compares China's legal and financial systems to those of other countries, and discusses its growth in the State, Listed, and Private Sectors. Section 3 presents evidence on financing channels available to firms in China and other countries. Section 4 examines the Listed Sector. In Section 5, we first provide anecdotal and survey evidence on Private Sector firms, and then discuss alternative financing channels and governance mechanisms. Finally, we conclude in Section 6. Appendix A contains explanations of all the variables that we use in the paper, and Appendix B provides details of our empirical tests on the Listed Sector.

2. Evidence on China's legal and financial systems, and growth in the three sectors

In this section we first provide an assessment of China's entire economy, and then of the status of its legal and financial systems. We next compare China to the countries studied in the existing literature, namely, the LLSV sample and the Levine sample. Finally, we compare the growth in the State, Listed, and Private sectors of China.

2.1. Status of China's economy

Tables 1A and 1B illustrate China's status as one of the most important countries in the world. At the end of 2002, China had a population of 1.28 billion people, the largest of any country. Using simple exchange rate calculations, or US$1 = RMB8.28 *yuan* (in all currency-related calculations throughout the paper unless otherwise specified), we find that China's GDP ranked sixth in the world (left column in Table 1A). However, if we use PPP to recalculate GDPs, China's economy is the second largest behind only the U.S. (middle column of Table 1A). Moreover, with the same PPP approach and assuming that the U.S. economy continues to grow

Table 1A
Comparison of China and LLSV countries: GDP and growth*

China vs. LLSV-Sample Countries*						
Rank	GDP in 2002		GDP in 2002 using PPP**		Average annual growth rate of GDP using PPP (1990–2002)	
	Country	GDP (US$ Bil.)	Country	GDP (Int'l $ Billion)	Country/group of countries	Weighted ave. (%)
1	US (E)[a]	10,416	US (E)	10,138	China	11.3
2	Japan (G)[a]	3,978	China	5,732	English origin[b]	5.0
3	Germany (G)	1,978	Japan (G)	3,261	French origin[b]	3.9
4	UK (E)	1,552	India (E)	2,694	German origin[b]	3.1
5	France (F)[a]	1,409	Germany (G)	2,171	Scandinavian origin[b]	4.0
6	China	1,237	France (F)	1,554		
7	Italy (F)	1,180	UK (E)	1,510		
8	Canada (E)	715	Italy (F)	1,481		
9	Spain (F)	649	Brazil (F)	1,311		
10	Mexico (F)	637	Russia	1,141		

[a]Notes: E, F, G denotes the English, French, and German origin of the country's legal system.
[b]Size-weighted average for countries in LLSV sample. Source for all countries' GDP: World Bank.
*Legal origin follows LLSV category.
**The GDP of each country in 2002 is converted from local currency to international Dollars, use the Purchasing Power Parity (PPP) conversion factor. The PPP conversion factor is obtained from The World Bank Development Indicator (Table 5.6, World Bank. For details on how to calculate the indicator, see "Handbook of the International Program." United Nations, New York, 1992).

Table 1B
Comparison of China and other major emerging economies: GDP and growth

Rank	GDP in 2002*		GDP in 2002 on PPP basis**		Annual growth rate of GDP using PPP (1990–2002)	
	Country	GDP (US $ bil.)	Country	GDP (Int'l $ bil.)	Country	Growth rate (%)
1	China	1,237	China	5,732	China	11.3
2	Mexico (F)	637	India (E)	2,694	India (E)	7.1
3	India (E)	515	Brazil (F)	1,311	Pakistan (E)	5.7
4	Brazil (F)	452	Russia	1,141	Mexico (F)	4.3
5	Russia	346	Mexico (F)	878	Argentina (F)	4.0
6	South Africa (E)	104	South Africa (E)	441	Brazil (F)	4.0
7	Argentina (F)	102	Argentina (F)	401	South Africa (E)	3.5
8	Pakistan (E)	60	Pakistan (E)	291	Russia	−2.2

Notes: "E" ("F") denotes the legal origin of the country as the English common-law system (French civil-law system).

*GDP figures are from the World Bank.

**Similar to Table 1A, the PPP conversion factor is obtained from The World Bank Development Indicator (Table 5.6, World Bank. For details on how to calculate the indicator, see "Handbook of the International Program." United Nations, New York, 1992).

at 4.7% per year and the Chinese economy at 11.3%, it will take only ten years before China overtakes the U.S. to be the largest economy in the world.[4]

It may be more useful to compare China's economic growth with other major emerging economies rather than the most developed countries, since China's rapid growth only started in 1979.[5] In Table 1B we compare China with the seven largest emerging economies in the world. In terms of PPP-adjusted GDP figures in 2002, China is more than twice the size of India, the second largest emerging economy. In terms of the annual growth rate of PPP-adjusted GDPs during 1990 to 2002, China has been growing much faster than India, which has the second highest growth rate during the same period. Moreover, China's population growth during the same period was slow, and its per capita PPP-growth rate is also the highest among the group of emerging economies. With China's recent entrance into the WTO and the large potential market access it can provide, China is poised to play an increasingly significant role in the world economy.

2.2. Legal system

We first examine measures of China's legal system and compare them to the average measures of the 49 countries studied in LLSV (1998). See Appendix A.1 for a list of the definitions of the measures used in the paper. In terms of overall creditor rights (Table 2A), China falls in between the English-origin countries that have the highest measures of protection, and French-origin countries that have the poorest protection. China's shareholder protection shows a similar pattern (Table 2B). Because the distribution of these measures may be heavily skewed toward the tails due to a few "outlier" countries with very high and low scores, we also provide the percentage of countries in the subsamples and the entire sample of LLSV countries that have equal or higher measures than China's (numbers in brackets in Tables 2A and 2B). Almost half of the countries in the French-origin subsample, against which China compares favorably, have equal or better measures of creditor and shareholder rights. The overall evidence thus suggests that the majority of LLSV-sample countries have better creditor and shareholder protection than China.

We obviously cannot draw our conclusions regarding the comparison of legal systems based on Tables 2A and 2B alone. First, the scores on creditor and shareholder rights mainly measure the protection of owners of publicly traded companies, which are recent additions to the economy. More importantly, these

[4]All of China's GNP and GNP growth figures exclude Hong Kong. In 2003, despite the impact of the SARS epidemic, the growth rate of China's GDP was 9.1%, the highest among the largest economies in the world. See World Bank's "World Development Indicators" database (August 2004) for details. The PPP conversion factor we use is obtained from the World Bank Development Indicator ("Handbook of the International Program," United Nations, New York 1992). The growth rate of the U.S. is calculated using the period 1990–2002.

[5]Measured by simple exchange rates, China's GDP in 1980 was US$180.6 billion while in 1990 it reached US$368 billion. Also note that the exchange rate between the RMB and US$ changed from US$1 = 4.25 yuan to 8.28 yuan in 1992, which introduced a significant downward bias for China's GDP figure in 1992. This is why using PPP-adjusted figures to measure GDP and its growth is more appropriate.

Table 2A
A comparison of creditor rights: China and LLSV countries

Country	English origin average	French origin average	German origin average	Scandinavian origin average	LLSV sample average	China
No automatic stay on assets	0.72	0.26	0.67	0.25	0.49	0
Secured creditors first paid	0.89	0.65	1	1	0.81	0
Restrictions for going into reorganization	0.72	0.42	0.33	0.75	0.55	1
Management does not stay in reorganization	0.78	0.26	0.33	0	0.45	1
(Overall) Creditor rights*	3.11 (78%)[a]	1.58 (53%)[a]	2.33 (83%)[a]	2 (75%)[a]	2.3 (68%)[a]	2
Legal reserve required as % of capital	0.01	0.21	0.41	0.16	0.15	0

Source: China—Bankruptcy Law of China (2000); LLSV countries—LLSV (1998).

*Equals the sum of the scores of the four categories above, where 1 = Creditor protection is in the law, 0 otherwise.

[a]Numbers in the bracket indicate percentage of countries in the subsample whose measure is higher or equal to two (China's overall measure).

Table 2B
A comparison of shareholder rights

Country	English origin average	French origin average	German origin average	Scandinavian origin average	LLSV sample average	China
One share—one vote	0.17	0.29	0.33	0	0.22	1
Proxy by mail allowed	0.39	0.05	0	0.25	0.18	0
Shares not blocked before meeting	1	0.57	0.17	1	0.71	0
Cumulative voting/ Proportional representation	0.28	0.29	0.3	0	0.27	0
Oppressed minority	0.94	0.29	0.5	0	0.53	1
Preemptive right to new issue	0.44	0.62	0.33	0.75	0.53	1
Percentage of share capital to call an extraordinary shareholder meeting	0.09	0.15	0.05	0.1	0.11	0.1
Antidirector rights*	4 (94%)[a]	2.33 (45%)[a]	2.33 (33%)[a]	3 (75%)[a]	3 (65%)[a]	3
Mandatory dividend	0	0.11	0	0	0.05	0

Source: China—Company Law and Commercial Codes of China (2000); LLSV countries—LLSV (1998).

*Overall score is the sum of the scores on Rows (2), (3), (4), (5), and (7), where score = 1, when the protection is in the law; 0 otherwise.

[a]Numbers in the bracket indicate percentage of countries in the subsample whose measure is higher or equal to three (China's overall measure).

scores measure the legal system on paper, not in practice: While the Chinese government has adopted various protection measures into the law, from which we calculate the scores, one can argue that a more important measure would be law enforcement. Table 2C provides some evidence in this regard, with all the measures (including those for China) drawn from independent international rating agencies. For two key categories of law enforcement, the rule of law and (government) corruption, China's measures are significantly below all average measures of LLSV-sample countries, regardless of their legal origins. This suggests that the scores of creditor and shareholder protection of China in Tables 2A and 2B are not reliable.

We also compare China's legal system to those of other emerging countries in Table 2D, similar to the growth comparison above. China's corruption index is the worst among the seven developing countries, while its measure of antidirector rights (creditor rights) is only higher than that of India and Mexico (Argentina and Mexico). Hence, the development of China's legal system is not ahead of any of the other major emerging economies, and it is clearly dominated by those that have English common-law origin (India, Pakistan, and South Africa).

In order to have an effective law enforcement system, a country must have an independent and efficient judicial system with a sufficient supply of qualified legal professionals. First, DLLS (2003) compare the efficiency and formalism of the judicial system across 109 countries including China. The results are based on how two specific types of disputes, the eviction of a tenant and collection of a bounced check, are resolved in a country's judicial system. Since both types of disputes are rare events in China, as the real estate market (including the rental market) and the use of personal checks are underdeveloped and limited to a few large cities, their results are not very meaningful for China. On the other hand, the Ministry of Justice of China states that there are 110,000 lawyers and 9,000 law firms as of 2002, while Orts (2001) estimates that there are 150,000 lawyers in China, roughly the same number of licensed attorneys as in the state of California. Lawyers represent only 10–25% of all clients in civil and business cases, and even in criminal prosecutions, lawyers represent defendants in only half of the cases. Among the approximately five million business enterprises in China, only 4% of them currently have regular legal advisers. Moreover, only one-fifth of all lawyers in China have law degrees, and even a lower fraction of judges have formally studied law at a university or college. Needless to say, it will be a long time before China has a strong legal labor force.

Another reason that many new laws are not effectively enforced in China is the intrinsic conflict of interest between "fair play" in practicing law and the monopoly power of the single ruling party, especially in cases in which government officials or their affiliates are involved. Consistent with this argument, La Porta, Lopez-de-Silanes, Pop-Eleches, and Shleifer (LLPS, 2004) find that China ranks among the worst countries in terms of political freedom as well as the protection of property rights. They also find a positive correlation between political freedom (constitutional rules) and measures of economic freedom (property rights, procedures of start-up firm) across countries, and that judicial independence accounts for the positive effect of common-law legal origin on economic freedom. However, the fact that China scores extremely poorly on both political and economic freedoms and yet enjoyed

Table 2C
A comparison of law enforcement

Country	English origin average	French origin average	German origin average	Scandinavian origin average	LLSV sample average	China
Efficiency of judicial system	8.15	6.56	8.54	10	7.67	N/a
Rule of law	6.46	6.05	8.68	10	6.85	5
Corruption	7.06	5.84	8.03	10	6.90	2
Risk of expropriation	7.91	7.46	9.45	9.66	8.05	N/a
Risk of contract repudiation	7.41	6.84	9.47	9.44	7.58	N/a
Accounting rating on accounting standards	69.62	51.17	62.67	74	60.93	N/a

Source: China—International country risk (rating agency); LLSV countries—same as above.

Table 2D
A comparison of legal systems: China and other major emerging economies

	Efficiency of judicial system	Rule of law	Corruption	Anti-director rights	One share- one vote	Creditor rights	Accounting standards
China	N/a	5	2	3	1	2	N/a
India (E)	8	4.17	4.58	2	0	4	57
Pakistan (E)	5	3.03	2.98	4	1	4	N/a
S. Africa (E)	6	4.42	8.92	4	0	4	70
Argentina (F)	6	5.35	6.02	4	0	1	45
Brazil (F)	5.75	6.32	6.32	3	1	2	54
Mexico (F)	6	5.35	4.77	0	0	0	60

Source: China—International country risk (rating agency); all other countries—LLSV sources; ''E'' (''F'') denotes the legal origin of the country as the English common-law system (French civil-law system).

one of the fastest economic growth rates casts doubt on the importance of political freedom and economic freedom as measured in LLPS.

