

Tax Reforms for Enhancing the Stable Development of the Chinese Financial System

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September 2003

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Abstract

The Chinese economy has had the highest rate of growth in the world in the past two decades. However, despite its rapid growth and the significant improvements in its financial system, serious risks and problems still exist in both the commercial banking sector and the stock market, that may potentially threaten the stable development and growth of the entire economy. In this paper, these risks and problems in the stock market and the commercial banking sector are identified. Possible solutions are then discussed. Finally, tax reforms are proposed that have the effects of (1) eliminating the double taxation on cash dividends from corporate profits; (2) encouraging the substitution of new equity for existing debt by corporations, which can lower the P/E ratios without lowering the stock prices and improve quality of commercial bank assets by reducing the probability of new nonperforming loans; and (3) attracting new and longer-term investors, both domestic and foreign, to the Chinese stock market. It is also shown that the proposed tax reforms will not result in a significant reduction in total fiscal revenue.

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Tax Reforms for Enhancing the Stable Development of the Chinese Financial System

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1. Introduction

Taxation is an important instrument a government can use to control the macroeconomy. Despite the rapid growth of the Chinese economy and the significant improvements in its financial system in the past two decades, serious risks and problems still exist in both the commercial banking sector and the stock market. These problems potentially threaten the stability of the entire financial system and the macroeconomy itself, and affect the prospects of future economic growth. A complete solution of all these problems will require numerous measures on several fronts and over many years. In this study, a proposal is made to change the tax treatment of cash dividends paid by publicly listed Chinese companies at the corporate level, with the effect of eliminating the double taxation of cash dividends. Such a tax reform can encourage higher cash dividend rates, more and longer-term investment by the Chinese public in Chinese common stocks, and the substitution of new equity for debt by Chinese corporations. If these expected results materialize, the stability of the Chinese stock market will be greatly enhanced while its size will greatly expand with the entry of new domestic and foreign portfolio investors. In addition, the increase in equity financing—as opposed to debt financing—will strengthen the financial balance sheets of Chinese companies and reduce the probability of their defaulting on their loans, and thus indirectly help to solve the problem of nonperforming loans (NPLs) in the commercial banking sector. Overall, the institutional foundations of the Chinese financial system will gain a much firmer footing and the vulnerability of the Chinese economy to a financial crisis will be significantly reduced.

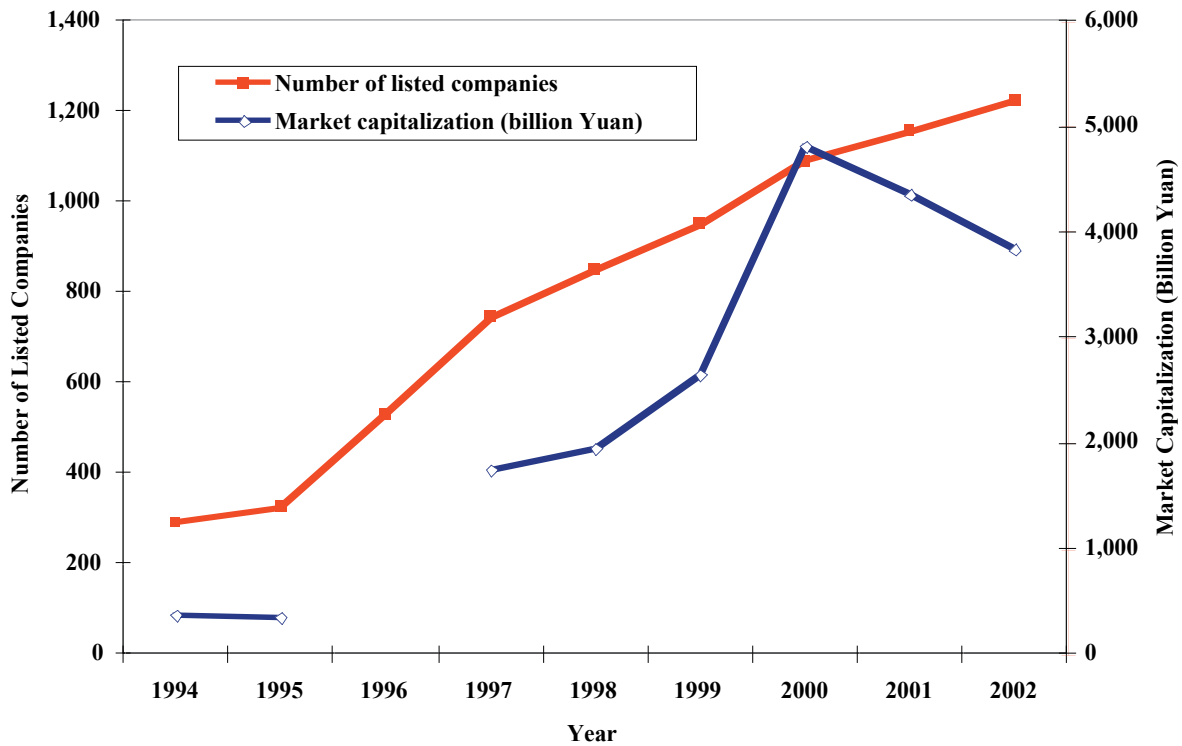
2. Two Potential Problems Threatening the Chinese Financial System

The two potential problem areas of the Chinese economy are the commercial banking sector and the Chinese stock market. The four major state-owned commercial banks—the Industrial and Commercial Bank of China, the Agricultural Bank of China, the Bank of China, and the China Construction Bank—which together account for approximately 70 percent of the bank deposits and 63 percent of the outstanding loans in China,¹ all have significant nonperforming loans (NPLs) problems. The Chinese stock market, despite many significant improvements over the years, still suffers from too much speculation and too few long-term investors, resulting in high volatility and possible overvaluation. The failure of any one of the major commercial banks, or a crash of the stock prices can have tremendous repercussions on the stability of the entire financial system as well as the Chinese economy itself.

A. The Chinese Stock Market

At year-end 2002, the Chinese stock market—including both the Shanghai Stock Exchange and the Shenzhen Stock Exchange—had 1,224 listed companies and a total capitalization of 3.83 trillion Yuan, equal to 37.4 percent of the Chinese Gross Domestic Product (GDP) (see Figure 1).² (By comparison, in 2001, the domestic market capitalization/GDP ratio of the United States was 145.86 percent, the United Kingdom 170.58 percent, and Singapore 156.93percent)³ During the past three years, the China Securities Regulatory Commission (CSRC)⁴ has introduced a series of positive reform measures in the areas of auditing, corporate governance, information disclosure, transparency, and monitoring of illegal activities such as market manipulation and insider trading. These measures brought much needed discipline, standardization, and uniformity to the Chinese stock market and improved market-friendliness and safeguards for Chinese investors. However, many problems remain, and a major correction, or even a crash of the stock market is possible if these problems are allowed to deteriorate or if there is a sudden loss of public confidence. Some of these problems are discussed below.

