

THE IMPACT OF STOCK MARKETS ON CHINA'S ECONOMIC DEVELOPMENT: SOME PRELIMINARY ASSESSMENTS

James Laurenceson
School of Economics
The University of Queensland
Brisbane Qld 4072
Australia
fax: 61 7 3365 7299

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**THE IMPACT OF STOCK MARKETS ON CHINA'S
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James Laurenceson

Abstract

The role that stock markets should be afforded in economic development policy in China is the subject of debate. Some argue that they are essential to reforming state-owned enterprises (SOE's) and overcoming deficiencies in China's credit markets. However, others claim they are not necessary institutions for achieving high levels of economic development and are more likely to be destabilizing. This paper seeks to shed light on the impact that stock markets have had on China's economic development to date. Available data suggests that listing SOE's has been important in terms of raising funds for their reform. However, the corporate governance impact has been ineffectual and stock markets were also an insignificant source of funding for non-state owned firms. Finally, on a macro-level, their impact on the overall level of savings mobilization and the allocative efficiency of capital has been negligible. The policy conclusions are that, firstly, the state should begin trading the shares that it controls, and secondly, non-state owned firms should also be allowed to list.

1. INTRODUCTION

Since the formation of national exchanges in 1991, China's stock markets have developed rapidly. When placed in an international comparative perspective, Laurenceson (2001, p.63) shows that, at least when measured in terms of market capitalization, stock market development in China appears advanced relative to the overall level of economic development. The rising importance of stock markets over the past decade has largely been the result of the central government promoting them as a means of facilitating the reform of state-owned enterprises (SOE's). However, despite their rapid growth and promotion, the role that stock markets should be assigned in China's economic development policy is the subject of continuing debate amongst economists.

On one hand, some development economists view stock markets as an 'indispensable' means of reforming China's large SOE's (Xiang, 1998). According to this view, transforming SOE's into shareholding companies can provide them with the necessary funds to reform and modernize, reduce their dependence upon debt finance and improve corporate governance. Also on a positive note, it is often argued that stock markets are a means of overcoming the negative effects of government financial repression in China's credit markets (Li, 1994, p.3). For example, if a privately owned firm could not gain access to credit from the dominant state banking system, then an equity issue could represent a viable

alternative funding source.

There is, however, a competing position, which argues that China's economic development would best be served by focusing on the reform of existing credit markets. In support of such a view, the successful, bank-based development experiences of countries such as Germany and Japan are frequently cited. On this basis it is contended that stock markets are not necessary institutions for achieving high levels of economic development (Singh, 1990; He, 1994). Some authors take an even more extreme position and argue that stock markets are in fact likely to harm economic development due to their susceptibility to market failure, which is often manifest in the volatile nature of stock markets found in many developing countries (Singh, 1997; Singh and Weiss, 1998).

In light of these conflicting views, and the key role that financial reform policy occupies in the transition to a market economy, the time is ripe for an assessment of the contribution that stock markets have made to China's economic development to date. Section 2 of this paper reviews key theoretical and empirical contributions to the literature dealing with the link between stock markets and economic development. Section 3 then uses available data to make an assessment of their impact in China. Section 4 summarizes the findings and draws policy conclusions.

2. STOCK MARKETS AND ECONOMIC DEVELOPMENT: LITERATURE SURVEY

The theoretical and empirical literature concerning stock markets and economic development is vast and this section does not attempt to cover it in its entirety. Like financial institutions, the channels through which stock markets influence economic development are (a) the savings rate, (b) the quantity of investment and (c) the quality of investment (Singh, 1997, p.774). On a microeconomic level, such channels can be discussed in terms of the impact on corporate finance and corporate governance. However, it is also important to consider on a macroeconomic level whether the overall level of savings has been affected. Otherwise, for example, it could be that the introduction and promotion of stock markets simply causes a substitution by savers towards holding shares instead of bank deposits, while the overall level of investment funds remains constant. This, of course, is not to say that such a substitution could not impact on economic development, such as in the case where financial institutions or stock markets mobilize and allocate funds relatively more efficiently than the other.