Finally, we comment on the current status of China's accounting system. The reform started in 1992, with the enactment of regulations governing enterprises with foreign investment. Since then, the Accounting Standards for Business Enterprises of China, together with the 13-industry regulation board, have been trying to move China's accounting practice in the Listed Sector toward the IAS (International Accounting Standards). However, the most glaring problem in China's accounting system is the lack of independent, professional auditors, similar to the situation for legal professionals. This implies that the proposed IAS-based standards may be counterproductive within China's current infrastructure: With few auditors understanding and enforcing the new standards, and given the lack of an effective judicial system, embezzlement of company assets and other forms of fraud may occur more frequently under IAS-based standards, as compared to an alternative system with a much simpler set of accounting standards (e.g., Xiang, 1998).

2.3. Financial system

We first examine China's financial system at the aggregate level, including both its financial markets and banking system. We then examine its stock exchanges in more detail and briefly discuss its venture capital markets. Finally, we examine problems in the banking sector.

In Table 3 we compare China's financial system to those of the LLSV-sample countries (LLSV, 1997a, 1998), using measures from Levine (2002). We first compare the size of a country's equity markets and banks relative to that country's GDP. China's stock markets, which have been growing very rapidly since 1990, are smaller than those of most of the other sample countries, both in terms of market capitalization and the total value traded as a fraction of GDP. Notice that "total value traded" is a better measure than "market capitalization" because the latter includes nontradable shares, while the former measures the fraction of total market capitalization traded in the markets, or the "floating supply" of the market. We further discuss this issue in Table 4A of this section and Section 4 below.

In contrast, China's banking system is much more important in terms of size relative to its stock markets, with its ratio of total bank credit to GDP (1.11) higher than even the German-origin countries (with a weighted average of 0.99). However, when we consider bank credit issued (or loans made) to the Private Sector only, China's ratio drops sharply to 0.24, suggesting that most of the bank credit is issued to companies in the State and Listed Sectors. Moreover, China's banking system is not efficient: Its overhead cost to total assets (0.12) is much higher than the average of French-origin countries (0.05), the next-highest group of countries.

China also has the lowest scores for both "Structure activity" and "Structure size" (second panel of Table 3), suggesting that its banking sector is much larger than its financial markets, and this dominance by the banks over markets is stronger than the average of all LLSV-sample countries. In terms of "Structure efficiency," which denotes the relative efficiency of markets vs. banks, China has the highest score,

Table 3
A comparison of financial systems: bank- vs. market-based measures (value-weighted approach)

	Measures	English origin*	French origin*	German origin*	Scandinavian origin*	Sample average	China
Bank and market size	Bank credit/GDP	0.62	0.55	0.99	0.49	0.73	1.11 (0.24)[a]
	Overhead cost/Bank total assets	0.04	0.05	0.02	0.03	0.03	0.12
	Total value traded/GDP	0.31	0.07	0.37	0.08	0.27	0.11
	Market capitalization/GDP	0.58	0.18	0.55	0.25	0.47	0.32
Structure indices: Markets vs. banks**	Structure activity	−0.76	−2.03	−1.14	−1.83	−1.19	−1.07 (0.46)[a]
	Structure size	−0.10	−1.05	−0.77	−0.69	−0.55	−1.24 (0.29)[a]
	Structure efficiency	−4.69	−6.00	−5.17	−6.17	−5.17	−1.48 (−3.07)[a]
	Structure aggregate	1.21	−0.05	0.66	0.13	0.72	N/a
	Structure regulatory	7.02	8.21	10.15	7.72	8.95	16
Financial development (banking and market sectors)	Finance activity	−1.18	−3.38	−0.84	−2.86	−1.58	−0.85 (−2.38)[a]
	Finance size	5.10	4.29	5.22	4.60	4.95	−1.02 (−2.55)[a]
	Finance efficiency	2.18	0.44	2.85	1.04	2.01	−0.60 (1.14)[a]
	Finance aggregate	1.23	0.13	1.47	0.48	1.05	N/A

Notes: All the measures for countries other than China are taken from Levine (2002); measures on China (in Table 3) are calculated using definitions from Levine (2002) (see Appendix A.2 for list of definitions).

Sources: Almanac of China's Finance and Banking (2000); China Statistical Yearbook (2000).

*The numerical results for countries of each legal origin group are calculated based on a value- (GDP of each country) weighted approach.

**Measuring whether a country's financial system is market- or bank-dominated; the higher the measure, the more the system is dominated by markets.

[a]Numbers in bracket indicate bank credit issued to only private sectors (instead of total bank credit).

Table 4A
A comparison of the largest stock markets in the world (2002)

Rank	Stock market	Total market cap (US$ billion)	Concentration (%)	Turnover velocity (%)
1.	NYSE	9,015	61.3	94.8
2.	Tokyo	2,095	60.6	67.9
3.	Nasdaq	1,994	63.1	319.5*
4.	London	1,800	84.5	97.3
5.	Euronext	1,538	72.3	153.6
6.	Deutsche Börse	686	72.0	125.1
7.	Toronto	570	67.8	67.9
8.	Swiss	547	81.2	138.6
9.	Italian	477	66.1	120.7
10.	China (Hong Kong)	463	83.0	39.7
11.	China (domestic)	463	29.4	224.2

Notes:
1. All figures (except those relating to China's domestic exchanges) are from http://www.fibv.com, the website of the international organization of stock exchanges. The Chinese data is from http://www.csrc.gov.cn, the web site for the China Security Regulation Committee (CSRC).
2. All figures relate to the period of 01/01/2002 to 12/31/2002.
3. Concentration is the ratio of the combined market capitalization (including nontradable shares) of firms ranked in the top 5% by capitalization over the total capitalization (including nontradable shares) of all firms listed on the exchange.
4. Turnover velocity is the total turnover for the year expressed as a percentage of the total market capitalization.
*Turnover velocity for Nasdaq includes double counting; the actual figure should be half of the reported figure.

suggesting that its stock markets are actually relatively more efficient than banks compared to other countries. This result is mostly driven by the extremely high overhead costs of China's banking system.

Finally, we compare the development of the entire financial system (''Financial development''), including both banks and markets (last panel of Table 3). Given all other countries' measures are based on private bank credit only, if we only include China's private bank credit, we find that China's overall financial market size (''Finance activity'' and ''Finance size'') is smaller than the LLSV-sample average level, and is only higher than the French-origin countries' average. In terms of the efficiency of the financial system, China's measure is below all subsamples of LLSV countries. Based on the above evidence, we can conclude that China's financial system is dominated by a large but inefficient banking sector.

Financial markets. China's domestic stock exchanges, SHSE and SZSE, with their combined total market capitalization, including non-tradable shares, rank eleventh among the largest stock exchanges in the world at the end of 2002 (Table 4A). In addition, the Hong Kong Stock Exchange (HKSE hereafter), where selected firms from Mainland China can now be listed and traded, is ranked tenth in the world. If we rank the combined size of all stock exchanges in a country, China would rank fifth, behind only the U.S., Japan, the U.K., and France.

As fast as the growth of China's stock markets has been, these markets are not efficient in that prices and investor behavior do not reflect fundamental values of listed firms. In Table 4A, "Concentration" measures the fraction of total market capitalization of an exchange that is coming from the combined capitalization of the largest firms ranked in the top 5% (by capitalization). The dominance of large-cap stocks in China is the lowest among major stock exchanges in the world, with its concentration ratio of 29.4% less than half of that of Tokyo, which has the second-lowest concentration. On the other hand, medium- and small-cap stocks are traded extremely frequently in China, as shown by the high "Turnover Velocity," defined as the total turnover for the year expressed as a percentage of total market cap. China's velocity of 224.2% is even higher than that of NASDAQ,[6] with the well-known trading patterns of many small and medium technology stocks (the concentration ratio of NASDAQ is 63.1%).

Consistent with our findings, Morck et al. (2000) find that stock prices are more synchronous in emerging countries, including China, than in developed countries. They contribute this phenomenon to poor minority investor protection and imperfect regulation of markets in emerging markets. One example is the restriction on short-sales. Bris et al. (2003) find that limiting short-sales contributes to the high co-movement of stock prices, but does not tend to increase the probability of a market crash, as commonly feared by governments in emerging countries.

The inefficiencies in the Chinese stock markets can be attributed to poor and ineffective regulation. Based on a study of securities laws with the focus on the public issuance of new equity in 49 countries (China not included), La Porta, Lopez-de-Silanes, and Shleifer (LLS hereafter, 2003) find that private enforcement of laws through disclosure and liability rules is superior to strong regulation by the government in promoting stock market development. Given China's poor disclosure rules, accounting standards, and judicial systems, the LLS (2003) result can be used to explain the status of China's stock markets. To improve the quality of government regulation, Glaeser et al. (2001) argue that regulators must be properly motivated. The concentration and turnover velocity of China's markets (Table 4A) were actually even higher in the late 1990s, and the improvement is in part due to advances in the quality of regulation.

Next, we briefly examine the role of financial markets in helping firms raise funds (Table 4B). Both the scale and relative importance (compared with other channels of financing) of China's external markets are not significant. For example, for the ratio of external capital and GNP, the LLSV (1997a) sample average is 40%, compared to China's 16% (using only the floating supply or value traded part of the stock market, rather than the total market cap); for the ratio of total debt (including bank loans and bonds) to GNP, the LLSV-sample average is 59%, compared to China's 35%. However, if we include all debt, including bank loans issued to all sectors including

[6]The actual turnover velocity of Nasdaq should be half of the reported figure, 319.5%. This is because unlike NYSE and most other exchanges around the world, Nasdaq dealers report both the buy and sell trades separately, which leads to double counting in the calculation of velocity. See Atkins and Dyl (1997) for more details.

Table 4B
A comparison of external capital markets (mean)

Country	English origin average	French origin average	German origin average	Scandinavian origin average	LLSV sample average	China (2002)
External capital/GNP	0.60	0.21	0.46	0.30	0.40	0.49 (0.16)*
Domestic firms/Pop	35.45	10.00	16.79	27.26	21.59	0.93
IPOs/Population	2.23	0.19	0.12	2.14	1.02	0.05
Total debt/GNP	0.68	0.45	0.97	0.57	0.59	0.35
GDP growth (one-year)	4.30	3.18	5.29	2.42	3.79	6.77
Rule of law	6.46	6.05	8.68	10.00	6.85	5
Antidirector rights	3.39	1.76	2.00	2.50	2.44	3
One share—one vote	0.22	0.24	0.33	0.00	0.22	1
Creditor rights	3.11	1.58	2.33	2.00	2.30	2

Sources: LLSV (1997a) paper; Almanac of China's Finance and Banking (2003).
*External capital/GNP ratio using the floating supply or value traded portion of the market capitalization.

the State Sector, the debt/GNP ratio increases to 79%, suggesting that the majority of debt does not go through the capital markets. We provide firm-level evidence on financing in Section 4 below.

Finally, we briefly discuss China's venture capital markets, which should be regarded as part of the financial markets rather than the intermediation sector (e.g., Allen and Gale, 2000a). It is often argued that one of the reasons the U.S. has been so successful in developing new industries in recent years is the existence of a strong venture capital sector (e.g., Kortum and Lerner, 2000). Consistent with our previous findings, China's venture capital industry, since its inception in the 1980s, is underdeveloped and its role in supporting the growth of young firms is very limited. Moreover, based on interviews conducted with 36 venture capitalists in 24 venture companies, Bruton and Ahlstrom (2002) find that the limited formal rules and regulations are often ineffective, while alternative mechanisms based on reputation and relationship are the norm in all stages and phases of the industry.

In summary, the overall evidence on the comparison of China and other countries' external markets is consistent with LLSV (1997a, 1998) predictions: With an underdeveloped legal system, the fact that China has small external markets comes as no surprise. Fig. 1 compares China's legal system and external financial markets to those of LLSV countries. The horizontal axis measures overall investor protection in each country, while the vertical axis measures the (relative) size and efficiency of that country's external markets.[7] Countries with English common-law systems

[7]Following LLSV, the score on the horizontal axis is the sum of (overall) creditor rights, shareholder rights, rule of law, and government corruption. The score of the vertical axis indicates the distance of a country's overall external markets score (external cap/GNP, domestic firms/Pop, IPOs/Pop, Debt/GNP, and Log GNP) to the mean of all countries, with a positive (negative) figure indicating that this country's overall score is higher (lower) than the mean.

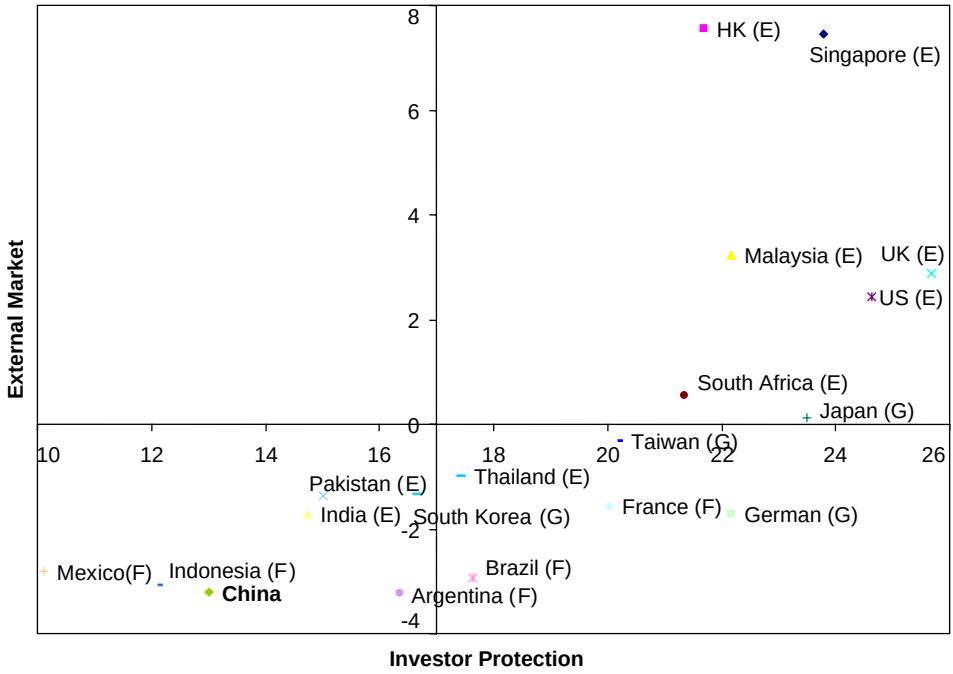


Fig. 1. Comparison of legal and financial systems. It compares China's legal system and external financial markets to those of LLSV countries (LLSV, 1997a, 1998). Following LLSV (1997a, 1998), the score on the horizontal axis measures overall investor protection in a country. It is the sum of (overall) creditor rights, shareholder rights, rule of law, and government corruption. The vertical axis measures the (relative) size and efficiency of that country's external markets. The score of a country measures the distance of the country's overall external markets score (external cap/GNP, domestic firms/Pop, IPOs/Pop, Debt/GNP, and Log GNP) to the mean of all countries, with a positive (negative) figure indicating that this country's overall score is higher (lower) than the mean.