Figure 1: Development of the Chinese Stock Market

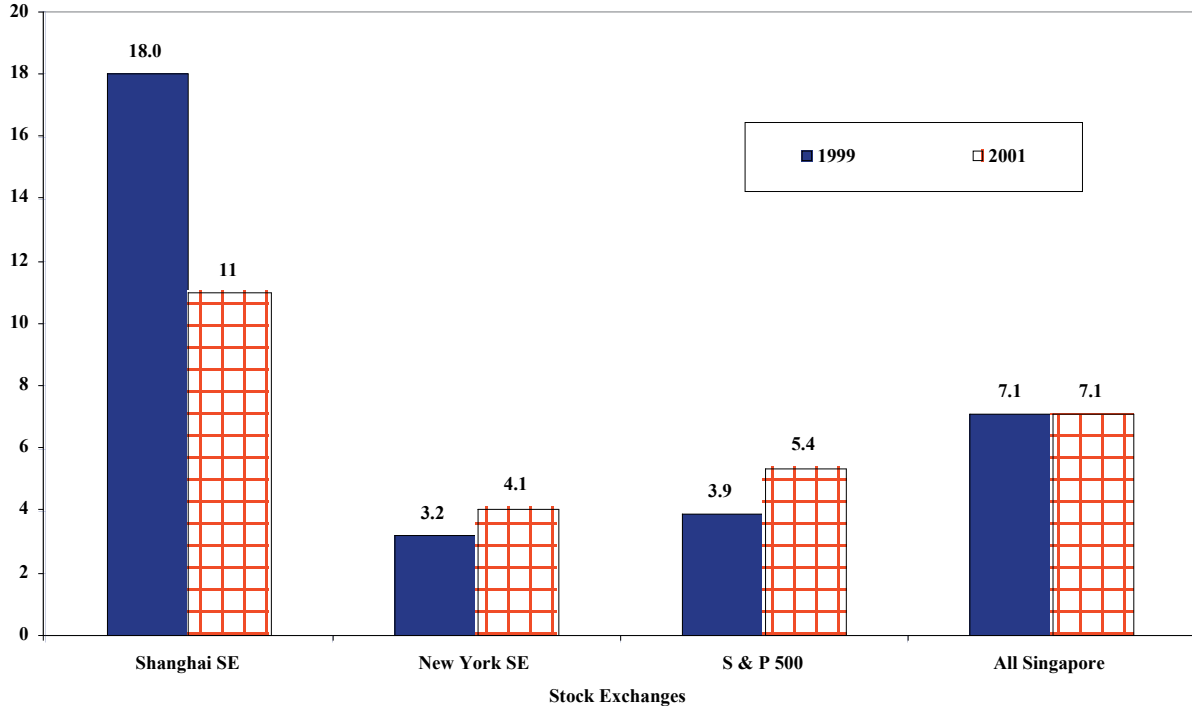


Source: *China Statistical Yearbook, 2002* and China Securities Regulatory Commission Website: <http://www.csrc.gov.cn>.

(1) A High Degree of Speculativeness

Both the Shanghai and the Shenzhen Stock Exchanges have recorded historical highs and lows in every year since their establishment in 1990 and 1991 respectively. The market fluctuations are more volatile than other major stock exchanges in the world (see Figure 2). Such large fluctuations were caused by many historical reasons and policies such as the possible disposition of the state-owned, currently nonnegotiable, shares in the publicly listed companies and the equity structure of the listed companies themselves. Since these issues are not the focus of this study, they will not be discussed further here.

Figure 2: Comparison of the Coefficients of Variation of the Monthly Closing Index



Note: The “Coefficient of Variation” is defined as the ratio of the sample standard deviation to the sample mean times 100 percent. Here the sample mean is taken to be the arithmetic mean of the values of the annual opening and closing indexes.

Source: *World Stock Exchange Fact Book 2002*; Global Financial Database.

High volatility of stock prices creates opportunities for investors to profit from price changes alone, thus encouraging speculative short-term capital gains-oriented investing, and resulting in high turnover of stock ownership. The annual liquidity ratio, defined as the ratio of the annual turnover to the average negotiable market capitalization,⁵ of the Chinese stock market were 412 percent and 461 percent in 1999 and 2000 respectively, which means that the average stock holding period was only about three months. The comparable figures for the New York Stock Exchange were 76.88 percent and 86.09percent,⁶ with a 1.2-year average holding period. The comparable figures for the Singapore Stock Exchange were 40.14percent and 30.17 percent, with a three-year average holding period. Although the liquidity ratio for the Chinese stock market declined significantly in the past two years (to 233.79 percent in 2001 and 198.86 percent in 2002), it is still significantly higher than other markets in the world. Moreover, a major reason for the decline of the Chinese liquidity ratio appeared to be that many investors were (involuntarily) trapped into holding their shares after the large declines in the share prices—liquidation of their positions would imply an immediate (and most likely irreversible) recognition of large capital losses, a prospect that the investors and their lenders would like to avoid.

The shorter the expected holding period of the shares by the investors, the less attention the investors tend to pay to the fundamentals of the business operations of the

companies whose shares they own. When investors focus on making quick gains from speculation, they will ignore the financial situation of the firms, even if the auditing is accurate and information disclosures are perfect. Short-term investors have no interest in improving corporate governance—only long-term investors do.

(2) Overvaluation (High Price-Earning Ratios (P/Es))

According to data on the global stock markets, the average price-earning ratios were between 15 and 20 for the last 100 years. This range serves as a useful benchmark. During the period 1994–2002, the average P/E ratio of the Dow Jones Industrials stocks was between 13 and 28. It reached its peak of 27.67 at the end of 2001 and fell to 21.69 at the end of 2002. The Chinese stock market index has already declined substantially from its peak, reached at the end of 2000, when the average P/E ratio on the Shanghai and Shenzhen Stock Exchanges was around 60. But the current average P/E of between 35 and 40 is still high in comparison to the stock markets in both developed and developing economies in the world. At the end of 2002, the average P/E was 34.43 on the Shanghai Stock Exchange and 36.97 on the Shenzhen Stock Exchange, compared to 15.61 on the South Korean Stock Exchange and 15.35 on the Hong Kong Stock Exchange. As of 2002, more than 50 percent of the 1304⁷ publicly listed Chinese stocks had P/Es higher than 40, 227 stocks had P/Es higher than 100 and only 284 stocks, less than a quarter of the total, had P/Es less than 30. It is of course possible to argue that the Chinese P/Es are high because of the high rate of growth of the Chinese economy. However, the view of the majority of knowledgeable observers of the Chinese stock market leans toward overvaluation (or “irrational exuberance”) as the more plausible explanation. As long as the P/Es remain too high, the stock market remains vulnerable to a possible crash. But is it possible to bring down the P/Es without bringing down the prices of the shares on the Chinese stock market? The answer is a definite “Yes”. This concept will be further developed below.

(3) Low Cash Dividend Yields

Before 1999, most publicly listed Chinese companies did not pay any cash dividend. In 1999, cash dividends were paid on only 94 listed stocks, equivalent to 9.1 percent of the total of 1029 stocks. The average dividend yield in 1999 was 0.6 percent, lower than almost all other major stock markets in the world. Among the 41 stock market dividend yields published in the *World Stock Exchange Fact Book (2002)*, only South Korea’s was lower than 0.6 percent. Approximately 20 percent of all listed companies in China have never paid any cash dividends since 1992, while 6 percent of these companies have never made a profit distribution of any kind to their shareholders. However this pattern has begun to change more recently.