Traditionally, an important debate in the literature has been whether a stock market-based financial system or a bank-based system impacts upon channels a) – c) more effectively. The corporate governance role of financial institutions and markets in particular is

often discussed in terms of two distinct models (Mayer, 1994, p.189). The first model is labeled the outsider, stock market-based approach (OS) and is associated most notably with the US and the UK. Under the OS model, firm ownership is typically diffuse and individual shareholders are outsiders in the sense that they only have arms length input into the firm's decision-making through a board of directors. Corporate governance in this model is performed primarily through a market for corporate control. Therefore, the stock market plays a central role in corporate governance via the takeover mechanism. The second model is labeled the insider, bank-based model (IB) and is most typically associated with Germany and Japan. In the IB model, firm ownership is concentrated in the hands of a few key shareholders that rarely trade their shares. Corporate governance is exercised from within the firm by these insiders rather than through a market for corporate control. Banks, rather than stock markets, feature predominantly in this model. Their influence is through several channels, including being important suppliers of external finance, holders of firm equity and holding seats on the firm's management board (Corbett, 1994, p.316). With respect to transitional economies, there is considerable debate as to whether such economies are best served by the OS or IB model (Popov, 1999, p.1). On one hand, the IB model seems the most natural choice because banks are already established and have a history of lending to firms (Aoki, 1995). Stock markets only exist in embryonic form in many transitional economies and hence cannot be expected to play a significant role in corporate financing and governance, at least in the short and medium term. Scholtens (2000, p.535) also argues that stock markets

require a much more elaborate legal system and prudential framework than banks to function effectively. On the other hand, it could be argued that there is little scope for the development of bank-led corporate governance because the state banks that dominate the financial sector in transitional economies are not skilled in making decisions according to commercial principles (Rowstowski, 1995).

Empirical studies examining the impact of stock markets on economic development have produced some important insights. Earlier studies based on international panel data returned differing results. For example, Atje & Jovanovic (1993), using a data set of 39 countries over the period 1980 – 1988, found that a strong, positive and statistically significant relationship existed between stock markets and economic growth. However, this result was later criticized by Harris (1997) on the basis of the methodology employed. Using an expanded data set and an alternative model specification, Harris (1997) concluded that the evidence suggesting that stock markets promote economic development was “at best very weak”. More recent studies by Levine & Zervos (1998) and Khan & Senhadji (2000) have been particularly informative due to the utilization of nested models and more detailed model specifications that consider separately the channels through which financial institutions and markets impact upon economic development. The findings of these studies suggest that a) stock markets and financial institutions are not necessarily competing in nature, but rather are complimentary with both potentially positively impacting on economic development, and b)

the stock market has its greatest impact on economic development through its creation of liquidity. This finding acts as confirmation for earlier theories that postulated that the liquidity provided by stock markets raises the productivity of capital on an economy-wide level because it facilitates longer-term, profitable investment (Demirguc & Levine, 1996, p.229).

Another important contribution of recent empirical studies has been to show that the impact stock markets have on economic development appears to display considerable diversity between individual countries. For example, evidence presented by Arestis & Demetriades (1997, p.785-790) concluded that the relationship between stock markets and economic development in the US was largely positive but insignificant in the case of Germany. Such findings should not be surprising. Okuda (1990, p.240), for example, earlier noted that the causal link between financial factors and economic development is crucially dependent upon the nature and operation of financial institutions, markets and policies pursued by individual countries. Therefore, while the findings of studies using international panel data are informative, they also need to be complimented by individual country case studies. Section 3 contributes to this effort by considering the case of China.