(French civil-law systems) lie in the top-right region (bottom-left region) of the graph, while China is placed close to the bottom-left corner of the graph.

Banking sector. China's banking sector is dominated by four large and inefficient state-owned banks. LLS (2002) show that the government owns 99.45% of the 10 largest commercial banks in China in 1995 (100% in 1970); this ownership level is one of the highest in their sample of 92 countries. Moreover, the LLS result on the negative relation between government ownership of banks and the growth of a country's economy seems to apply to China's State Sector and the status quo of its banking sector. However, high government ownership has not slowed down the growth of the Private Sector.

The most glaring problem for China's banking sector is the amount of nonperforming loans (NPLs hereafter) within the four largest state-owned banks. A large fraction of these bad loans resulted from poor lending decisions made for SOEs, some of which were due to political or other noneconomic reasons. The

additional problem is that data availability on NPLs is limited, which can be viewed as a strategic disclosure decision of the government. However, this lack of disclosure of NPLs only fuels speculations that the problem must be severe. For example, Lardy (1998) argues that if international standards were used, the existing NPLs within the state-owned banks as of the mid-1990s would make these banks' total net worth negative.

Tables 5A and 5B compare NPLs and banking system profitability in China and six other major Asian economies in recent years. Information on China's NPLs first became available in 1998, but the figures in 1998 and 1999 in Table 5A probably significantly under-estimate the actual size. During the period of 2000–2002, China has the largest amount of NPLs among the seven Asian economies, either as a fraction of total new loans made by all banks or as a fraction of GDP in a given year. This comparison includes the period during which Asian countries recovered from the 1997 financial crisis, and the period during which the Japanese banking system

Table 5A
A comparison of nonperforming loans of banking systems

	1997		1998		1999		2000		2001		2002	
China	N/a		2.0	(2.2)	9.5	(10.6)	18.9	(24.9)	16.9	(22.7)	12.6	(15.2)
Hong Kong	1.3	(3.0)	4.3	(10.2)	6.3	(13.9)	5.2	(12.6)	4.9	(12.9)	3.7	(9.6)
India	N/a		7.8	(1.6)	7.0	(1.6)	6.6	(1.6)	4.6	(1.7)	2.2	(0.8)
Indonesia	0.3	(0.2)	11.8	(4.6)	8.1	(2.0)	13.6	(3.2)	9.9	(2.2)	4.5	(0.9)
Japan	2.7	(5.4)	5.1	(10.8)	5.3	(10.9)	5.8	(11.5)	9.2	(15.3)	7.4	(12.8)
South Korea	2.9	(5.1)	4.8	(6.3)	12.9	(12.9)	8.0	(8.6)	3.4	(3.4)	2.5	(2.6)
Taiwan	2.4	(3.2)	3.0	(3.9)	4.0	(5.7)	5.2	(7.6)	6.2	(9.4)	4.1	(5.2)

Notes: NPL is measured as % of total loans made, and as % of GDP (numbers in brackets). Both the loan and NPL are the aggregate of all banks in a country.
Source: The Asian Banker data center 2003. http://www.thesianbanker.com

Table 5B
A cross-country comparison of banking system profitability
The profitability is measured as the return on average equity (ROAE), and return on average assets (ROAA). The latter is presented in the brackets.

	1997		1998		1999		2000		2001		2002	
China	6.6	(0.2)	4.0	(0.2)	3.2	(0.18)	3.9	(0.2)	3.5	(0.2)	4.16	(0.2)
Hong Kong	18.7	(1.8)	11.0	(1.0)	18.2	(1.6)	18.8	(1.6)	15.7	(1.4)	15.6	(1.4)
India	17.0	(0.9)	9.7	(0.5)	14.2	(0.7)	10.9	(0.5)	19.2	(0.9)	19.6	(1.0)
Indonesia	−3.8	(−0.3)	N/a		N/a		15.9	(0.3)	9.7	(0.6)	21.1	(1.4)
Japan	−18.6	(−0.6)	−19.2	(−0.7)	2.7	(0.1)	−0.7	(0.0)	−10.4	(−0.5)	−14.5	(−0.6)
South Korea	−12.5	(−0.6)	−80.4	(−3.0)	−34.0	(−1.5)	−7.0	(−0.3)	15.8	(0.7)	13.1	(0.6)
Taiwan	11.2	(0.9)	9.5	(0.8)	6.9	(0.6)	5.1	(0.4)	4.0	(0.3)	−5.2	(−0.4)

Source: The Asian Banker data center 2003. http://www.theasianbanker.com

was disturbed by the prolonged NPL problem. Moreover, the profitability of China's banking system, measured by the return to equity or assets, is also among the lowest in the same group of economies (Table 5B).

In recent years the Chinese government has taken active measures to resolve this problem. First, four state-owned asset management companies were formed with the goal of assuming these NPLs and liquidating them. Information from these companies' auction data shows that the cash recovery on the bad loans ranges from 8% to 60%. Second, state-owned banks have improved their loan structure by increasing loans made to individual lenders while being more active in risk management and monitoring of loans made to SOEs. For example, the ratio of consumer lending to total loans made for the four state-owned banks increased from 1% in 1998 to 10% in 2002.

Third, there has been a boom in the entry and growth of non-state financial intermediaries, and this trend is expected to continue with more foreign banks entering the domestic credit markets as a result of China's entrance into the WTO. In 1997, total new loans made by the four largest state-owned banks accounted for more than 75% of all new loans, while new loans made by "shareholding" banks accounted for less than 7%. In 2001, the share of new loans made by state-owned banks dropped to 49% while the fraction of new loans made by shareholding banks rose to 23.5%. All the above facts taken together can explain why NPLs have been falling in recent years, as reflected in Table 5A.

To summarize, the continuing effort of reforming and improving the banking system is one of the most important tasks for China in the near future. In fact, China recently announced that its central bank will inject foreign currency reserves into two of the big four state-owned banks, to improve their balance sheets and enhance the likelihood that these banks can go public by the end of 2004. Similar fund injection plans for the other two state-owned banks are also in the works. Given that China's total foreign exchange reserve is US$400 billion while the total amount of NPLs as of 2002 is 15% of GDP, or US$188 billion using the US$1 = 8.26 RMB exchange rate, the foreign reserve itself should be more than enough to remove the NPLs off the books of all the banks in China.[8] Whether the government will do exactly this remains to be seen, but it is clear that the ultimate source of eliminating NPLs lies in overall economic growth. As long as the economy maintains its strong growth momentum so that the government's taxable income also increases (e.g., Sachs and Woo, 1997; Rawski, 2002), the government can always assume the remainder of the NPLs without significantly affecting the economy.

2.4. *Growth in the State, Listed, and Private sectors*

Table 6A compares the growth of industrial output produced in the State and Listed sectors vs. that of the Private Sector from 1996 to 2002. The Private Sector

[8]One potential risk for using foreign reserves is the pressure of significant RMB appreciation relative to US$ and other foreign currencies. See, for example, Broda (2004) and Alesina et al. (2002) on the relationship between exchange regime, trade, and economic performance in developing countries.

Table 6A
Growth rates of the State, Listed, and Private sectors

In this table, Panel A displays the growth rate of "industrial output" for the two sectors in China. The State and Listed sectors includes state-owned and publicly traded companies such that the government holds controlling shares. The Private Sector consists of firms with all other types of ownership structures. Data source for this table is the Chinese Statistical Yearbook 2000, 2001, 2002, and 2003. For each sector, we also calculate the weighted-average growth rate across the selected ownership types. Panel B displays the average growth rate of "investment in fixed assets" for the two sectors.

Growth rate (%)	Panel A: industrial output		Panel B: investment in fixed assets	
Year	State & Listed sectors	Private Sector	State & Listed sectors	Private Sector*
1996	15.9	17.4	10.2	17.3
1997	−0.6	18.9	9.0	6.1
1998	−6.5	10.2	17.4	9.0
1999	5.8	6.8	3.8	7.5
2000	14.0	24.2	3.5	11.4
2001	4.6	9.9	6.7	12.6
2002	6.5	12.5	7.2	16.8
Ave. Annual rate (95–02)	5.4	14.3	8.2	11.5

Sources: China Statistic Yearbooks 2000–2003.

*Includes foreign-owned companies, companies owned by investors from Taiwan and Hong Kong, and TVEs.

dominates the State and Listed sectors in terms of both the size of the output, and the growth trend: Total output in 1999 is US$1200 billion for the Private Sector, while it is around US$400 billion in the State and Listed sectors combined; the Private Sector grew at an annual rate of 14.3% between 1996 and 2002, while the combined State and Listed sectors grew at 5.4% during the same period (Panel A). In addition, the growth rates for investment in fixed assets of these sectors are comparable (Panel B), which implies that the Private Sector is more productive than the State and Listed sectors. Finally, there has been a fundamental change among the State, Listed, and Private sectors in terms of their contribution to the entire economy: The State Sector contributed 76% of China's total industrial output in 1980, but in 1996 it only contributed 28.5%; in 1980, individually owned firms, which are a subset of Private Sector firms, were negligible, but in 1996 they contributed 15.5% of total industrial output; the above trend of the Private Sector replacing the State Sector will continue in the near future.

Table 6B presents the number of nonagricultural employees in the three sectors. The Private Sector is a much more important source for employment opportunities than the other two sectors. Over the period from 1995 to 2002, the Private Sector employed an average of over 70% of all nonagricultural workers, while the Township Village Enterprises (TVEs hereafter), also a subset of Private Sector firms, are by far the most important employer for workers from the rural areas. Moreover, the number of employees working in the Private Sector grew at a rate of 1.5% per year over this seven-year period, while the labor force in the State and Listed sectors retracted. These patterns are particularly important for China, given its vast

Table 6B
Employment in the State, Listed, and Private sectors

Year	1995	1996	1997	1998	1999	2000	2001	2002	95–02 Annual growth rate
*Panel A: number of employees (million)**									
State & Listed sectors	115	116	115	94	89	85	81	77	−5.7%
Private Sector	221	233	233	235	240	233	245	246	1.5%
Panel B: Percentage of total employees belonging to each sector (%)									
State & Listed sectors	34.3	33.3	33.0	28.7	27.2	26.8	24.9	23.8	
Private Sector	65.7	66.7	67.0	71.3	72.8	73.2	75.1	76.2	

Source: China Statistic Yearbooks 2000–2003.
*Indicates non-agricultural employees.

population and potential problem of unemployment. Botero, Djankov, La Porta, Lopez-de-Silanes, and Shleifer (BDLLS, 2003) compare labor laws and social security systems across 85 countries including China, and find that French legal origin, socialist, and poor countries have higher levels of labor regulation than English common-law and rich countries. Their evidence on China excludes the labor force in the rural areas. Given the importance of TVEs in terms of employment, this limits the application of their results to China.

3. Firms' financing sources: Aggregate evidence and cross-country comparisons

In this section we compare, at the aggregate level, how firms raise funds in China and in LLSV-sample countries with the emphasis on emerging economies. It is then worthwhile to study what other channels of financing are playing the role of substituting for external capital markets and standard, textbook financing channels.

3.1. China's most important financing channels

The four most important financing sources for all firms in China, in terms of fixed asset investments, are: (Domestic) bank loans, firms' self-fundraising, state budget, and foreign direct investment. By far the two most important sources of financing channels are self-fundraising and bank loans. Consistent with previous evidence on China's banking sector, bank loans, including loans from the nonstate banks, provide a large amount of funds to firms, and constitute a large fraction of firms' total financing needs. For example, firms in the State Sector rely on bank loans to raise more than 25% of their total financing needs. A similar pattern holds for jointly- and collectively-owned companies, both of which belong to the Private Sector. Our survey evidence below (Section 5) also indicates that bank loans are important financing sources for the Private Sector, especially during the firms' start-up period. Self-fundraising includes proceeds from capital raised from local governments (beyond the state budget), communities, other investors, internal

financing channels such as retained earnings, and all other funds raised domestically by the firms. Since our current data source, the China Statistical Yearbook (2000–02), does not provide the breakdowns of "self-fundraising," we only have the total figures in subsequent tables and graphs.