At year-end 2000, the China Securities Regulatory Commission (CSRC) decreed that cash dividends would become an essential requirement for a company to be publicly listed or to issue new equity. Thus, in 2000 and 2001, approximately 60 percent of listed stocks distributed cash dividends but the amounts were still not significant. For the year 2000, more than 60 percent of the listed stocks had a dividend yield, defined as the annual cash dividend per share/closing price at the end of the year, between 0 percent and 1 percent, and 27 percent between 1 percent and 2 percent. The low cash dividend yields pose a number of problems. First, they are not attractive enough for long-term investors to want to purchase and to hold indefinitely, given the risks (by comparison, the rate of interest on one-year fixed-term bank deposits is 1.98 percent). Second, they encourage short-term, speculative

gains-oriented, in-and-out trading, leading to high turnover of the stock market and high volatility (further discouraging long-term investors). Third, there is little support for a price floor in the event sentiments turn bearish.

All of these factors contribute to the potential instability of the Chinese stock market and to the failure to attract long-term investors, both individuals and institutions (e.g., insurance companies and pension funds),⁸ to the stock market.

B. The Chinese Commercial Banking Sector

In the Chinese commercial banking sector, NPLs, which currently stand at 24 percent of all bank loans, constitute the most severe problem, while the excessive leverage of the borrowers further contributes to a high probability of new loans becoming nonperforming. In addition, indirect “margin” loans to finance purchases of shares on the Chinese stock exchanges also imperil the potential stability and solvency of the major Chinese commercial banks.

(1) Nonperforming Loans (NPLs)

Nonperforming loans (constitute the principal obstacle for the further development, liberalization, and reform of the commercial banking sector in China. At year-end 2001, the total loans of the four major state-owned commercial banks amounted to 7 trillion Yuan, of which 1.76 trillion Yuan, or 25.37 percent of the total, were NPLs. Among these,, the confirmed losses amounted to 600 billion Yuan, or 8 percent of the total loans.⁹ In 1999, four financial asset management companies (AMCs) were established, one for each of the major commercial banks. Their functions were to purchase, manage, and dispose of the NPLs of the four respective commercial banks. By year-end 2001, these four AMCs had purchased 1.4 trillion Yuan worth of NPLs from the commercial banks, but the results were not completely satisfactory. For example, by 2002, the Great Wall Asset Management Company of China was only able to dispose of assets with an original value of 83.82 billion Yuan, or 24.3 percent of the total NPLs that it had purchased, and recover only 16.03 billion Yuan (with a recovery rate of only 19.12 percent).¹⁰

While the problem of the existing stock of NPLs has not been solved completely satisfactorily, the flow of new NPLs continues unabated. In 1998, the Ministry of Finance issued 270 billion Yuan worth of special Treasury Bonds to restore the capital adequacy of the four state-owned commercial banks to the 8 percent required by the Basel agreement. Five years later, the capital adequacy ratios in these four banks (with the exception of the Bank of China) have all fallen below 8 percent. Inadequate capitalization of the commercial banks potentially put them at a competitive disadvantage vis-à-vis foreign and other domestic commercial banks.

(2) Excessive Leverage of Borrowers

Indirect financing, or debt financing, by commercial banks is still the predominant method used by Chinese corporations for raising funds. Loans from commercial banks constitute more than 90 percent of the total funding; and approximately 75 percent of the loans come from the four state-owned commercial banks. From 1992 to 2001, Chinese enterprises raised a total of 775.5 billion Yuan through the issuance of common stock, while their loans from financial institutions increased by 8.6 trillion Yuan. In 2002, the net increase of total bank loans was about 1.9 trillion Yuan, while the funds raised through new equity amounted to only 96.2 billion Yuan, or five percent of the net increase in bank loans. Chinese enterprises

are thus highly dependent on bank loans.¹¹ As a result of the heavy dependence on debt financing, the debt-to-equity ratios of Chinese enterprises are typically quite high. In 1999, among the 918 listed companies (except for the 12 with negative equity), more than one-third had a debt-to-equity ratio greater than one. About 10 percent of the companies had debt-to-equity ratios greater than two. However, the overwhelming majority of the publicly listed companies in China are (partially owned) subsidiaries of unlisted Chinese state-owned companies. The parents of these listed companies tend to transfer their best assets to the listed subsidiaries and retain the worst liabilities, so that the debt-to-equity ratios of the parent companies themselves are typically much higher than their partially owned, publicly listed subsidiaries. In general, companies with a lower debt-to-equity ratio are less likely to be nonperforming on their loans. Thus, on the whole, the repayment ability of the listed companies is much better than the unlisted companies.¹²

Many studies emphasize the importance of debt financing in the growth of enterprises. However, the experience of the numerous bankruptcies in Thailand, South Korea, and Indonesia during the East Asian currency crisis in 1997–98, and the many huge bankruptcies in the United States in 2002 have highlighted the risks, moral hazards, and potential adverse impacts on the entire economy through spillover effects of the failures of enterprises with excessively high debt-to-equity ratios. With high debt-to-equity ratios, not only are individual enterprises more vulnerable to shocks and more prone to failure, but when a highly leveraged company actually fails, its bankruptcy in turn also affects adversely its suppliers and its creditor banks, and sometimes even its customers, helping to create a chain of additional failures. The high debt-to-equity ratios of their borrowers constitute one of the major reasons for the large proportion of NPLs in the Chinese commercial banks.¹³ The risks of failure of the entire financial system, as occurred in Thailand, South Korea, and Indonesia, can be greatly reduced if the average debt-to-equity ratio of the economy as a whole is lowered.

C. The Policy Dilemma

Facing problems in both the stock market and the commercial banking sector, the Chinese Government has been in a difficult dilemma: while loosening regulation and supervision of the stock market may lead to a greater bubble and eventually a much more serious market crash, tightening regulation and supervision, under current conditions of apparently excessive P/E ratios and a scarcity of long-term investors, may actually hasten its collapse. Moreover, it is widely known that many speculative investors in the stock market are “indirectly” financed by commercial bank loans.¹⁴ A crash in the stock market may aggravate an already bad NPLs problem in the Chinese commercial banking sector. However, calling these “indirect” loans now may also lead to a crash in the stock market itself.¹⁵

3. The Role of Taxation

A. Current Related Taxes in China

At the present time, there are more than twenty kinds of taxes in China. Here we shall focus on only the following three kinds of taxes that are related to the stock market.

(1) Double Taxation of Cash Dividends

The existing Chinese tax code provides for the double taxation of cash dividends paid by publicly listed companies. First, the company pays the “enterprise income tax.” In China there are two separate enterprise income tax codes: one for domestic enterprises, and the other for foreign-invested or funded enterprises. The statutory rates are the same—33 percent. However, there are all kinds of credits, tax preferences, and other special treatments. For publicly listed companies, the income tax rate used to be at most 15 percent, to provide an incentive for companies to become publicly listed. But this preference was discontinued in 2002 and the maximum rate for publicly listed companies has returned to 33 percent. Cash dividend payments are not deductible against enterprise income as a cost like interest payments are; they therefore come out of after-tax profit.