3. STOCK MARKETS AND ECONOMIC DEVELOPMENT: THE CASE OF CHINA

Data constraints seriously impinge upon an empirical investigation into the impact of stock markets on China's economic development. Typically, only financial data such as stock prices and trading volumes are available, which goes a long way to explaining why the bulk of previous studies examining China's stock markets have been from a financial economics perspective rather than a development economics perspective. This paper primarily makes use of a relatively comprehensive data set of China's listed companies published on-line at www.chinaweb.com. This site is produced by ChinaWeb Ltd, in association with contributors such as *Homeway*, a leading provider of financial services in China, and the *South China Morning Post*, Hong Kong's leading English language news provider. It makes available selected data on China's listed firms, with the information being sourced from the latest available company annual reports (1999 or 2000).

To consider the corporate financing contribution of stock markets, the ideal approach is to compare the relative importance of internal financing, external equity financing and external debt financing in explaining the growth of net corporate assets (Singh & Weiss, 1998, p.610). Unfortunately, data limitations prevent such an analysis from being conducted in the present paper. To shed light on this issue, the equity / asset ratio for each company was first

calculated. This datum was available for 902 listed companies. According to SSB (*CSY 2000*, p.643), the total number of listed firms on China's stock markets in 1999 was 945. The mean equity / asset ratio returned was 53.1% (median = 54.2). While this result does not shed light on the importance of equity capital relative to other financing sources, it does nonetheless indicate that equity financing in an absolute sense has been a significant source of finance for listed companies.

Considering the liability / asset ratio of listed companies is also useful in gauging the importance of equity financing. Liabilities of non-listed SOE's consist almost exclusively of bank loans and in recent years have reached extremely high levels. Indeed, as noted in the introduction, one of the key objectives of listing SOE's is to reduce their dependence upon debt finance. There are two simple ways that can be used to test if equity financing has reduced dependence upon debt financing. Firstly, looking at listed firms, one would expect to see a negative correlation between the equity / asset ratio and the liability / asset ratio. That is, those firms which have been permitted greater access to equity financing, should have been able to reduce their liability / asset ratio and their dependence on debt to a larger extent. Relevant data was available for 915 companies. The results confirm a strong negative correlation between these two series, with a correlation coefficient of -0.97 .

Secondly, if equity financing has been significant, it could also be expected that

listed firms (formerly SOE's) would have a lower liability / asset ratio than SOE's taken as a whole. For reasons of data availability, this study focuses solely on comparing listed firms from the industrial sector with state-owned industrial firms taken as a whole. Focusing on industrial firms is also warranted because the bulk of China's listed companies are from the industrial sector, with a minority coming from sectors such as real estate development, retailing, tourism, transport and finance. Aggregate data for all industrial SOE's in 1999 is available from SSB, *CSY 2000* (p.414-417), while data on listed companies is sourced from the on-line database acknowledged earlier. In order to make these data series as comparable as possible, two actions were first undertaken. Firstly, listed firms from non-industrial sectors of the economy were removed from the calculations. Deciding whether to include or exclude a listed firm is not always a clear cut matter given that several are conglomerates and undertake activities in numerous sectors of the economy. Therefore, as a rule, if industrial activities constituted the primary business activity of a listed firm, it was retained for the comparison. After this filtering process, 747 listed companies were retained. Secondly, it was also necessary to remove that component of industrial SOE's assets that are used for non-industrial production. This is because non-listed industrial SOE's provide a variety of services to workers such as schools and hospitals to name a few. However, in the process of listing, these assets are removed the firm's books. The percentage of industrial SOE's assets not used for industrial production has been placed at around 18% by Jefferson, Rawski and Zheng (1996, p.176). However, Xu and Wang (1997, p.11) state that such non-productive

assets typically account for between 25% - 50% of the to-be-listed firm's total assets. A figure of 25% has been used for this study. After these steps have been undertaken, the data shows that the average liability / asset ratio of listed industrial firms was 43.96%. The figure for all industrial SOE's meanwhile was 82%. Thus, this result is supportive of the above evidence in suggesting that external equity financing has been a significant source of funding for listed firms and useful in terms of reducing their liability / asset ratio.