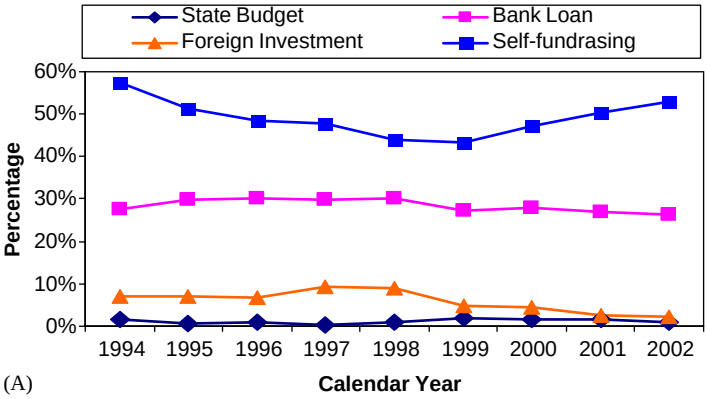
The size of total self-fundraising of all firms grew at an average annual rate of 14% over the period of 1994 to 2002. At the end of 2002, total self-fundraising (for fixed asset investment) reached US$275.5 billion, compared to a total of US$106.6 billion for domestic bank loans for the same year. It is important to point out that equity and bond issuance, which are included in self-fundraising, apply only to the Listed Sector, and account for a small fraction of this category. Moreover, self-fundraising is the most important source of financing for many types of firms. For example, individually owned firms (Private Sector), not surprisingly, rely mostly on self-fundraising (about 90% of total financing). Interestingly, even for state- or quasi-state-owned companies, self-fundraising is also important in that it captures somewhere between 45% and 65% of total financing.

State budget and foreign (direct) investment are the other two important financing sources. As was the case for all socialist countries, China used to rely on a central planning system to allocate the state budget to most of the companies in the country. But the state budget now only contributes 10% of state-owned companies' total funding. On the other hand, foreign investment is comparable to the state budget, both in terms of aggregate size and in terms of the relative importance in firms' financing. This evidence confirms that China has evolved from a centrally planned, closed economy toward an open market economy.

With the knowledge on the four financing channels at the aggregate level, we now focus on different types of firms' financing decisions. The results are presented in Figs. 2A–C. In all of these figures, each of the four connected lines represents the importance of a particular financing channel over the time period 1994–2002, measured by the percentage of firms' total financing coming from this channel.

First, Fig. 2A and B illustrate how firms in the Listed Sector and the State Sector finance their investment (for fixed assets). While the Listed Sector has been growing fast, SOEs are on a downward trend as privatization of these firms is still in progress. Around 30% of publicly traded companies' funding comes from bank loans, and this ratio has been very stable despite the fast growth of the stock markets (Fig. 2A). Around 45% of the Listed Sector's total funding comes from self-fundraising, including internal financing and proceeds from equity and bond issuance. Moreover,

Fig. 2. (A) Financing sources for the Listed Sector; (B) financing sources for the State Sector; (C) financing sources for the Private Sector. A–C examine financing sources (for the investment of fixed assets) of different types of firms in China. In all three figures, each of the four connected lines represents the importance of a particular financing channel over the time period 1994 to 2002, measured by the percentage of firms' total financing coming from this channel. (A) presents financing sources for firms in the Listed Sector (publicly listed and traded), (B) presents results for firms in the State Sector (state-owned firms), while (C) presents results for firms in the Private Sector (all other firms).


State Budget
Bank Loan
Foreign Investment
Self-fundrasing
60%
50%
40%
30%
20%
10%
0%
Percentage
1994
1995
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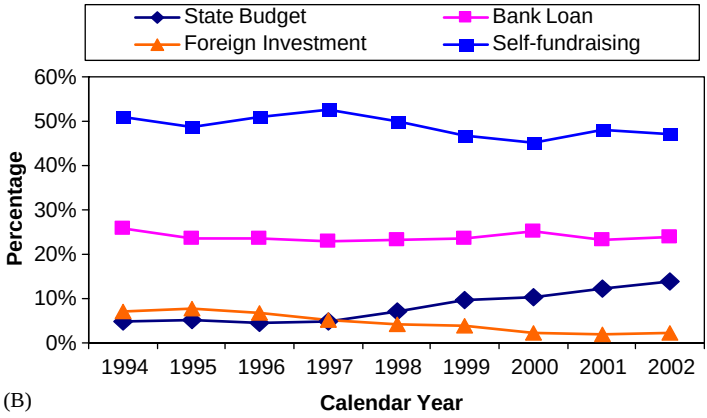
2002
Calendar Year

(A)


State Budget
Bank Loan
Foreign Investment
Self-fundraising
60%
50%
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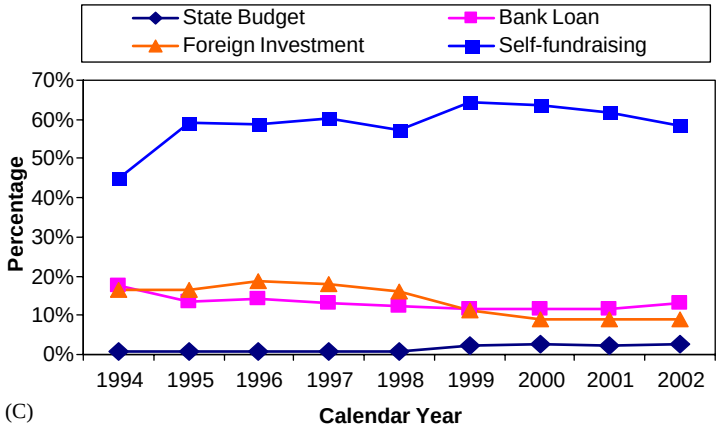
(B)


State Budget
Bank Loan
Foreign Investment
Self-fundraising
70%
60%
50%
40%
30%
20%
10%
0%
Percentage
1994
1995
1996
1997
1998
1999
2000
2001
2002
Calendar Year

(C)

equity and bond sales, which rely on the use of external markets, only constitute a small fraction of total funds raised, compared to internal financing and other forms of fundraising. Combined with the fact that self-fundraising is also the most important source of financing for the State Sector (Fig. 2B), we can conclude that alternative channels of financing are important even for the State and Listed Sectors.

Next, we consider how firms in the Private Sector raise funds (Fig. 2C). Self-fundraising here includes all forms of internal finance, capital raised from family and friends of the founders and managers, and funds raised in the form of private equity and loans. Clearly, this category is by far the most important source of financing, accounting for close to 60% of total funds raised. Moreover, since firms in this sector operate in an environment with poorer legal and financial mechanisms and regulations than those firms in the State and Listed Sectors, all financing sources probably work differently from how they work in the State and Listed Sectors, and those in developed countries. In Section 5 below, we present detailed evidence on how different types of self-fundraising help Private Sector firms at various stages.

3.2. *Comparing financing channels in emerging economies*

We briefly compare financing channels at the aggregate level in China and other major emerging economies. In particular, we relate the aggregate financing channels with the growth of the economy during different growth periods, in order to determine whether the Chinese experience in financing is unique. First, Fig. 3A compares the development of stock markets at the aggregate level, while Fig. 3D compares the growth rates of (PPP-adjusted) GDP. Both Taiwan and South Korea experienced high GDP growth in the 1970s and early 1980s, while the total market capitalization of their respective stock markets accounted for less than 20% of their GNP during the same period, and the growth of stock markets did not take off until the mid- to late-1980s. Fig. 3B compares the growth of corporate bond markets: South Korea has the fastest growth path, while in Taiwan and China, the corporate bond markets seem to lag the development of stock markets. Finally, Fig. 3C compares total equity issuance including IPOs and SEOs. With the exception of South Korea, China seems to be on a similar pace in terms of size of equity issuance (as a fraction of GNP in a given year) with Taiwan, India, and Brazil.

From the above comparisons it is clear that the development of China's external markets relative to its overall economic growth is not dramatically different from other emerging countries. One of the common patterns is that the development of external markets trails that of the growth of the overall economy. This is not surprising given that the development of these markets requires a minimum efficiency for a country's institutions including the legal system, accounting standards, and the development of associated professionals. By contrast, during early stages of economic growth, alternative institutions and mechanisms alone can support the growth of firms and the overall economy, as is the case for China based on our evidence. Perhaps similar institutions have worked well in other emerging and developed economies, and future research can determine whether the Chinese experience also occurs in other countries.

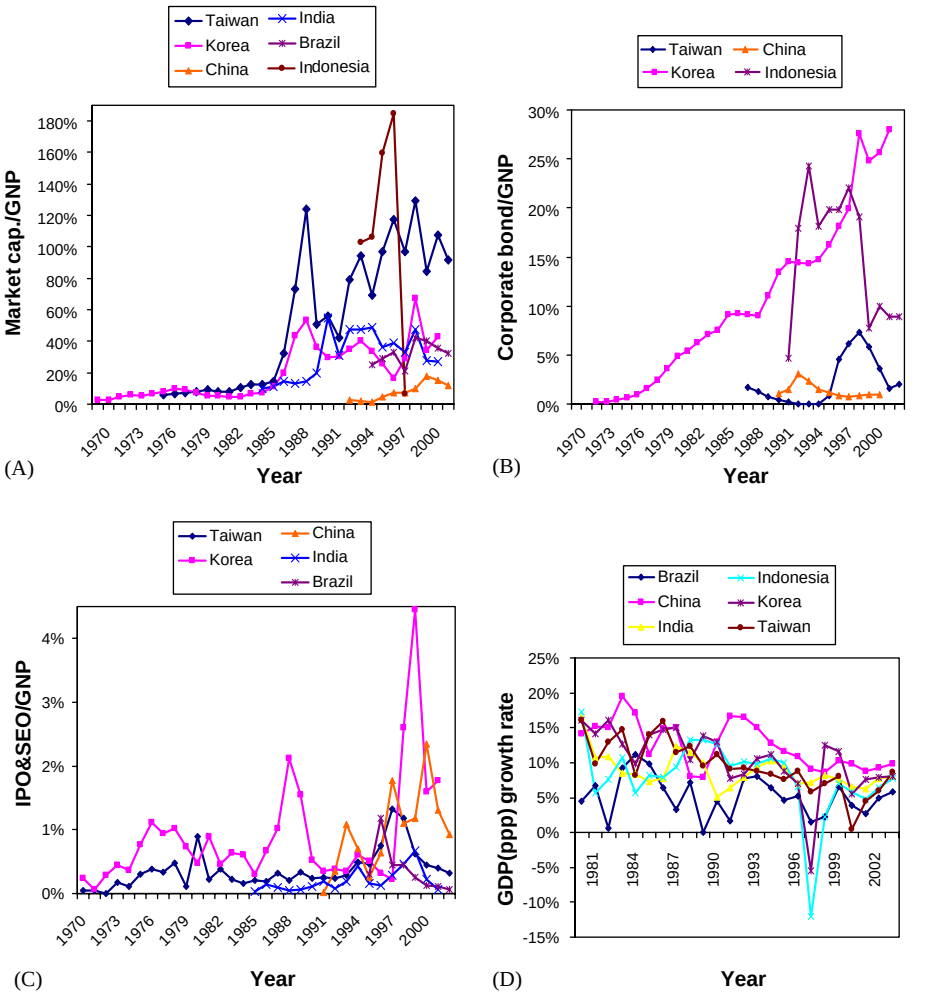


Fig. 3. Comparing financing channels in emerging economies: (A) Stock market capitalization; (B) corporate bond market; (C) equity issuance ; (D) GDP growth rates. (A) compares the time series of stock market capitalization/GNP ratios across six emerging economies, (B) presents the time series of the ratios of the amount of corporate bonds outstanding /GNP, while (C) presents the time series of IPO and SEO issuance (in a given year)/GNP. The calculations for all the ratios in these three figures are based on local currencies of a country in a given year. (D) compares time series of the growth rates of GDP, and the growth rates are calculated using PPP-adjusted GDP figures in order to avoid biases caused by different currency policies.

4. Evidence on the Listed Sector

In this section, we focus on publicly traded companies and examine their financing and investment decisions. As stated in the Introduction, we want to draw general conclusions on whether there are fundamental differences between the Chinese firms

and firms studied in previous papers (LLS, 1999; LLSV, 1997a, 2000b, 2002). Before doing so, we first look at the unique ownership structure and corporate governance mechanisms in Chinese firms.

4.1. Types of stocks, ownership structure, and corporate governance

Listed firms in China issue both tradable and nontradable shares (Table 7A). The nontradable shares are either held by the state/government or by other legal entities (i.e., other listed or nonlisted firms or organizations). Among the tradable shares, Class A and B shares are listed and traded in either the SHSE or SZSE, while Class A (B) shares are issued to Chinese investors (foreign investors including those from Taiwan and Hong Kong). Finally, Class H shares can be listed and traded on the HKSE and are issued by selected "Red Chip" Chinese companies.

Table 7B demonstrates that nontradable shares constitute a majority of all shares and most of these shares are held by the state, while the majority of tradable shares

Table 7A
Types of common stock issued in China

Tradable on the exchanges?	Definition	
No (Private block transfer possible)	State-owned shares**	Shares that are controlled by the central government during the process in which firms are converted into a limited liability incorporation but before they are listed. All these shares are managed and represented by the Bureau of National Assets Management, which also appoints board members on firms' boards.
	Entrepreneur's shares	Shares reserved for firms' founders during the same process described above; different from shares that founders can purchase and sell in the markets.
	Foreign owners	Shares owned by foreign industrial investors during the same process.
	Legal entity holders	Shares sold to legal identities (such as other companies, listed or non-listed) during the same process.
	Employee shares	Shares sold to firm's employees during the same process.
Yes (New issued shares)	A shares	Chinese companies listed in Shanghai or Shenzhen Stock Exchanges, and shares sold to Chinese (citizen) investors.
	B shares	Chinese Company listed in SHSZ or SZSE, but shares are sold to foreign investors.
	H shares	Chinese Company listed in Hong Kong (shares can only be traded on the HK Exchange but can be held by anyone).