Second, the shareholder receiving the cash dividends is subject to a “personal income tax,” with a flat rate of 20 percent. There is currently no nationwide comprehensive personal income tax (PIT). Different items of personal income have different tax rates, some progressive and some proportional, and they are not consolidated.

(2) No Capital Gains Tax

Currently, the Chinese personal income tax code does not provide for the taxation of capital gains derived from securities trading in China, nor is there an offset for capital losses from securities trading against personal income. This exemption of capital gains—but not cash dividends—from personal income taxation encourages short-term speculation by investors and discourages longer-term holdings. The focus on short-term capital gains by investors in turn encourages listed companies to pay little or no cash dividends. The net result is that the existing pool of investors consists mainly of short-term, speculative gains-oriented investors,¹⁶ and enterprises find it difficult to increase equity-financing relative to debt-financing in the prevailing market because of the lack of investor demand.

(3) Securities Exchange Tax (Stamp Tax)

A third related tax is that of the “securities exchange tax,” or stamp tax. The rate is currently 0.2 percent of the value of the securities transaction. Investors pay this stamp tax, as well as some commissions, when buying or selling common stocks on the stock exchanges.

B. The Impacts of Tax Policies on the Behavior of Enterprises and Individuals

Cash dividends as a means of distribution of corporate profits have long been the subject of many studies. One of the most important reasons is the traditional double taxation on them; that is, cash dividends are paid from after-tax corporate profits and are subject again to personal income tax after they are received by the shareholders. In the literature there have been many analyses of the impacts of such double taxation.

(1) The Impact on the Organization of Enterprises

In 1958, Franco Modigliani and Merton Miller developed the famous “irrelevant” theorems on corporate debt and dividend policy. According to Modigliani and Miller (1958), “under perfect market condition with no tax, no transaction cost, no issue cost and no impact of dividend policies on investment policies, dividend policy is irrelevant to the valuation of a corporation”. In fact, these assumptions may not hold for all market situations, and dividends may still be relevant to the corporate valuation. After Modigliani and Miller

(1958), many economists, such as Harberger (1962), have argued that the double taxation on cash dividends distorts the capital allocation between the corporate sector and the noncorporate sector and have built complex models to illustrate the costs of such inefficiency. In essence, the double taxation of dividends at both the corporate and personal levels raises the required pretax rate of return in corporate sector, and this becomes a disadvantage for the corporate sector.

(2) The Impact on the Capital Structure

In general, three methods are used by corporations to finance their investments: (1) issuing more common shares, (2) using retained profit, and (3) using debt instruments. From the perspective of maintaining neutrality of taxation, tax policies should not distort financial decisions in the private sector, but the double taxation of dividends encourages corporations to finance their investments with debt rather than with new equity. Interest payments can be deducted before the corporate income tax and will only be taxed once on the creditor side. Consequently, equity-funded projects have higher costs than projects financed with debt at the same rate of return.

(3) The Impact on the Level of Corporate Profits and Its Distribution

Given that under double taxation of dividends, the cost of equity financing is higher than that of debt financing (and for that matter, higher than the cost of financing with retained earnings), why do some corporations still use equity-financing and pay cash dividends? There are two leading alternative explanations. The first explanation is based on the traditional view, which states that the nontax advantages of cash dividends to shareholders more than offset the disadvantages of the double taxation burden. For example, higher levels of cash dividends demonstrate the excellent financial condition and the bright future of the corporation; corporate management will be unable to use the internal cash at its sole discretion under a policy of high cash dividend payments. According to this traditional view, a more neutral tax policy will encourage corporations to pay even more dividends and to increase the overall economic efficiency. The second explanation is based on the so-called new view, which assumes that there is no substitution for the distribution of cash dividends. Dividend taxes paid by the investors lower the value of corporations and are capitalized into the values of the shares without any impacts on either the dividend or the investment policies of the corporations. So changing the tax policy by making it more neutral will not give corporations more incentive to pay more dividends. However, nearly all empirical studies show that the changes in the actual dividend payout rates are related to the changes in the tax rates on cash dividends.

C. Two Alternatives for the Elimination of the Double Taxation on Cash Dividends

The most thorough method for eliminating the double taxation on cash dividends is to integrate the corporate income tax and the personal income tax, that is, to impute all corporate income to the shareholders. This method essentially eliminates the corporate income tax, but the transactions costs for implementing this method can be extremely high—it effectively treats all corporations as limited partnerships for income tax purposes, with the additional complication of potentially high turnover of the members in the partnership. Short of complete integration, there are two common feasible methods for eliminating the double taxation of cash dividends: the dividend deduction method and the dividend relief method.

(1) Dividend Deduction Method

Under this method, the tax on cash dividends is eliminated at the corporate level, which means that cash dividend payments can be deducted from corporate income in the same way as interest payments before corporate income taxes. Cash dividends will be taxed to the recipients: for individuals, at the applicable personal income tax rate; and for corporate shareholders, at the applicable corporate income tax rate.¹⁷

The dividend deduction method has many advantages. First, it eliminates the distortion that arises from the differential tax treatment between incomes originating from the corporate and the noncorporate sectors. Second, it provides the same tax treatment for cash dividends and interest payments (taxes will be paid by the recipients of the cash dividends and interest respectively), thus eliminating the bias for debt financing against equity financing. This change in corporate income taxation will encourage corporations to issue new equity to replace existing debt, and thus reduce their debt-to-equity ratios. A lower corporate debt-to-equity ratio will lower the probability of a default on its bank loans and the probability of corporate bankruptcy. In the aggregate, this should result in a reduction (but not a complete solution) of the NPLs problem at the commercial banks.

Third, it offers the most direct incentive for publicly listed companies to pay shareholders cash dividends. Steady, dependable, and regular cash dividends can restore investor confidence and attract new long-term investors, both domestic and foreign, to the stock market, and hence help to expand the overall size of the stock market. They also provide a price support level for the respective individual stocks. With longer-term investors in the market, the speculative element should decline and the share prices are more likely to reflect the true performance and long-term fundamentals of the corporations. In addition, the need to pay cash dividends regularly will help to limit the potential abuse of internal cash by corporate management, as well as fraudulent accounting practices. Corporate governance is likely to be improved. In this way, the stock market's function of allocating financial capital to its highest and best use is more likely to be realized.

Finally, the implementation of tax deductibility of cash dividends—in fact, even just the announcement itself—will be perceived as very positive news by the stock market. It should provide a great deal of market support. In addition, even if no new cash dividends or increases in cash dividends are immediately declared, after-tax corporate profits and cash flows will immediately increase, both of which should help to buoy the stock market. Thus, the introduction of tax deductibility of cash dividends should definitely bring some life into the stock market and attract new, hopefully longer-term, investors.