To gauge the corporate governance effects of China's stock markets, the ratio of net profits to assets was calculated for each listed company. This datum was available for 925 listed companies. Unfortunately, measures directly considering economic efficiency such as the productivity of capital could not be calculated due to the necessary data being unavailable. Nevertheless, calculating profitability is still relevant because one of the stated corporate governance objectives in transforming SOE's into listed companies is to make them more responsible for their own profits and losses. The average ratio of net profits / assets was just 3.60% (median = 4.08). In addition, 9.19% of all companies had a net profit / asset ratio of less than 0. To put the profitability of listed firms in a comparative perspective, the net profit / asset ratio of listed industrial firms can be compared with the net / profit ratio of industrial firms of other ownership types. The average net profit / asset ratio was 1.65% for all industrial SOE's (after non-productive assets have been removed), 4.33% for collective firms, 3.78% for shareholding companies (in China most shareholding companies are not listed on

public exchanges), 3.56% foreign-funded firms and 2.99% for firms funded from sources based in Hong Kong, Macao or Taiwan (SSB, *CSY 2000*, p.414-417). Thus, in this context, the corporate governance impact of stock market appears comparable with that achieved by other industrial firms featuring non-state ownership. There is, however, one factor that makes the comparative financial performance of listed firms alarming and raises concerns about the corporate governance impact of the stock market. Firms selected for listing on China's stock exchanges are not drawn in a random manner. As noted by Yao (1998, p.6), it is a prerequisite condition for a firm to attain a stock market listing that it must have been profitable for the previous three years. As a result Xu and Wang (1997, p.3) make the point that it is important to realize that "Publicly-listed companies, however, represent only a small subset of China's enterprises – a clean and perhaps better performed group of enterprises which were chosen to be listed on the two stock exchanges". Thus, the fact that the data indicates that roughly 10% of listed companies now have a negative net profit / asset ratio, despite the short history of China's stock markets, suggests some serious corporate governance problems exist.

One corporate governance problem postulated by Tam (1999, p.88) is that while the Chinese authorities have tried to impose a legal and regulatory framework borrowed from the US model of corporate governance, present conditions in China's stock markets are more akin to countries such as Germany and Japan. In particular, in contrast to the diffuse ownership of listed companies in the US, shareholding in China's listed companies remains

highly concentrated. Based on the annual reports of China's listed companies in 1995, Xu & Wang (1997, p.49) showed that the percentage of outstanding shares owned by the five largest shareholders in China's listed companies averaged 58.1%. This compared with 25.4% in the US, 33.1% in Japan and 41.5% in Germany. The data set available for this paper can be used to update Xu & Wang's data to see if any change in ownership concentration has occurred. Ownership concentration data was available for 910 listed companies. The results showed that the ownership share of the top five shareholders has remained practically unchanged over the past five years with a mean value of 58.39% (median = 59.81). The extremely small ownership share of minority shareholders is also clearly evidenced by the data. For example, expanding the calculation to the ownership concentration share of the top 10 shareholders only slightly increases the mean value to 60.99 (median = 62.55). The ownership share of the single largest shareholder averaged 44.22% (median = 43.46). In 369 companies, or 40.55% of the listed companies for which data was available, the ownership share of the largest shareholder was equal to or greater than 50%.

However, as illustrated by the experiences of countries such as Germany and Japan, higher ownership concentration *per se* need not result in a failure of corporate governance. The key problem in the case of China's stock markets is that the high ownership concentration actually reflects the continuing dominance of state ownership in many listed companies. This is a point of departure from the German and Japanese model of corporate