**There are subcategories under this definition.

Table 7B
Tradable vs. nontradable shares for China's listed companies

Year	State/total shares	Nontradable[a]/ total shares	Tradable/total shares	A/total shares	A/tradable shares*
1992	0.41	0.69	0.31	0.16	0.52
1993	0.49	0.72	0.28	0.16	0.57
1994	0.43	0.67	0.33	0.21	0.64
1995	0.39	0.64	0.36	0.21	0.60
1996	0.35	0.65	0.35	0.22	0.62
1997	0.32	0.65	0.35	0.23	0.66
1998	0.34	0.66	0.34	0.24	0.71
1999	0.36	0.65	0.35	0.26	0.75
2000	0.39	0.64	0.36	0.28	0.80
2001	0.39	0.64	0.36	0.29	0.80
2002	n/a	0.65	0.35	0.26	0.74
2003	n/a	0.64	0.35	0.27	0.76

Source: China Security Regulation Committee Reports (2000) and http://www.csrc.gov.cn
[a]Nontradable shares include "state-owned" and "shares owned by legal entities".
*Tradable shares include A, B, and H shares.

Table 7C
Ownership and control in listed firms of China

Company ownership and control (%)		
Shareholder type	Ownership	Control (board seats)
State	24	21
Legal person	44	48
Employees	2	3
Tradable shares	30	4
Total	100	76

Source: Table 4.6, p.83, Corporate governance and enterprise reform in China, building the institutions of a modern market, 2002, World Bank publication.

are A shares. Table 7C provides some evidence on the relation between ownership and control of the Board of Directors. Information provided here is based on a survey of corporate governance practices among 257 companies listed on the SHSE conducted in 2000 by the Research Center of SHSE. Consistent with Tables 7A and 7B and the "one-share, one-vote" scheme adopted by firms in the Listed Sector, state and legal person shareholders appoint most of the board members, while the other directors are appointed by the government.

The standard corporate governance mechanisms are limited and weak in the Listed Sector (e.g., Schipani and Liu, 2002). First, listed firms in China have a two-tier board structure: The Board of Directors and the Board of Supervisors. The supervisors of a listed firm, ranking above the directors, are usually either officials

chosen from government branches or executives from the parent companies, while the Board of Directors is controlled by the firm's parent companies. Not all directors are elected by the shareholders, and the rest are nominated and appointed by the firm's parent companies and the nomination process is usually kept secret (Table 7C). Incentive pay is rarely explicitly specified in the directors' compensation packages, while the consumption of perks, such as company cars, is prevalent.

The external governance mechanisms are also weak. First, the existing ownership structure, characterized by cross-holdings of shares among listed companies and institutions, makes hostile takeovers virtually impossible. Secondly, institutional investors do not have a strong influence on management or on the stock market, as they are a very recent addition to the set of financial institutions in China. Moreover, ineffective bankruptcy implementation makes the threat and penalty for bad firm performance noncredible. The World Bank's cross-country information on the efficiency of bankruptcy procedures, which is based on surveys of lawyers and bankruptcy judges around the world, indicates that China's "goals of insolvency" index is equal to the median of the sample of 108 countries.

Finally, the government plays the dual roles of regulator and blockholder of many listed firms. The China Securities Regulation Committee (CSRC) is the counterpart of the SEC in the U.S., and its main role is to monitor and regulate stock exchanges and listed companies, while the government exercises shareholder control rights in listed firms mainly through state-owned asset management companies, which hold large fractions of the state shares. However, since the top officials of these asset management companies are elected by the government, it is doubtful that they diligently pursue their fiduciary role as control shareholders. Moreover, the government's dual roles can lead to conflicting goals in dealing with listed firms, which in turn weakens the effectiveness of both of its roles.

4.2. Evidence on ownership, financing, dividend and valuation

In this section, we examine and compare various characteristics of listed firms in China with those of other countries. Our results on China's Listed Sector are based on a sample (panel data) of more than 1,100 listed firms that we collect from SHSE, SZSE, and the "Asia Emerging Market Database" of the Taiwan Economic Journal, for the period 1992 to 2000. Table 8A presents the summary statistics for a "snapshot" of the sample firms at the end of 2000. From Panel A, the average market cap is US$ 448 million (median is US$ 355 million), and the average leverage ratio, measured by the ratio of long-term debt and common equity, is 32% (median is 9%). In short, these are large firms operating in virtually all industries. Panel B compares listed firms converted from the State Sector to those nonstate firms. First, 80% of the sample of listed firms used to be state-owned (921 out of 1163 firms). Second, the two groups of firms are similar in terms of most of the financial ratios except for leverage: Firms that used to be state-owned have much higher leverage than the other group, partially due to the large amount of bank loans accumulated in these firms prior to their IPO.

Table 8A
Summary statistics of listed firms (in US$ millions)

Data source for Tables 8A, 8B, and 8C (also empirical tests in Appendix B): firms are listed in SHSE and SZSE (as of December 2000). Data are downloaded from Taiwan Economic Journal's "Asia emerging market Database" (http://www.tei.com.tw/).

Panel A: key financial items and ratios (whole sample)

	Mean	Median	Min	Max	Std. Dev	Number of obs
Market cap. (US$ mil)	448.2	354.9	0.0	8,190.2	513.9	1174
LT debt/common equity	0.3	0.1	0.0	6.9	0.6	981
Net income	99.6	502.0	−1,215.9	21,718.6	721.0	979
EPS	0.2	0.2	−3.2	1.6	0.4	979
Proceeds from stock sales	163.6	0.0	−290.8	29,379.2	987.0	975 (272)[a]
Dividend	50.8	18.4	0.0	8,106.0	270.2	979 (617)[a]
Retained earnings	26.4	33.2	−2,125.7	2,210.18	234.4	979 (951)[a]
Bonds issue	0.8	0.0	0.0	521.0	17.3	975 (6)[a]
Long term borrowing	634.9	233.1	0.0	157,053.1	5,073.7	974 (895)[a]

Panel B: listed firms converted from SOEs vs. nonstate firms

Types of listed firms and sample size	Market Cap. (US$ mil.)	Tobin's Q	Dividend/earnings	Dividend/net sales	L-T Debt/book equity	Return on assets
Previously SOEs (921)	490.62	0.50	0.48	0.06	0.35	0.028
Previously non-SOEs (242)	454.94	0.51	0.11	0.06	0.24	0.028
Difference in means (t-test)	1.03	−0.19	0.85	−0.08	3.00*	0.004

[a]Number of nonzero observations.
*Significant at 1%.

Table 8B compares the ownership structure of these firms to those from the LLS (1999) sample, which includes over 1,000 listed companies from 33 countries. The main result of LLS (1999) is that countries that protect minority shareholders poorly (strongly) tend to have more concentrated (dispersed) ownership, as shown in the first two panels of Table 8B. The ownership structure of listed firms in China, shown in Panel C of Table 8B, is consistent with the prediction of Burkart et al. (2003), and closer to that of other Asian firms documented in Claessens et al. (2000) than to the LLS (1999) results. The dominant owner of 60% of our sample firms is the (central) government, while for 13.6% of firms, the dominant owner is founders' families. We also find that for 24.17% (1.83%) of firms, the dominant shareholder is a financial company (another listed firm). Since we do not have ownership data for this financial company (listed firm), we do not know whether this company (listed firm) is widely held or not. But given the fact that state ownership is prevalent in listed firms and banks, it is reasonable to assume that they are not widely held. Finally, only 0.44% of all firms are widely held so that no shareholder owns more than 10% of stocks.

Table 8C provides some evidence on financing sources at the firm level. The ratios for all the countries (except for China) in the table are taken from LLSV (1997a).[9] The evidence in Table 8C is consistent with previous evidence at the aggregate level: In terms of total equity, the listed Chinese companies do not rely on external markets as much as their counterparts in LLSV countries, but they do rely more heavily on debt, and in particular bank debt, than firms in LLSV-sample countries.

Finally, we examine dividend policies and valuations of listed firms in China, and compare these to firms studied by LLSV (2000b, 2002). Making the most out of the available data,[10] we perform three different sets of empirical tests and find similar results. Detailed descriptions of these tests are presented in Appendix B. First, LLSV (2000b) find that firms in countries with poorer protection of outside shareholders tend to have lower dividend ratios due to more severe agency problems. Using the dividend-to-earnings ratio as a proxy for dividend policy, we find that on average Chinese firms tend to underpay dividends to their shareholders compared to firms in countries studied in LLSV (2000b). Second, LLSV (2002) find that firms in countries with poorer protection of outside shareholders tend to have a lower Tobin's Q, measured by the market-to-book asset ratios. When we examine the Tobin's Q of listed firms in China, we cannot reject the hypothesis that on average their Tobin's Q is lower compared to countries with better shareholder protection (LLSV, 2002).

[9]In LLSV (1997a), a ratio (e.g., market cap/sales) for a country is obtained by first finding the median of this ratio across firms within various industries, and then by taking the average of the medians across industries. A similar procedure is taken to find the ratios for China using our data set of listed firms. Finally, we take the average (median) ratios across groups of countries according to their legal origins, and compare them to those of China.

[10]The data sets that we employ include: (1) accounting and financial information for 1,100+ listed firms from China (1990–2000); and, (2) LLSV (2000b, 2002) results are based on information for over 4,100 firms from 33 countries (1989–1994), while detailed firm-level data for LLSV-sample firms are not available to us; however, we do have their cross-sectional summary statistics by country, as well as the regression results across countries.

Table 8B
Comparing ownership structure of listed firms

Panels A and B are taken from LLS (1999). In Panel C, the first row is the average of the Asian countries included in Claessens et al. (2000), excluding Japan. The last row for China includes our sample of 1,147 listed firms.

Country	Widely held	State	Family	Widely held financial	Widely held corporation
Panel A: LLS (1999) sample with large firms					
High antidirector average	34.17	15.83	30.42	5.0	5.83
Low antidirector average	16.00	23.67	38.33	11.0	2.00
Sample average	24.00	20.19	34.81	8.3	3.70
Panel B: LLS (1999) sample with medium firm size					
High antidirector average	16.67	10.33	50.92	5.83	1.67
Low antidirector average	6.00	20.87	53.80	6.67	2.67
Sample average	10.74	16.19	52.52	6.30	2.22
Panel C: Asian firms					
Asia (no Japan, from Claessens et al., 2000)	3.09	9.36	59.36	9.66	18.55
China (our calculations)	0.44	60	13.56	1.83*	24.17**

Notes: (1) "Widely held" firms are defined as no large shareholder holds more than 10% of shares. "State" ("family") firms are those with the controlling shareholder being the state (a family)."Widely held financial" ("widely held corporation") are those with the controlling shareholder being a widely held financial company (widely held corporation).

*For these Chinese firms, we identify the dominant shareholder to be a financial company, but we are not sure whether the financial company is widely held or not.

**For these Chinese firms, we identify the dominant shareholder to be another listed and traded corporation, but we are not sure whether this corporation is widely held or not.

Table 8C
External funding at firm level

Country	English origin average	French origin average	German origin average	Scandinavian origin average	LLSV sample average	China
Market cap/sales	0.69	0.51	0.63	0.37	0.58	0.06
Market cap/cash flow	5.16	3.85	7.48	3.25	4.77	0.52
Debt/sales	0.26	0.27	0.3	0.28	0.27	0.67
Debt/cash flow	2.01	2.06	3.18	2.42	2.24	5.34

Sources: LLSV countries—WorldScope and LLSV (1997a); data for China is based on a panel of 7,377 firm-year (1,174 listed firms, 1992–2000) observations, with each ratio being the mean of the pooled panel of firms during the same time period.

Overall, because investor protection is weak (and the agency problem is severe) in the Listed Sector in China, both the dividend ratio and Tobin's Q are low compared to similar firms operating in countries with stronger investor protection. These results confirm that LLSV predictions work well for China's Listed Sector, which includes many firms converted from the State Sector, and is also consistent with evidence presented in Fig. 1.

5. Evidence on the Private Sector

In this section we study how firms in the Private Sector raise funds, their various growth paths, and the alternative mechanisms employed by owners that can substitute for formal corporate governance mechanisms. Due to data limitations, much of this evidence is by necessity anecdotal or by survey.[11] Some of our evidence coincides with the anecdotal evidence in Naughton (1995), while McMillan and Naughton (1992) also make similar arguments regarding the role of alternative mechanisms in supporting the growth of nonstate firms in China. Unlike their work, we also provide firm-level survey evidence. We first present anecdotal evidence on firms in two highly successful regions in Section 5.1, then present evidence based on a survey of 17 firms in Jiangsu and Zhejiang provinces in Section 5.2. Finally, Section 5.3 provides discussions of our evidence.

5.1. Anecdotal evidence in two successful regions

WenZhou. Wenzhou, a city in the Zhejiang province, is the home of some of the earliest and most successful firms of the Private Sector. Entrepreneurs in the region

[11]All firms including Private Sector firms must disclose accounting and financial information to the local Bureau of Commerce and Industry, and most of the reports are audited. However, these data are then aggregated into the Statistical Yearbook without any firm-level publications.

are known for their keen business sense and innovation, as well as sharp management skills (e.g., McMillan and Woodruff, 2002). They usually start their family-run businesses in townships with a similar product emphasis, in order to have easy access to the necessary technology, human capital, and potential clients and partners. Thus we observe specialization by regions (e.g., Town A produces shoes, Town B radio parts, etc.). This specialization can be a result of the attempt of firms to signal to potential customers that they are competitive by locating the firm in a region filled with other firms producing and selling similar products. During recent years, certain developed areas have shifted product emphasis from labor-intensive products such as clothes to more high-tech products such as computer parts.

The failure rate for start-ups in most industries is high. New product strategies often start with mimicking successful or popular products. Patent laws are difficult to implement, and often disputes are settled among the entrepreneurs themselves, similar to the evidence found in Vietnam by McMillan and Woodruff (1999b). To better overcome this problem, some entrepreneurs expend effort and money to ensure that the key parts of their new products are difficult to disassemble and copy. Another product strategy for many entrepreneurs is that they often aim at ''exporting'' their products to other regions, including foreign countries, instead of selling them locally.