The principal disadvantage of the dividend deduction method is the potential for large losses of tax revenue if corporations decide to distribute all their incomes each year (or perhaps even more than their current income). The incentive to do so is especially strong if the corporate income tax rate is much higher than the personal income tax rate on cash dividends and the corporation itself is closely held by a few shareholders. This possibility can be reduced by tightening up the accounting requirements such that (1) cash dividend payments cannot exceed adjusted corporate income; and (2) adjusted corporate income is corporate income with only revenue received currently in cash recognized. Thus, corporations cannot, for the purpose of payment of cash dividends, simply inflate current profits by recognizing future sales on which cash payments have not been received. Of course, the introduction of a comprehensive personal income tax, under which the highest marginal rate is greater than or equal to the highest marginal corporate income tax rate, will remove the incentive to overdistribute completely.

(2) Dividend Relief Method

Under this method, taxes on cash dividends at the shareholder level are eliminated either in whole or in part. Dividend relief can be implemented in two ways—by using either the imputation system or the dividend exclusion system. Under the imputation system, shareholders will receive, simultaneously with their cash dividends, some amount of tax credits that can be used to offset their personal income tax liabilities on the cash dividends received, as well as other personal incomes. The amount of the tax credit is typically equal to the amount of gross-up dividend (cash dividends plus taxes paid by corporations on the dividends) times the tax credit ratio. By using different tax credit ratios (and possibly different gross-up formulae), the government can reduce the double taxation of cash dividends to varying degrees, including its total elimination. Currently, several countries (such as Australia, Canada, and New Zealand) have adopted this system. Complexity is the major disadvantage of the imputation system. There are so many calculations that must be made by the shareholders in determining their precise tax liabilities. Moreover, the imputation system works well only in the context of a comprehensive personal income tax.

Under the dividend exclusion system, cash dividends received by the shareholders are exempted in whole or in part from personal income taxation, at predetermined rates, and the corporate income taxes will be collected in full at the corporate level. The dividend exclusion system has also been adopted by some countries (including the United States, where the tax cut proposal of President George W. Bush, consisting of a variant of the dividend exclusion system, was recently passed by the U.S. Congress). The major disadvantage of this system is its lack of actual or perceived fairness, because the exclusion is uniform for all shareholders regardless of their income levels. There is no progressivity in the taxation of cash dividends.

The principal reason for certain countries to prefer the dividend relief method at the shareholder level over the dividend deduction method at the corporate level is the potential for large losses of current tax revenue under the dividend deduction method. This is especially true if many of the current recipients of cash dividends are nontaxable entities and accounts such as pension funds or retirement accounts. Deductibility of cash dividends at the corporate level will mean that little or no tax will be collected from these corporate earnings. In the Chinese context, however, the loss of revenue should not be an important consideration because there are currently very few recipients of cash dividends that are exempt from income taxation (except possibly for state or quasi-state organizations such as the Social Security Fund). Moreover, for the publicly listed Chinese corporations, the effective income tax rate at the corporate level was actually increased from 15 percent to 33 percent at the end of 2002. Making cash dividends tax deductible to the corporations will provide some tax relief for corporations during the transition. (This point will be further discussed below).

4. The Potential Effects of Tax Deductibility of Cash Dividends at the Corporate Level

The point of departure of our analysis is the following question: Is it possible to stabilize a “bubbly” stock market without causing or hastening its crash? Our analysis indicates that making cash dividends deductible in the same way as interest payments will provide

some additional support for the price level of the stock market. Moreover, corporations will respond to the change in tax policy by raising the cash dividend yield and/or substituting new equity for debt. Under plausible conditions, the substitution of new equity for debt can lower the P/E without a decline in the price of the share. Such changes will also attract new long-term investors to the market. And together all of these will help to enhance the stable development of the Chinese stock market.

A. The Substitution of Pre-Existing Debt with New Equity

First, we return to the question raised initially: “Is it possible to bring down the P/Es without bringing down the prices of the shares on the Chinese stock market?” It is actually possible to do so in the short run as well as in the long run. The critical idea is the substitution of new equity for debt by the publicly listed companies. The simplest way to think about this problem is as follows:

- (1) Given the current market price (say 10 Yuan) of a share of the common stock of an enterprise, the enterprise should be able to issue, on the margin, additional new shares, say ΔN ,¹⁸ at the same market price of 10 Yuan per share. The new shares issued should not, in general, reduce the market price of the share¹⁹ because they are accompanied by the injection of an amount of cash equal to the number of new shares issued, times the market price of the share (less some offering expenses).
- (2) With the proceeds of such an offering, the enterprise can reduce its debt by the total amount (which is equal to $10\Delta N$) of the proceeds raised by the new shares issued, but the replacement of the debt by new equity reduces the interest costs and hence increases the net profit without any other changes in the actions of the enterprise.
- (3) Under plausible conditions, not only does the net profit increase, but also the net profit per share (old and new combined).²⁰ Thus the P/E ratio can fall without a decline in the price of the share.
- (4) Because the interest payments are substituted by cash dividend payments, which are lower, the cash flow of the corporation will be improved both before and after taxes as long as the rate of interest on loans at the margin is higher than the cash dividend yield,²¹ which is actually the case in China. Thus, there is enough room for the corporations to make a choice between equity financing and debt financing.

B. Reduction of the Debt-to-Equity Ratio

Suppose a corporation’s debt-to-equity ratio is 3 to 1, a loss equal to 25 percent of the total assets of the corporation. Such a ratio will effectively wipe out all of the equity and put the corporation into bankruptcy, which means that it will have created NPLs equal to 75 percent of its total assets for its creditor banks. If the debt-to-equity ratio is 1 to 1, then a loss equal to 25 percent of total assets will still leave the corporation solvent and no NPLs will be created. The losses are absorbed by the equity of the shareholders (reflected in the decline in the stock price) rather than by the creditors, the commercial banks. A lower debt-to-equity ratio at the corporate level therefore significantly reduces the probability of corporate loan defaults and bankruptcies, which in turn reduces the incidence of NPLs at the commercial banks. Moreover, in the aggregate, a lower debt-to-equity ratio also reduces the potential of spillover effects in which one enterprise’s failure affects its suppliers and its creditors. Thus, overall, the stability of the commercial banking sector, the financial system, and the entire economy is enhanced.

C. Attracting Long-Term Investors with Steady and Significant Cash Dividends

By paying steady, significant, dependable, and regular cash dividends to shareholders, large “Blue Chip” (good) Chinese enterprises²² can attract new investors, both individual and institutional, who are not currently participating in the stock market. Private individuals and households have accumulated a huge pool of savings deposits in the commercial banks and have the capacity to become long-term holders of common stocks if attractive cash dividend yields are offered. Similarly, institutions such as life insurance companies and pension funds are natural investors in the stock market if there are stocks with relatively stable prices and good cash dividend yields (a steady and regular cash dividend yield can help provide a price support level for a stock). Essentially, an enterprise can offer a cash dividend yield that is higher than the savings and time deposits (including certificates of deposits) rate at the commercial banks, but lower than the interest rate that it faces on loans from commercial banks on the margin. The current interest rate of one-year time deposits at the commercial banks is 1.98 percent per annum and the minimum interest rate on one-year fixed-term bank loans is 5 percent, providing a great deal of room for profitable arbitrage. For example, if the cash dividend yield is set at 3.5 percent, potential investors switching their bank deposits to stocks can increase their cash yield by 1.52 percent and the enterprises substituting new equity for debt will decrease their cost of capital by 1.5 percent.²³ Everyone is better off under this scenario—the investors receive a higher rate of return, the enterprises lower their cost of capital (and in particular, they do not ever need to repay equity, as opposed to debt), and the banks will find the quality of their loans improved through the reductions in both their exposure to individual borrowers and the debt-to-equity ratios of their borrowers. Only the government may lose some revenue (see below), but it is compensated by the increased stability of the financial system and the entire economy and by the expected reduction in NPLs at the state-owned commercial banks.