governance. For example, OECD (1995, p.17) showed that in 1993 public authorities only owned 1% of outstanding corporate equity in Japan and 4% in the case of Germany. Dominant state ownership means that the traditional incentive problems facing SOE's have not changed. As long as the state continues to be the primary shareholder, the corporate governance impact of 'insiders' on the firm's performance will be sub-optimal. Furthermore, because shares controlled by the state (so-called state shares and state-owned legal person shares) cannot be legally traded, the market for corporate control where 'outsiders' exercise governance is compromised. To estimate the degree to which this has occurred, the proportion of tradable shares to total outstanding shares was calculated. This datum was available for 913 companies. The average ratio of tradable shares to total outstanding shares was just 38.53 % (median = 36.70). In only 8.32% of companies, was the ratio greater than 50%. Thus, a market for corporate control is non-existent for the overwhelming majority of China's listed companies and it can be concluded that managers face only a limited threat of punishment for poor decision-making from either 'insiders' or 'outsiders'. It should also be noted that the influence of the state runs ever deeper than their dominant ownership position. For example, Xu & Wang (1999, pp.82,83) showed that the state's representation on the board of directors of many listed companies far outweighed that which could be justified even on the basis of their sizeable ownership stake.

The impact of stock markets on macroeconomic channels to growth such as the rate

of savings and the overall allocative efficiency of capital are now considered. The ideal approach for empirically investigating the former relationship is to regress the various determinants of savings including stock market parameters, against the rate of savings (Bonser-Neal and Dewenter, 1999). Unfortunately, this would not be a meaningful approach in the case of China given that only annual data since 1991 is available for many relevant variables. However, what is useful to consider is the savings mobilization performance of China's stock markets compared with other domestic securities markets and financial institutions. Table 1 shows that despite impressive growth, the volume of funds raised by the stock market continues to remain well behind these other channels of savings mobilization. This is instructive because it means that any impact stock markets may have had on aggregate savings must have been very small.

This conclusion also applies to the impact of stock markets on the allocative efficiency of capital at a macroeconomic level. Bearing this in mind, the allocative efficiency effects of stock markets can be considered in more depth by evaluating the informational efficiency and fundamental valuation efficiency of the stock pricing mechanism. Testing for the informational efficiency of stock prices revolves around examining whether stock prices behave in a manner implied by the Efficient Market Hypothesis (EMH). The EMH contends that if stock prices are efficient in an informational sense, they will rapidly adjust to new information and that current prices will fully absorb and reflect all available information

Table 1. Savings Mobilized via Stock Markets, Other Domestic Securities and Financial Institutions

Year	Stock Markets	Other Domestic Securities	Financial Institutions
1991	5.0		4066.4
1992	94.1		5389.0
1993	233.0		6159.0
1994	365.1	2075.3	10845.5
1995	56.03	1727.0	13209.7
1996	271.6	3172.3	14889.0
1997	735.8	4098.5	13819.1
1998	468.6	5757.6	13307.6

Notes:

1. The unit for all data is RMB 100 million.
2. The data for stock markets refers to the capital raised through A and B share issues on China's stock markets. The data for other domestic securities refers to the total value of issued securities such as government bonds, corporate bonds, etc. The data for financial institutions refers to the amount of new deposits in China's financial institutions. It is calculated as the change in outstanding year-end balances.
3. A blank space signifies that data was unavailable.

Sources:

1. SSB, *CSY*, various years.
2. *ACFB 1997*, EE, p. 161.
3. *CMS*, various issues.

(Mookerjee & Yu, 1999). Empirical testing of the EMH involves testing whether current stock prices and returns can be predicted on the basis of past values. If stock prices are efficient then these variables should display a random walk process. Otherwise, the stock pricing mechanism can be considered inefficient because investors can theoretically achieve profits simply by utilizing available information such as past prices. Numerous recently conducted empirical studies on the behavior of stock prices in China have concluded that they do not follow a random walk process (Song, et al., 1998; Su & Fleisher, 1998; Mookerjee &