Kunshan. Kunshan County, which is in Jiangsu province and is close to Shanghai, is famous for attracting foreign direct investment, especially from Taiwanese investors. Some of the most effective government policies have included setting up special development zones with favorable land and tax policies. In 1997, Kunshan set up a high-tech development zone, in which enterprises, in the ownership form of joint ventures, cooperatives, and ventures solely owned by foreign investors, can take full advantage of a tax waiver and tax reduction for initial periods. Firms whose high-tech products are export-oriented can enjoy even more tax advantages. There is also a center in a special zone established by the local government; this center acts as the liaison between the local government, entrepreneurs, and foreign investors, and as the regulator as well as service provider for enterprises operating in the zone. Enterprises in the zone are required to report their operating and financial information to, and are regulated by the center, but they understand that the center will almost never interfere with their internal decisions. The center's officials are mainly from the local government. The high-tech development zone has grown very fast since its inception in 1997.

During the early stage of the above special zone, investors from Taiwan were willing to commit their capital to these start-ups and refinance them when necessary. The reason that many investors are from Taiwan is no coincidence: Many people in Kunshan have relatives in Taiwan and through them investors obtained information on the investment opportunities. The Taiwanese investors also came to understand that although there were almost no formal investor protections, local government officials have an incentive to cooperate with the development of the special zone and try to create an economic boom in the local economy. This is the case because a booming economy can greatly enhance the chance of an official being promoted, in addition to participating in profit-sharing. During the early stage of development,

Taiwanese investors did not stay in the area as they often do now. As a result, there was virtually no monitoring of the entrepreneurs, and there was complete separation of ownership and control.

5.2. Survey evidence

In designing our survey, we follow Graham and Harvey (2001, survey of US CFOs), Johnson et al. (2002, survey of Eastern Europe countries), and McMillan and Woodruff (1999a, b surveys on Vietnam). (The survey questions and the tabulation of answers are available at http://www2.bc.edu/~qianju/research.html.) As Table 9 shows, among the 17 firms that we surveyed and which provided us detailed answers to our questions, one firm is from suburban Shanghai, three are from Jiangsu province, and the remaining thirteen are from Zhejiang province. These firms operate in a wide range of industries. The average age of the firm is over 11 years, and they employ an average of over 1,600 employees. The average size of (book) assets is US$55 million, with average return on assets being 10%. Finally, on average firms are highly levered, with the average (private and bank) debt to (private) equity ratio reaching 2.1.

Fig. 4A provides more background information for the survey firms. There are significant variations in the past performance and the expected future performance (top two histograms) of firms. In terms of ownership structure (second panel of histograms), both at start-up and at the present time, the two dominant forms are "founder and family", and "shareholding", which resembles a private equity structure. Around 35% of the founders of our sample firms worked in TVEs prior to starting up their own firms (bottom histogram), while 23% (18%) of the founders worked in SOEs (government agencies). The experience from the State Sector or other Private Sector firms is valuable for the entrepreneurs, as they not only gained knowledge on how to run a private firm, but also learned how to deal with government officials.

Table 9
Summary statistics for survey firms (as of December 2002)

The sample includes 17 firms: one from Shanghai, three from Jiangsu Province, and 13 from Zhejiang Province. The sample covers firms in the industry of chemical products (3), fabric making and printing (3), metal products (2), medical and health products (2), realty management (2), auto repairing (1), food processing (1), agriculture product processing (1), electronic products (1), and handcraft and art products (1). Some firms are in multiple business lines.

	Mean	Min	Max	Std. Dev
Age of the firm	11.4	3.00	27.00	6.7
No of employees	1634.3	90.00	5552.00	2107.8
Size (total assets in mil. US$)	55.3	0.60	337.30	82.7
D/E ratio	2.1	0.38	14.95	3.4
Net income (in mil. US$)	2.5	0.20	9.00	2.8
Return on assets	0.1	0.00	0.34	0.1

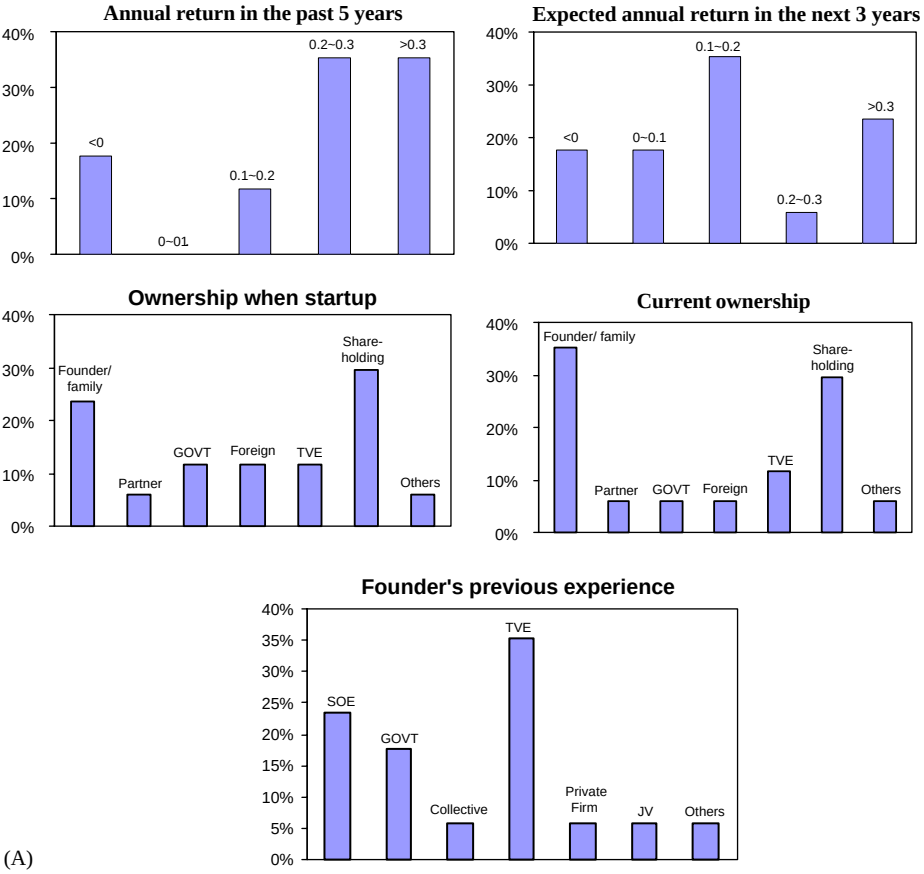
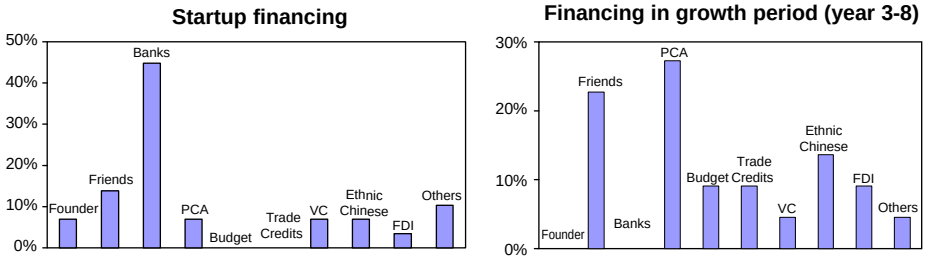
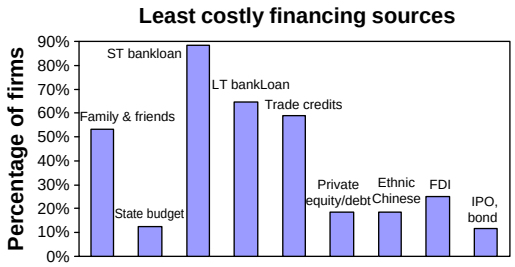


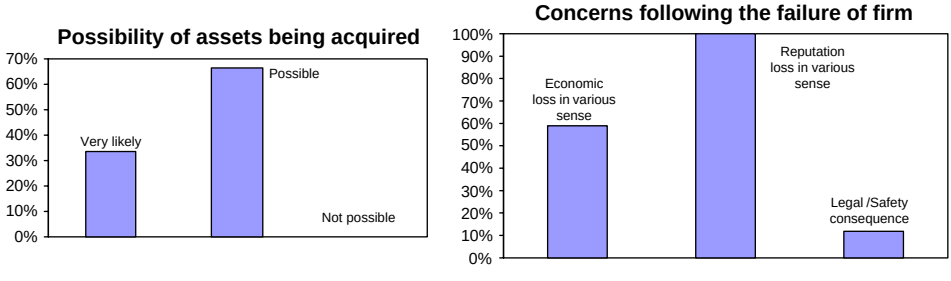
Fig. 4. (A) Background information on survey firms; (B) financing channels of survey firms (shown on the next page); (C) governance mechanisms of survey firms (shown on the next page). In all of the histograms in (A), the vertical axis represents the percentage of firms' managers/founders who provide the same answer for a particular question in the survey. In the bottom three histograms in (A), "GOVT" stands for firms that have local government as the majority owner; while "JV" stands for joint ventures. In (B), each bar represents the percentage of firms that regards a financing source as very important (25–50%) or extremely important (>50%) during their start-up and growth periods. Notes: PCA = private credit agencies; Budget = state/local budget, and VC = venture capital. Fig. 4(C) presents results on selected governance mechanisms among survey firms.

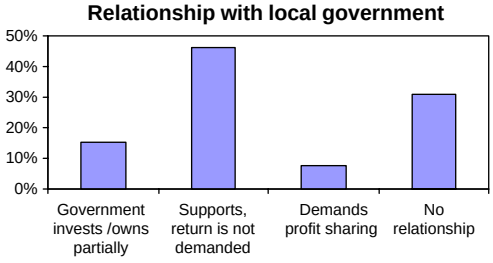
Financing channels. Fig. 4B presents evidence of the financing channels of the firms. First, it is not surprising that during the start-up stage, funds from founders' family and friends are an important source of financing (top-left histogram). Moreover, funds from friends, in the form of private loans and equity, are also very important during the firm's subsequent growth period (top-right histogram). In some cases there are no formal written contracts between the friends/investors and the entrepreneurs, implying that reputation- and relationship-based implicit contractual





(B)





(C)

Fig. 4. (*Continued*)

agreements have worked effectively. Second, internal financing, in the form of retained earnings, is also important (not reported in Fig. 4B): Survey firms retained an average of 55% to 65% of their net income for reinvestment during the initial two to three years of existence.

Third, funding from financial intermediaries is one of the most important sources for the surveyed firms. In terms of start-up financing, over 40% of firms surveyed

regard "banks" as either a "very important" (25–50% of total funding needs) or an "extremely important" (more than 50% of total funding needs) financing source. The four largest state-owned banks are ranked the highest in terms of providing funds, while other state-owned banks are ranked second. However, it is not clear that state-owned banks provide the cheapest start-up financing channel for all Private Sector firms. The caveat is that almost all the surveyed firms that received start-up financing from state-owned banks had already established close relationships with those banks before their inception as shown in Fig. 4A. In fact, not a single firm rates banks as very important or extremely important during their growth period. Financing from private credit agencies (PCAs), instead of banks, is the most important channel during a firm's growth period. These nonstate lenders usually charge very high interest rates and/or require a large amount of collateral on loans, and can force liquidation should the entrepreneurs default; the associated loan contracts resemble junk bonds to a certain degree.

On average, each surveyed firm currently has a loan relationship with 4.3 banks or other financial intermediaries, with the maximum (minimum) being 12 (1). Collateral value counts for 82.6% of the loan value on average with a maximum (minimum) of 120% (20%). Fixed assets are the most popular form of collateral, with third-party guarantees being the second-most popular form. These facts imply that financial institutions, state or private, seem to understand the risk of start-up firms and try to "price" this risk in their loan contracts. In a few cases the local government provides the third-party guarantee, indicating an active role played by government officials in supporting the growth of firms.

During a firm's growth period (Fig. 4B), there are a few other channels that are important sources of financing, in particular, investment from "ethnic Chinese" (investors from Hong Kong, Taiwan, and overseas Chinese), mostly in the form of private loans and equity. This financing source, as compared to investment from non-Chinese foreign direct investment (FDI), relies on the relationship between the investors and the entrepreneurs. Other sources include trade credits among business partners, state and local budgets, and FDIs, while investment from venture capitalists (VC) is not widely used during either the start-up stage or the growth period. When asked about which financing channels are least costly (bottom histogram in Fig. 4B), while most of the surveyed firms point to short- and long-term bank loans, almost 60% of firms indicate trade credits among business partners (c.f., McMillan and Woodruff, 1999a).

For start-up firms, securing land and other fixed assets is important for their survival. While not reported in the figures, more than half of the surveyed firms purchase the long-term "operation-rights" of the land (20–50 years) from the government, which has the ultimate control. With operation rights, a firm has more control over the land than under a "land rental" contract. For example, firms can rent the land to another party once obtaining the operation rights from the government. Land rental contracts have shorter terms on average (5–10 years). In terms of fixed assets, 16 out of the 17 firms purchased and own all of their fixed assets. Among them, nine firms purchased their fixed assets from the State Sector, and seven out of the nine firms considered the price they paid to be the same as the

market value of the assets. One firm's executive indicated that for the rental portion of fixed assets from SOE, there are no formal contracts between the firm and the SOE.

Finally, when asked about the prospects of going public, founders and executives list "access to large scale funding" and "reputation increase" as the most important benefits, and the "disclosure of valuable information to competitors and outsiders" and "large amount of fees paid" to the government, investment banks, and consulting firms as the most critical disadvantages of going public.