D. Impact on Fiscal Revenue

What kind of impact will the tax deductibility of cash dividends from corporate income have on China’s fiscal revenue? We find that this policy reform will actually have a positive effect on fiscal revenue in the long run if in fact corporations are induced to substitute new equity for debt as a result.

In the short run, any tax cut measure must reduce fiscal revenue from taxes. In 2001, the total cash dividends paid by all of the listed companies in China combined amounted to 46.4 billion Yuan. Based on a 33 percent corporate income tax rate, the deductibility of cash dividends would reduce corporate income tax revenue by approximately 15.5 billion Yuan. If the corporations, in response, increase their cash dividend payments by 50 percent, then the corporate income tax revenue would be reduced by 22.5 billion Yuan, while the personal income tax (at a rate of 20 percent) from cash dividends would be increased by 4.62 billion Yuan, resulting in a net loss of tax revenue of approximately 18 billion Yuan. Although this is a large share of the corporate income tax revenue from publicly listed companies, it is less than one-tenth of the total corporate income tax revenue from domestic enterprises, most of which are unlisted. In the past four years, the annual increase of fiscal revenue has been between 200 and 300 billion Yuan. Thus, China can easily tolerate a loss of revenue in the 15 to 18 billion Yuan range.

With the substitution of new equity for debt, the corporate taxable income will be lowered by the deduction of the cash dividend payments for the new equity, but raised by

the reduction of interest payments on the pre-existing debt. The net change in corporate taxable income due to the substitution of new equity for debt is actually positive as long as the interest rate on bank loans on the margin is higher than the cash dividend yield, which implies a higher level of fiscal revenue from the corporate income tax. In addition, fiscal revenue from the personal income tax on cash dividends will also increase with the issuance of new equity. Thus, total fiscal revenue will rise with the substitution of new equity for debt. Moreover, under certain conditions, the increase in fiscal revenue may be sufficient to offset even the initial decline in the corporate income tax due to the tax deductibility of the pre-existing cash dividend payments.²⁴

In fact, the publicly listed Chinese companies enjoyed an effective 15 percent preferential corporate income tax rate up to the end of 2001. The corporate income taxes of the listed companies were collected at the statutory rate of 33 percent, out of which 18 percent was refunded to the companies. The Ministry of Finance terminated this preferential tax rate at the end of 2001 (except for high-technology enterprises and enterprises in the Western Region satisfying certain criteria). The termination of this preferential policy in favor of the publicly listed companies increased their tax burden sharply. Now is probably a good time for the Ministry of Finance to introduce the tax deductibility of cash dividends, which can provide some relief and cushion the shock for enterprises that saw their tax rate go from 15 percent to 33 percent.

5. Recommendation for the Tax Policy Reform

Based on the analysis above, we recommend the adoption of tax deductibility of cash dividend payments against corporate income for publicly listed companies. At the same time, the government should encourage the substitution of new equity for debt and/or raising the level of cash dividend yields.

Under this policy reform, cash dividend payments of publicly listed companies will become a deductible item in the corporate before-tax profit.²⁵ Such a measure will relieve the income tax burden of publicly listed corporations directly and increase their cash flows. In addition, it will encourage and incentivize enterprises to rely more on equity financing and less on debt. To the extent that enterprises are induced to issue new equity to replace debt, their P/Es can be brought down without bringing down the prices of the shares on the Chinese stock market, thus enhancing the overall stability of the Chinese stock market. To the extent that the average debt-to-equity ratios of Chinese enterprises are reduced as a result of the switch from debt financing to equity financing, the incidence of new NPLs will decline, and thus help to ensure the stable development of the Chinese financial system as a whole.

The existence of regular and steady cash dividends helps to provide a support level for the stock prices. In addition, regular and sufficiently significant cash dividends, possibly combined with reforms in the personal income tax, will attract new long-term investors into the stock market. It is the inflow of new purchasing power into the stock market, rather than the switch by the same investors from one set of stocks to another, that expands and strengthens the stock market and enhances its role in the allocation of capital. An ever-larger pool of funds from longer-term-oriented investors is therefore crucial to the long-term success of the Chinese stock market. The newly joined long-term investors can provide the further support and the upward momentum for the overall market.

The presence of long-term investors also helps to accelerate the improvement of corporate governance. Only long-term investors take an interest in the companies in which they own shares. Short-term speculators do not have the incentive to do so. Longer-term investors are likely to demand an overall improvement in information disclosure and transparency in management. In addition, the reduction in the leverage of the enterprise, that is, the reduction in the debt-to-equity ratio, means that more equity is at risk. Other things being equal, this should reduce moral hazard, and hence recklessness, at the enterprise level, because the enterprise will now be risking more money of its shareholders (equity), as opposed to other people's (the banks') money.

The "Provisional Measures on Administration of Domestic Securities Investments of Qualified Foreign Institutional Investors (QFII)" was promulgated in November 2002 in China. Assuming that all the efforts mentioned above bear fruit—enterprises begin to offer steady and significant cash dividend payments; more and more long-term investors are attracted to the stock market; and corporate governance and market regulation continue to improve—the Chinese stock market will look very attractive to foreign portfolio investors even if the Chinese controls on capital accounts remain intact.

One additional potential beneficiary of the proposed tax reform is the Social Security Fund of China.²⁶ With a steady flow of significant cash dividends every year, the Social Security Fund does not need to sell any of the institutional shares it holds. It can simply use the cash dividends received to pay for the ongoing pension expenses of the retirees it has to support. This helps to reduce or even eliminate the negative effects of the large overhang of the state-owned institutional shares on the Chinese stock market.

Moreover, the improved performance of the publicly listed companies and the resulting boom of the stock market will increase investment and accelerate the development of the national economy. The gains in fiscal revenue resulting from the gains in efficiency and from the "bigger pie" should definitely exceed the loss in fiscal revenue from making cash dividends tax deductible. Furthermore, from a longer-term perspective, a decline in the debt-to-equity ratio will reduce the probability of NPLs, and thus help to strengthen the commercial banking sector. In turn, this will reduce the implicit fiscal liability of the Ministry of Finance in the future, because most of the NPLs of the state-owned commercial banks will ultimately become the responsibility of the Chinese Government.

6. Possible Additional Complementary Measures

The tax-deductibility of cash dividend payments by publicly listed companies can also be combined with or accompanied by several complementary reform measures, either jointly or severally, if they are otherwise deemed desirable.