Yu, 1999). Testing whether stock prices accurately reflect the economic fundamentals underlying a firm is conceptually more difficult. However, the degree of stock price volatility can serve as a useful guide. For example, if stock prices are driven by speculative motives and herding behavior, then they will be highly volatile and represent inefficient signals for capital flows in the economy (Singh, 1997, p.774). For much of their short history, the stock markets in Shanghai and Shenzhen have been highly volatile and numerous instances of price bubbles can be easily cited. For example, in one instance, Shanghai's composite price index doubled in a single day (Su & Fleisher, 1998, p.250). Xu & Wang (1999, p.95) also note that the speculative nature of shareholding in China amongst individual investors is apparent by the fact that the average period for which they held shares was just 1-2 months. This compared with 18 months in the US. Many researchers and observers, including the People's Bank of China, have expressed the view that stock prices are excessively volatile in the sense that they often reflect speculative activities rather than the economic fundamentals of listed firms (PBC, *CFO 1994*, p.54; Spencer, 1995, p.29; Mookerjee & Yu, 1999). The fact that shares controlled by the state cannot be traded worsens the degree of share price volatility in China. When only a small proportion of a company's total shares are available for trading, share prices cannot reflect the market's view of the fundamental value of a listed firm (Spencer, 1995, p.30; Yao, 1998, p.22). However, it should be noted that this volatility does appear to have declined in the most recent years. For example, Laurenceson (2001, p.62) shows that the standard deviation in the Shanghai composite share price index (based on

monthly observations) fell from a high of 42.69 in 1994 to 6.32 in 1998.

4. SUMMARY OF FINDINGS AND POLICY IMPLICATIONS

Taken as a whole, the findings of the previous section indicate that the impact of the stock market on China's economic development has been limited. In particular, the data highlighted serious concerns over the corporate governance impact of the stock market on reforming SOE's. This is an important finding because it implies that the continual usage and promotion of the stock market almost solely for the purpose of SOE reform is a deficient policy choice, at least as long as the commitment to majority state ownership of listed companies is maintained. It also implies that the central government will have to look to alternative corporate governance strategies in their bid to improve the performance of SOE's and promote their reform.

The one area where the stock market did appear to be quite successful in helping to reform SOE's was in the raising of funds for their modernization and restructuring. However, the importance of the stock market as a channel for raising funds for investment should not be exaggerated. Firstly, on a microeconomic level, because nearly all listed firms are ex-SOE's, the stock market has been an insignificant source of external financing for non-state owned firms. Gregory & Tenev (2001) state that in 1999 only 1% of listed firms were non-state

firms. Secondly, on a macroeconomic level, the total amount of funds raised on stock markets has been insignificant relative to the aggregate amount of savings in China.

Finally, the evidence also suggested that the stock market has not yet significantly improved the efficiency with which capital is allocated in the economy. In large part this was due to the fact that stock markets only allocate a small percentage of total savings in China. Evidence from previous studies was also presented which pointed to the fact that the efficiency of the stock pricing mechanism as a signal for capital flows has often been lacking. Also, given that the impact of the stock market on the corporate governance of listed companies was dubious, the most efficient firms were not necessarily utilizing the funds raised.

Nevertheless, the above findings should not be interpreted as meaning that the stock market cannot play a useful role in China's economic development in the future. Rather, they simply suggest that there have been deficiencies in the way it has been used to date. Two strategies in particular would seem to offer considerable promise. These strategies are in addition to the need to improve the prudential framework, which is a problem common to stock markets in nearly all developing countries. Firstly, in order to better utilize the stock market as a means of improving corporate governance in reforming SOE's, the state could begin converting and trading the shares that it controls. This is not a new policy proposal

(Tam, 1999, p.98). Indeed, Ma (1995, p.169) notes that the state has experimented with such activities since 1993. However, the data used in this paper shows that little real progress has been made. Secondly, the stock markets could also be opened up to non-state owned enterprises. Given the success of the stock market in raising funds for SOE's, it can be envisaged that it could become an important means through which China's non-state sector could access funds for investment in the future. This would be particularly valuable because it is the non-state firms that at present are largely excluded from accessing the dominant state banking system. Allowing more firms to list would also then place the stock market in a more prominent position to influence the level of aggregate savings in China. Another advantage of listing non-state firms on the stock market is that because there is no ideological conflict over ownership rights, all shares could be freely floating, which would have the effect of introducing a market for corporate control and reduce share price volatility. Thus, in this context, the stock market could well improve the allocative efficiency with which capital is allocated in China.

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