Corporate governance. Fig. 4C provides some information on governance mechanisms. First, over 60% (30%) of firms believe that if their own firm were not run efficiently and were to find itself in financial distress, it is "possible" ("very likely") its assets would be purchased by another firm or investor; no one answered it is "not possible" for this to occur. Not reported in the figure, we also asked firms about product market competition: 40% of surveyed firms believe that if their firm were not operating efficiently, within three to six months 20% of its market share would be taken away, while 80% of firms' founders/executives believe the entire market share of the firm would be taken away in two years. When asked about what type of losses concern them the most if the firm were to fail (top-right histogram in Fig. 4C), every firm's founders/executives (100%) said reputation loss is a major concern, while only 60% of them said economic losses are of major concern.

The success of a firm in the Private Sector depends crucially on the support from local government. Over 40% of survey firms state the local government "supports" the growth of the firm without demanding profit sharing, while for some other firms, the government is either a partial owner or demands profit sharing without investing in the firm (bottom histogram in Fig. 4C). The supportive attitude of the local government toward firms in the Private Sector is remarkable considering the fact that the Chinese government is widely regarded as corrupt (e.g., Table 2C) and disrespectful of property rights (e.g., LLPS, 2004).

5.3. Discussion

In this section we discuss mechanisms supporting the growth of the Private Sector. We believe the most important reason for the growth is the work of alternative financing and governance mechanisms. Perhaps the most important mechanism is reputation and relationships. Greif (1989, 1993) argues that certain traders' organizations in the eleventh century were able to overcome problems of asymmetric information and the lack of legal and contract enforcement mechanisms, because they had developed institutions based on reputation, implicit contractual relations, and coalitions. Certain aspects of the growth of these institutions resemble what works in China's Private Sector today, in terms of how firms raise funds and contract with investors and business partners. In addition, Greif (1994) and Stulz and Williamson (2003) point out the importance of cultural and religious beliefs on the development of institutions, legal origin, and investor protection. Gomes (2000) demonstrates that a managerial reputation effect can replace formal governance in

an IPO firm, consistent with the evidence from the Chinese venture capital industry (e.g., Bruton and Ahlstrom, 2002).

The above factors are of particular relevance and importance to China's institutional development. Without a dominant religion, one can argue that the most important force shaping China's social values and institutions is the set of beliefs first developed and formalized by *Kong Zi* (Confucius). This set of beliefs clearly defines family and social orders, and are very different from western beliefs on how legal codes should be formulated and how individuals and businesses negotiate (e.g., Pye, 1982; Chow, 2002). Using the World Values Survey conducted in the early 1990s, LLSV (1997b) find that China has one of the highest levels of social trust among a group of 40 developed and developing countries. We interpret high social trust in China as being influenced by Confucian beliefs. Interestingly, the same survey, used in LLSV (1997b), finds that Chinese citizens have a low tendency to participate in civil activities. However, our evidence shows that with effective alternative mechanisms in place, citizens in the developed regions of China have a strong incentive to participate in business/economic activities.

The second most important mechanism is competition in product and input markets, which has worked well in both developed and developing countries (e.g., McMillan, 1995, 1997; Allen and Gale, 2000b). What we see from the success of Private Sector firms in WenZhou and other surveyed firms suggests that it is only those firms that have the strongest comparative advantage in an industry (of the area) that survive and thrive. DLLS (2002) examine entry barriers across 85 countries including China. Entry barriers are a relevant factor for the growth of China's Private Sector, as lower entry barriers foster competition. DLLS find that countries with heavier (lighter) regulation of entry have higher government corruption (more democratic and limited governments) and larger unofficial economies.

With much lower barriers to entry compared to other countries with similar (low) per capita GDP, China is once again an "outlier" in the DLLS sample. The outlier status is even stronger considering that China is one of the least democratic countries, and such countries tend to have high barriers to entry. Based on our survey evidence, we conclude that there exist non-standard methods to remove entry barriers in China: First, 16 out of the 17 firms applied for a license (required) before the business started, with 50% of them indicating that it takes two weeks to one month to go through the procedure and 37.5% say it takes one to two months. The main problem for the application for a license seems to be dealing with government bureaucracy. To ease this problem, most of the firms' founders/executives ask the friends of government officials to negotiate on their behalf, or the firms can offer profit sharing to government officials. But these methods are consistent with our results that alternative mechanisms based on reputation and relationships provide the most important support for the growth of the Private Sector.

There are other effective corporate governance mechanisms. First, Burkart et al. (2003) link the degree of separation of ownership and control to different legal environments, and show that family-run firms will emerge as the dominant form of ownership structure in countries with weak minority shareholder protection, whereas

professionally managed firms must be the optimal form in countries with strong investor protection. Our survey evidence on the Private Sector and empirical results on the Listed Sector, along with evidence in Claessens et al. (2000,2002), suggests that family firms are a norm in China and other Asian countries, and these firms have performed well. Second, Allen and Gale (2000a) show that if cooperation among different suppliers of inputs is necessary and all suppliers benefit from the firm doing well, then a good equilibrium with no external governance is possible, as internal, mutual monitoring can ensure the optimal outcome. We have shown trade credits are an important form of financing for firms during their growth period. Third, the common goal of sharing high prospective profits can align interests of local and foreign investors with entrepreneurs and managers to overcome numerous obstacles and achieve their common goal. Under this common goal in a multiperiod setting, implicit contractual agreements and reputation can act as enforcement mechanisms to ensure that all parties fulfill their roles to make the firm successful. Profit sharing also makes it incentive compatible for officials at various levels to support the growth of the firm.

Finally, there is a strand of literature studying transitional economies, such as Russia, China, Vietnam, and Eastern European countries, from Socialist systems to market systems. It is important to point out why China differs from other transitional economies. First, with the exception of Russia, China's economy is much larger and more diversified than other transitional economies. With a small and homogenous economy, a country can adjust its legal and financial systems to the strengths of its economy much easier than a large country can. The recent economic struggle in Russia illustrates this point (e.g., Shleifer and Treisman, 2000). The success of China's Private Sector demonstrates that alternative mechanisms can work wonders even in large and diversified economies.

Second, it is probably easier for other countries to adopt drastic reform measures in the short run. China, under the influence of Confucius' views, is different in that people hold the belief that fundamental changes in society should be gradual and should be fully implemented only after they are proven correct. This view, however, does not prevent regional experiments conducted at a smaller scale. Accordingly, China adopted a gradual, "dual track" path in its economic reform, where the continued enforcement of the existing planning system goes alongside with the fast-paced development of financial markets, as compared to the "big bang" approach taken by some other countries (e.g., Lau et al., 2000).

Third, the role played by the government during the reform process is very different in China than in most other transition economies, and in particular, Russia (e.g., Blanchard and Shleifer, 2001). In a broader context, LLSV (1999) find that governments in countries with French or socialist origins have lower quality (in terms of supporting economic growth) than those with English common laws and richer countries. However, China is a counterexample to LLSV's argument on government: While the Chinese Communist Party largely remains autocratic, government officials, especially those in the most developed areas (e.g., Jiangsu and Zhejiang provinces), played an active supporting role in promoting the growth of the

Private Sector. This is different from the "grabbing hand" role played by government officials in other countries (Frye and Shleifer, 1997). The reason for this supporting role is threefold. First, as Li (1998) points out, starting in the early 1980s, the central government of China implemented a mandatory retirement age for almost all bureaucrats at various levels, which made the officials younger and more familiar with capitalist ideas. In Russia, officials from the old regime were entrenched and able to extract rents from the new economy without any contribution. Next, during early stages of China's reform, TVEs, in which local governments are partial owners, provided the most important source of growth in the Private Sector. The enormous success of TVEs and the promotion of the associated officials provided examples and incentives to other officials to follow suit. Finally, as discussed above, profit sharing with firms in a multiperiod setting also makes it incentive compatible for officials at various levels to support the growth of the firm.

6. Concluding remarks

In this paper we examine and compare China's formal systems of law and finance and the alternative institutional arrangements and governing mechanisms, and the relation between the development of these systems and China's economic growth. With one of the largest and fastest growing economies in the world, China differs from most of the countries studied in the law, institutions, finance, and growth literature, and is an important counterexample to the existing findings: Its legal and financial systems as well as institutions are all underdeveloped, but its economy has been growing at a very fast rate. More importantly, the growth in the Private Sector, where applicable legal and financial mechanisms are arguably poorer than those in the State and Listed sectors, is much faster than that of the other sectors. The system of alternative mechanisms and institutions plays an important role in supporting the growth in the Private Sector, and they are good substitutes for standard corporate governance mechanisms and financing channels.

Going forward, our results pose an important question for both researchers and policy makers: Should China also transform the Private Sector toward the "standard form" like it has been doing for the State Sector? Given the success of the Private Sector and the deficiency in the State and Listed sectors in China, much more research is required in order to better understand how alternative mechanisms work where standard mechanisms are not available or not suitable. These effective substitutes worked well in China, and similar substitutes based on relationship and reputation may have also worked well in other economies including developed economies. Our results thus have general implications: there are important factors connecting law, institutions, finance, and growth that are not well understood. A better understanding of how these nonstandard mechanisms work to promote growth can shed light on optimal development paths not only for China, but also many other countries.

Appendix A. Brief description of our variables and their sources

A.1. Creditor/Shareholder Rights Variables (Tables 2A–D)

Variables	Description	Sources
Legal origin	Identifies the legal origin of the company law or commercial code of each country.	Reynolds and Flores (1989), LLSV (1997a)
One share–one vote	(1) Equals one if ordinary shares carry one vote per share, and zero otherwise; (2) equals one, when the law prohibits the existence of both multiple-voting and nonvoting ordinary shares and does not allow firms to set a maximum number of votes per shareholder irrespective of the number of shares owned, and zero otherwise.	Company law or commercial code
Proxy by mail allowed	Equals one if shareholders can mail their proxy vote to the firm, and zero otherwise.	Company law or commercial code
Shares not blocked before meeting	Equals ones if firms cannot require shareholders to deposit their shares prior to a general shareholders' meeting (to prevent selling shares), and zero otherwise.	Company law or commercial code
Cumulative voting or proportional representation	Equals one if shareholders can cast all their votes for one candidate to the board of directors (cumulative voting) or a mechanism of proportional representation in the board by which minority interests may	Company law or commercial code

	name a proportional number of directors to the board is allowed, and zero otherwise.	
Oppressed minorities mechanism	Equals one if minority shareholders have either a judicial venue to challenge the decisions of management or the assembly or the right to step out of the company by requiring the company to purchase their shares when they object to certain fundamental changes (e.g., mergers and asset dispositions); equals zero otherwise. Minority shareholders are defined as those shareholders who own 10% of shares or less.	Company law or commercial code
Preemptive rights	Equals one when grants shareholders the first opportunity to buy new issues of stock, and this right can be waived only by a shareholders' vote; equals zero otherwise.	Company law or commercial code
Percentage of share capital to call an extraordinary shareholders' meeting	The minimum percentage of ownership of share capital that entitles a shareholder to call for an extraordinary shareholders' meeting; ranges from 1% to 33%.	Company law or commercial code
Antidirector rights	The index is formed by adding one when: (1) the country allows shareholders to mail their proxy vote to the firm; (2) shareholders are not required to deposit their shares prior to the general shareholders' meeting; (3) cumulative	Company law or commercial code

	voting or proportional representation of minorities in the board of directors is allowed; (4) an oppressed minorities mechanism is in place; (5) the minimum percentage of share capital that entitles a share- holder to call for an extraordinary shareholders' meeting is less than or equal to 10% (the sample median); or, (6) shareholders have preemptive rights that can be waived only by a shareholders' vote. The index ranges from zero to six.	
Mandatory dividend	Equals the percentage of net income that the company law or commercial code requires firms to distribute as dividends among ordinary stockholders. It equals zero for countries without such a restriction.	Company law or commercial code
Restrictions for going into reorganization	Equals one if the reorganization procedure imposes restrictions, such as creditors consent; equals zero otherwise.	Bankruptcy and reorganization laws
No automatic stay on secured assets	Equals one if the reorganization procedure does not impose an automatic stay on the assets of the firm on filing the reorganization petition. Automatic stay prevents secured creditors from gaining possession of their security. It equals zero if such a restriction does exist in the law.	Bankruptcy and reorganization laws

Secured creditors first	Equals one if secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm. Equals zero if nonsecured creditors, such as the government and workers, are given absolute priority.	Bankruptcy and reorganization laws
Management does not stay	Equals 1 when an official appointed by the court, or by the creditors, is responsible for the operation of the business during reorganization. Equivalently, this variable equals one if the debtor does not keep the administration of its property pending the resolution of the reorganization process. Equals zero otherwise.	Bankruptcy and reorganization laws
Creditor rights	An index aggregating different creditor rights. The index is formed by adding "one" when: (1) the country imposes restrictions, such as creditors' consent or minimum dividends to file for reorganization; (2) secured creditors are able to gain possession of their security once the reorganization petition has been approved (no automatic stay); (3) secured creditors are ranked *first* in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm; and, (4)	Bankruptcy and reorganization laws

	the debtor does not retain the administration of its property pending the resolution of the reorganization. The index ranges from zero to four.	
Legal reserve requirement	The minimum percentage of total share capital mandated by corporate law to avoid the dissolution of an existing firm. It takes a value of zero for countries without such a restriction.	Company law or commercial code
Efficiency of judicial system	Assessment of the "efficiency and integrity of the legal environment as it affects business, particularly foreign firms" produced by the country risk rating agency Business International Corp. It "may be taken to represent investors' assessments of conditions in the country in question." Average between 1980 and 1983. Scale from zero to ten; with lower scores, lower efficiency levels.	Business International Corp.
Rule of law	Assessment of the law and order tradition in the country produced by the international country risk rating agency, International Country Risk (ICR). Average of the months of April and October of the monthly index between 1982 and 1995. Scale from zero to ten, with lower scores for less tradition for law and order (we changed the scale from its original	International Country Risk

	range going from zero to six).	
Corruption	ICR's assessment of the corruption in government. Lower scores indicate that "high government officials are likely to demand special payments" and "illegal payments are generally expected throughout lower levels of government" in the form of "bribes connected with import and export licenses, tax assessment, policy protection, etc." Average of the months of April and October of the monthly index between 1982 and 1995. Scale from zero to ten, with lower scores for higher levels of corruption (we changed the scale from its original" range going from zero to six).	International Country Risk Guide
Risk of expropriation	ICR's assessment of the risk of "outright confiscation "or" "forced nationalization." Average of the months of April and October of the monthly index between 1982 and 1995. Scale from zero to ten, with lower scores for higher risks.	International Country Risk Guide
Repudiation of contracts by government	ICR's assessment of the "risk of a modification in a contract taking the form of a repudiation, postponement, or scaling down" due to "budget cut backs, indigenization pressure, a change in	International Country Risk Guide

	government, or a change in government economic and social priorities.'' Average of the months of April and October of the monthly index between 1982 and 1995. Scale from zero to ten, with lower scores for higher risks.	
Accounting standards	Index created by examining and rating companies' 1990 annual reports on their inclusion or omission of 90 items. These items fall into seven categories (general information, income statements, balance sheets, funds flow statement, accounting standards, stock data, and special items). A minimum of three companies in each country was studied. The companies represent a cross-section of various industry groups; industrial companies represented 70%, and financial companies represented the remaining 30%.	International accounting and auditing trends, Center for International Financial Analysis and Research

Secondary source: LLSV(1997a, 1998).