A. An Annual Exemption Amount for Cash Dividends from the Personal Income Tax

Although the proposed elimination of double taxation occurs at the corporate level, individual shareholders also benefit from the rise in the value of their shares and from any increases in the cash dividends. And investors in general will be able to reap great benefits from the improved performance of listed companies and the stable development and expansion of the Chinese stock market.

The government can further encourage common stock investment and ownership by allowing an annual personal income tax exemption for cash dividends received from publicly listed companies. For example, the exemption can be set at 5,000 Yuan per person per year, that is, the first 5,000 Yuan of cash dividends received each year (from all domestic publicly listed companies combined) will be exempted from personal income taxation (currently a 20 percent rate). From the point of view of implementation, the personal income tax on cash dividends should be collected through withholding by the companies paying the cash dividends, and then remitted directly to the national revenue service of the Ministry of Finance. The shareholders can apply to the national revenue service for a refund of up to 1,000 Yuan (20 percent of 5,000 Yuan) of the cash dividend tax withheld at the end of each year. This exemption is intended to attract smaller, cash-dividend income-oriented, longer-term investors into the market. However, it works best within the framework of a comprehensive personal income tax.

B. Introduction of a Security Exchange Capital Gains Tax

Without a capital gains tax on the trading of securities but a personal income tax on wages and salaries, dividends, interest, and other earnings, there will be an irresistible temptation to devise instruments and strategies aimed at converting taxable current income into nontaxable capital gains.²⁷ There are many instruments and trading strategies already available in other countries. The prevention of the illegal conversion of current income into capital gains for the sole purpose of tax evasion is an area of significant enforcement efforts in developed countries. China should learn from these lessons. In the near future, the timing is not right for the Chinese Government to introduce the capital gains tax on securities trading, but in time the capital gains from securities trading should be subject to the personal income tax. However, in order to encourage long-term investment in the stock market, different tax rates can be applied according to the length of the holding period. For example, capital gains on securities held for more than a year can be taxed at only half of the effective marginal personal income tax rate and gains on securities held for more than two years can be exempted altogether.²⁸

C. Toward a Comprehensive Personal Income Tax

In order to achieve the objective of equity and fairness, income from cash dividends above the exemption amount discussed under A above should be subject to progressive income tax rates. Under the existing Chinese tax codes, a widow with 1,000 Yuan annual cash dividends income has to pay the same flat tax rate (20 percent) as a tycoon with cash dividends income exceeding 1 million Yuan a year. However, progressivity can be feasibly achieved only in the context of a comprehensive personal income tax.

D. Risk-Based Bank Deposit Insurance Premia

The Chinese Government can also provide, if it is considered desirable, additional incentives for enterprises to shift their capital structure toward more equity and less debt by introducing a system of risk-based commercial bank deposit insurance premia. For example, the central bank and the bank deposit insurance agency can set the deposit insurance premium payable by each commercial bank as a percent of its total deposits, in accordance with the size of its total assets and the average debt-to-equity ratios of its borrowers, weighted by the loan

exposure to each individual borrower.²⁹ Thus, a bank with larger assets and a borrower base with lower average debt-to-equity ratios will have a lower deposit insurance premium rate. Such a rule will force the commercial banks to charge high-leverage borrowers a higher interest rate and/or to reduce their lending to such borrowers, thereby providing an additional incentive for enterprises to maintain a lower debt-to-equity ratio. Over time, the average debt-to-equity ratios of enterprises as well as the probability of loan defaults and nonperformance will fall, greatly enhancing the profitability of the commercial banking sector and stability of the entire financial system.

Notes

¹ Based on the annual financial reports of the People's Bank of China and the four major state-owned commercial banks for 2001.

² See *Statistical Communiqué 2002*, National Bureau of Statistics of the People's Republic of China, February 28, 2003. <http://www.stats.gov.cn/english/newrelease/statisticalreports/1200303120088.htm>.

³ See *World Stock Exchange Fact Book 2002*, Morris Plains, NJ: Electronic Commerce, Inc., 2002.

⁴ The China Securities Regulatory Commission is equivalent to the Securities and Exchange Commission of the United States.

⁵ In China, the total market capitalization includes two parts: negotiable (shares that can be bought and sold on the stock exchanges by their owners) and nonnegotiable (shares that cannot be bought and sold on the stock exchange by their owners, mostly government ministries and institutions). At year-end 2002, the negotiable market capitalization is approximately 35 percent of the total capitalization.

⁶ The turnovers of the NYSE in 1999 and 2000 were much higher than its historic average.

⁷ The number of listed stocks is higher than the number of listed enterprises because some enterprises issue multiple classes of stocks. An example of this practice would be both A-shares, which can only be owned by Chinese nationals, and B-shares, which are transacted in foreign exchange and could only be owned by foreign nationals prior to 2002. Since November 2002, with the issuance of the "Provisional Measures on Administration of Domestic Securities Investments of Qualified Foreign Institutional Investors (QFII)," foreign investors have been allowed to own A-shares as well.

⁸ Regulations, or at least the interpretation of some existing regulations, may have to be changed to enable insurance companies and pension funds to invest part of their assets in the Chinese stock market if they so desire.

⁹ See People's Bank of China, Dai Xianglong, "China's Banking Sector after Entering WTO," February 20, 2002.

¹⁰ See “A quarter of NPLs in Greatwall sold out”, *China Industry and Commerce News*, October 16, 2002.

¹¹ See People’s Bank of China, Governor Dai Xianglong’s speech at the international forum “China: the year of capital”, December 4, 2002.

¹² Eventually, one possible direction for the reform of the state-owned enterprises is a merger of the unlisted parent company into the listed subsidiary (also called a reverse takeover), in which case the debt-to-equity ratio of the merged company is likely to be much higher than that of the listed subsidiary alone.

¹³ However, this is not by any means the only, or even the most important, reason. A complete and thorough solution of the NPLs problem of the Chinese commercial banking sector requires the reform and restructuring of the state-owned enterprises to make them independently viable. This in turn requires their major downsizing, especially in terms of employment, which in turn requires the central government to establish an adequate social safety net, to assume the unfunded pension liabilities, and to make provisions for the operation of social services such as education and health care by the local governments. These issues are not the focus of this study and will not be discussed further here.

¹⁴ Loans for the purchase of common stock are supposed to be tightly regulated and commercial banks are in principle not permitted to make such loans directly.

¹⁵ One possible compromise is to stop all new “indirect” margin loans but essentially to allow the existing “indirect” margin loans to continue. This approach buys some time for a good solution to be developed and implemented but at the same time prevents the problem from growing to intractable proportions.

¹⁶ Other things being equal, speculative, gains-oriented investors prefer a highly leveraged firm to a lowly leveraged firm.

¹⁷ Of course, a corporate shareholder receiving the cash dividends as corporate income can deduct any cash dividends that it pays to its own shareholders.

¹⁸ ΔN should be much smaller than the total number, N , of shares outstanding.

¹⁹ It is even likely to increase slightly the market price of the share. Here, we assume no change of the market price.

²⁰ Fortunately this is the current situation in China. So this strategy can be used in China with the desired result. For more detailed discussion, please see Appendix 1.