A.2. Financial System Variables (Table 3)

Variables	Definition	Original source
Bank Credit	Credit made by depositary banks to the private sector/GDP.	IFS, WDI, and country specific publications
(Total) value traded	Ratio of domestic equity traded on domestic exchanges /GDP.	IFS, WDI, EMFB, and country specific publications

Market capitalization	Ratio of domestic equities listed on domestic exchanges/GDP.	Int'l Financial Statistics (IFS), World Development Indicators (WDI), Emerging Markets Factbook (EMFB), and country specific publications
Overhead cost	Overhead cost divided by total bank system assets.	Levine's calculations (2002)
Structure- size	Log(market capitalization/bank credit); measure size of markets and banks.	Levine (2002)
Structure-activity	Log(value traded/bank credit); measure size/trading volume of markets and banks.	Levine (2002)
Structure-efficiency	Log(market capitalization ratio × overhead cost ratio); measures relative efficiency of markets vs. banks.	Levine (2002)
Structure regulation	Sum of the four categories in regulatory restriction.	National regulatory authorities
Regulatory restriction	The degree to which commercial banks are allowed to engage in security, firm operation, insurance, and real estate: 1-unrestricted; 2-permit to conduct through subsidiary; 3-full range not permitted in subsidiaries; and 4-strictly prohibited.	National regulatory authorities
Finance-size	Log (market capitalization ratio × private credit ratio)	Levine (2002)
Finance-activity	Log (total value traded ratio × private credit ratio)	Levine (2002)
Finance-efficiency	Log (total value traded ratio/ overhead cost)	Levine (2002)

Secondary source: Levine (2002).

A.3. External Financing Variables (Table 4B)

Variable	Description	Sources
External cap/GNP	The ratio of the stock market capitalization held by minorities to GNP in 1994. The first variable is computed as the product of the aggregate stock market capitalization and the average percentage of common shares not owned by the top three shareholders in the ten largest nonfinancial, privately-owned domestic firms in a given country. A firm is considered privately owned if the State is not a known shareholder.	Moodys International, CIFAR, EXTEL, WorldScope, 20-Fs, PriceWaterhouse, and various country sources
Domestic firms/Pop	Ratio of the number of domestic firms listed in a given country to its population (in millions) in 1994.	Emerging Market Factbook and World Development Report (WDR) 1996.
IPOs/Pop	Ratio of the number of initial public offerings of equity in a given country to its population (in millions) for the period 1995:7-1996:6.	SDC, AsiaMoney, LatinFinance, GT Guide to World Equity Markets, and WDR 1996.
Debt/GNP	Ratio of the sum of bank debt of the private sector and outstanding nonfinancial bonds to GNP in 1994, or last available.	International Financial Statistics, World Bondmarket Factbook.
GDP growth	Average annual percent growth of per capita gross domestic product for the period 1970–1993.	WDR 1995.
Market cap/ sales	The median ratio of the stock market capitalization held by minorities to sales in 1994 for all nonfinancial firms in a given country on the WorldScope database. Firm's stock market	WorldScope.

	capitalization held by minorities is computed as the product of the stock market capitalization of the firm and the average percentage of common shares not owned by the top three shareholders in the ten largest nonfinancial, privately owned domestic firms in a given country. A firm is considered privately owned if the State is not a known shareholder in it.	
Market cap/ cash-flow	The median ratio of the stock market capitalization held by minorities to cash flow in 1994 for all nonfinancial firms in a given country on the WorldScope database. The firm's stock market capitalization held by minorities is computed as the product of the stock market capitalization of the firm and the average percentage of common shares not owned by the top three shareholders in the ten largest nonfinancial, privately owned domestic firms in a given country. A firm is considered privately owned if the State is not a known shareholder in it.	WorldScope.
Debt/sales	Median of the total-debt-to-sales ratio in 1994 for all firms in a given country on the WorldScope database.	WorldScope.
Debt/cash flow	Median of the total-debt-to-cash-flow ratio for all firms in a given country on the WorldScope database.	WorldScope.

Secondary source: LLSV (1998), China details from Shanghai and Shen Zhen Stock exchanges, and firms' annual reports.

A.4. Definitions of different types of firms in China (Table 5b and Figs. 1–3)

1. *State-owned enterprises*: Noncorporation economic units, such that the entire assets are owned by the state and which are registered in accordance with the "Regulation of the People's Republic of China on the Management of Registration of Corporate Enterprises." Excluded from this category are the solely state-funded corporations in the limited liability corporation.
   Note: The government is the de facto owner, and they choose managers to run the firm. Even though these firms do enter the credit plan, this process is constructed and enforced by state banks, which are also under the control of the government.
2. *Collective-owned enterprises*: Economic units such that the assets are owned collectively and which are registered in accordance with the "Regulation of the People's Republic of China on the Management of Registration of Corporate Enterprises."
   Note: Local government can be regarded as the agent of central government. Therefore, any firm owned by local government is also owned by central government. Collective ownership here means the communities in cities or rural areas joining the ownership.
3. *Township-village enterprises (TVEs)*: Enterprises and economic units located in rural areas, collectively owned or with most of its investment from residents in these rural areas. An enterprise in a rural area is legally registered as a TVE where rural communities or residents invest more than 50% of the firm's total assets or act as the control owners in the operation of enterprise.
   Note: There can be firms that are both collectively owned and TVEs, as long as they are in the rural areas and have more than 50% of total assets coming from residents from the same rural area/county. The difference is that TVEs are all located in rural areas while collectively owned firms can be in cities; also TVEs can be solely owned by residents of that rural area and the local government has no ownership or control over the firm.
4. *Jointly owned firms*: Economic units established by two or more corporate enterprises or institutions of the same or different ownership, through joint investment on the basis of equality, voluntary participation, and mutual benefits. They include state joint ownership enterprises, collective joint ownership enterprises, joint state-collective enterprises, and other joint ownership ventures.
   Note: Enterprises involved with foreign investment/ownership are not in this category. They are in the Category of "Enterprise with Foreign investment," which has three different types.
5. *Share-holding corporations Ltd*: Economic units registered in accordance with the "Regulation of the People's Republic of China on the Management of Registration of Corporate Enterprises," with total registered capital divided into equal shares and raised through issuing stocks. Each investor bears limited liability to the corporation depending on the holding of shares, and the corporation bears liability to its debt to the maximum of its total assets.

Note: The above is essentially the same definition of U.S. public companies, but these Chinese companies have nontradable shares that are the by-product of the reform process.

Appendix B. Empirical tests on listed firms in China and other countries

Data: We have firm-level accounting and security market data for all the listed firms in China (panel data set of 1,174 firms during the 1992–2000 period, with a total of 7,377 observations). We compare these Chinese firms with those studied in LLSV (2000b, 2002; 4,103 firms from 33 countries during the 1989–1994 period). We do not have detailed firm-level data for LLSV samples, but we do have: (1) the cross-sectional summary statistics by country; (2) the regression results across countries. We examine dividend policy and firm valuations, and our empirical models and results are presented below.

Method 1: "Synthetic firm" approach:

Step 1: Using the summary statistics from LLSV samples, we create a "synthetic firm" for each of the 33 countries. For this synthetic firm, each firm characteristic is equal to the median of the same variable across all the firms in that country. Following the same procedure, a synthetic firm is also created for China based on the information of 1,100+ firms.

Step 2: Three OLS regressions are run on the 33 (LLSV countries) "synthetic" observations. The dependent variables in these tests are: (1) dividend/earnings ratio; (2) dividend/sales ratio; and, (3) Tobin's Q (measured by market-to-book assets ratio). The independent variables are the same ones used in LLSV (2000b, 2002). Based on the results from each of the three regressions, we then conduct an out-of-sample prediction for China using the estimated coefficients and variances.

Step 3: Compare the "true" (observed) firm characteristics of the Chinese synthetic firm to those predicted values from Step 2, and see whether the true value falls in the boundaries of predicted values.

The following table presents the coefficients estimates, t ratios, prediction, and boundaries from the regression on 33 synthetic firms, and empirical values from the Chinese firms in the sample.

	y: Div/earn	*y*: Div/sales		*y*: Tobin's *Q*
Intercept	42.44	1.30	Intercept	−0.58
	(3.79**)	(0.64)		(−0.58)
Civil law dummy	3.42	−1.06	Growth in sales	0.00
	(0.33)	(−0.56)		(0.17)
Low protection	−9.09	1.57	Common law	0.30
	(−0.91)	(0.86)		(0.30)
GS	0.47	0.16	Anti-director	0.65
	(0.72)	(1.36)	rights	(1.81*)

GS × civil law	−1.12	0.00	CF rights	5.87
	(−1.18)	(0.00)		(1.89*)
GS × Low	0.86	−0.20	CF rights ×	−0.52
Protection	(0.89)	(−1.13)	common Law	(−0.15)
Div tax advantage	−10.54	0.25	CF rights ×	−2.12
	(−0.85)	(0.11)	anti-director	(−1.78*)
R-squared	0.16	0.09	*R*-square	0.39
No of observations	33	33	No of observations	27
Predicted values for China (lower and upper bounds)	57.14–161.07	−8.82–10.19	Predicted values for China (lower and upper bounds)	0.57–1.86
Observed ratio from China	30.23	2.35	Observed ratio for China	1.22

**Significant at 1% level.
*Significant at 10% level.

Method 2: "Alpha" approach

Utilizing the alpha notation from asset pricing models, we want to see how much of the variation in the dependent variables is not explained by the independent variables. There are two versions of this model: restricted and unrestricted, depending on whether we restrict the coefficients on each independent variable to be the same for Chinese firms and for firms in other countries.

Method 2-Restricted Model

Step 1: For Chinese firms, we run regressions according to: $y = \text{alpha(China)} + \text{gamma} \times Z + e$, where y is the actual value of Tobin's Q, or dividend payout ratio, and Z is a vector of firm characteristics.

Step 2: Adjusted alpha (China) = Alpha (China from regression)—beta(LLSV) × (China). Then compare the adjusted Alpha (China) with Alpha (LLSV samples).

Method 2—Unrestricted model

Step 1: Alpha (China) = mean (yi–gamma(LLSV) × Z(China))

Step 2: The same as Step 2 in the restricted model above.

The following table presents the Alpha for LLS-sample firms, the Alpha for Chinese firms, and the discrepancy.

	Dividend/earnings	Dividend/sales	Tobin's Q
Alpha in LLSV	44.9493	1.8907	1.1559
Alphas for Chinese firms: unrestricted model			
Restricted model	11.5033	2.5876	0.5151*
Unrestricted model	11.8270	1.1490	0.5831

Adjusted alphas for Chinese firms: restricted model			
Restricted model	14.5388	0.8131	0.2946
Unrestricted model	14.8626	−0.6255	0.2582
Discrepancy			
Restricted model	30.4105	1.0776	0.8613
Unrestricted model	30.0804	2.5162	0.6898

*Significance at 1% level. The other two alphas in the restricted model for China are not significant.

Method 3: Firm level out-of-sample prediction:

We also perform firm-level out-of-sample predictions, based on the regression results from LLSV (2000b, 2002). The results are similar to the above two methods. Method 3 can actually be proven to be mathematically identical to the unrestricted model in Method 2, and thus the details are omitted here.

Summary of results:

(1) The out-of-sample prediction for Dividend/earnings is dramatically different from the empirically observed value (lower than the low boundary).
(2) The observed dividend/sales, and Tobin's Q ratios locate between predicted boundaries.
(3) The discrepancy of the unexplained portion of the dependent variables is large for dividend/earnings, but small for dividend/sales, and Tobin's Q.

(The average ratios themselves are not dramatically different between China and other countries: 30.23(China, Dividend/earnings) vs. 32.61, 2.35 vs. 1.99, and 1.21 vs. 1.38.)

Conclusion: We can conclude that the independent variables proposed in previous studies do not explain the firm behaviors for Chinese firms as for firms in other countries. However, we cannot specify which variables or mechanisms account for the difference, nor how great the difference is.

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