²¹ It is possible that the cash dividends yield may have to be raised before the issuance of new equity.

²² Potential Chinese “Blue Chips” include, for example, China Telecom and Petro-China.

²³ By comparison, the rates of interest on recently issued fixed-term Chinese Government bonds are 2.32 percent and 2.63 percent p.a. respectively for three- and five-year fixed terms. However, the interest income from Chinese Government bonds is exempt from income taxation.

²⁴ For a detailed discussion, please see Appendix 2. A more problematic case arises if the cash dividend yield is raised from its pre-existing level. The increase in cash dividends will apply to both new and old equity. In the case of the old equity, the increase in the cash dividend payments is not offset by a reduction in the interest payments, because unlike the issuance of new equity, there is no corresponding reduction of debt. Thus, a greater reduction in fiscal revenue (and in corporate cash flow) is likely. One can avoid this situation by issuing the new equity as a new distinct class of common stock, with its own, higher, cash dividend yield. But that is probably too complicated. It is best to view the potential revenue loss due to increased cash dividend yield on the pre-existing equity as a one-time cost of transition.

²⁵ There should, of course, be regulations that forbid the distribution of cash dividends that exceed the corporate income of the current period, unless the levels of the cash dividends have been ongoing. Moreover, the deduction allowed should be limited to the before-tax corporate income of the current period.

²⁶ In order to collect and accumulate social security funds, as well as to improve further China's social safety net, the State Council established the Social Security Fund in 2000. At the same time, the National Council for Social Security Fund was set up to manage the Fund. By the end of 2002, the total assets of China's Social Security Fund amounted to 124.19 billion Yuan (US\$15 billion), realizing 3.08 billion Yuan (US\$374.8 million) of accumulative profits. See <http://www.cet.com.cn/20030226/FOCUS/200302261.htm>.

²⁷ A simple example is the following: a publicly listed company controlled by a few large shareholders can decide to buy back some of its shares on the market, raising the price of the shares, in lieu of paying cash dividends. By selling some of the shares for cash, the shareholder in effect receives a payout from the company but is not liable for the cash dividends tax. There are cleverer and more complex but less transparent ways of converting current income into capital gains.

²⁸ The principle of preferential treatment of capital gains for long-term holders is probably widely accepted. However, in terms of implementation, one has to be careful to identify transactions that only appear "long-term" for income tax purposes but are otherwise effectively short-term. For example, a shareholder may have borrowed a similar security and sold it, but using his long position as collateral.

²⁹ In practical implementation, one may have to further distinguish different classes of borrowers, for example, between enterprises and households. For a typical household with a mortgage on its home, and few other financial assets, the debt-to-equity ratio may be as high as three to one. However, mortgage loans on owner-occupied residential housing typically have the lowest default rates.

³⁰ As noted above, P , the price per share, is unlikely to fall and may even rise after the issuance of new shares. i , the rate of interest on loans on the margin, is unlikely to rise as the total outstanding debt is reduced after the issuance of the new shares and may even fall.

³¹ Of course, if the enterprise has little or no debt to begin with, this strategy will not have the desired effect.

Appendix 1

Necessary and Sufficient Condition for a Decline in the P/E Ratio without a Decline in P

What is the necessary and sufficient condition under which the net profit per share, fully diluted, will rise after the issuance of new shares and the replacement of pre-existing debt with the new equity? The condition is that the price-earning ratio (P/E ratio) before the issuance of new shares must be greater than the reciprocal of the rate of interest on loans available to the enterprise on the margin. That is:

$$P/E > 1/i,$$

where i is the rate of interest on loans available to the enterprise on the margin.

Intuitively, one can think of the reciprocal of the P/E ratio, E/P , as the rate of return required by the existing shareholders on their investment. So long as E/P is less than the rate of interest on loans available to the enterprise, it pays for the enterprise to raise new equity to replace the existing debt. In this process, earnings per share will rise because the additional earnings required for the earnings per share to remain constant will be more than offset by the savings on interest payments.

We illustrate this idea by analyzing a simple case and a simple example. Let

R = Revenue of the enterprise;

C = Non-interest costs of the enterprise;

D = Pre-existing debt of the enterprise;

Π = Profit;

i = Rate of interest on loans on the margin;

P = Market price of the common stock per share;

N = Total number of shares outstanding;

Π^* = Profit after the issuance of new shares and replacement of pre-existing debt with new equity;

N^* = Total number of shares outstanding after the issuance of new shares, where the symbol * denotes "after the issuance of new shares."

By definition,

$$\Pi = R - C - iD; \text{ and}$$

$$\Pi^* = R - C - i(D - P(N^* - N)).$$

By assumption, R , C , i , and P remain unchanged.³⁰ Thus, earnings per share, before and after the issuance of new shares, are given by, respectively:

$$E = \Pi/N = (R - C - iD)/N; \text{ and}$$

$$E^* = \Pi^*/N^* = (R - C - i(D - P(N^* - N)))/N^*.$$

Thus,

$$P/E = P/[(R - C - iD)/N]; \text{ and}$$

$$(P/E)^* = P/[(R - C - i(D - P(N^* - N)))/N^*].$$

In order for the P/E ratio to decline after the issuance of new shares (or equivalently, for the earnings per share to rise, since P is assumed to be unchanged), one must have:

$$(R - C - i(D - P(N^* - N)))/N^* > (R - C - iD)/N, \text{ which can be rewritten as:}$$

$$R - C - i(D - PN((N^*/N) - 1)) > (R - C - iD)(N^*/N).$$

Substituting $s \equiv (N^*/N) - 1$, the ratio of new shares to old shares, which is taken to be positive, into the equation above, one obtains:

$$R - C - iD + iPNs > (R - C - iD)(1 + s), \text{ or}$$

$$iPNs > (R - C - iD)s, \text{ or}$$

$$iPN > (R - C - iD).$$

We note that PN is the market capitalization of the enterprise before the issuance of new shares. The condition for earnings per share to rise after the issuance of new shares and the replacement of pre-existing debt by the new equity is precisely that the interest rate times the market capitalization is greater than the profit before the issuance of new shares. This condition can be rewritten as:

$$P/[(R - C - iD)/N] > 1/i,$$

which says that the P/E ratio before the issuance of new shares should be greater than the reciprocal of the interest rate on loans on the margin.

Given that the P/E ratios of the common stocks of publicly listed Chinese enterprises on the Chinese stock exchanges are on average between 35 and 40, and that the rate of interest on loans is at least 5% per annum, so that $1/i$ is at most 20, this condition is met for most Chinese common stocks. Thus, whenever the P/E ratio of a publicly listed enterprise exceeds 20, it is possible to consider replacing pre-existing debt with new equity issued by the enterprise and in so doing, to lower the P/E ratio without lowering the P.

We now consider a concrete example. Suppose a listed enterprise has annual revenue of 1 billion Yuan and total annual noninterest operating costs of 800 million Yuan. In addition, it has a debt of 2 billion Yuan at a rate of interest of 5% per annum, so that the annual interest payments amount to 100 million Yuan. The profit after the payment of interest is therefore 100 million Yuan. Suppose that originally there are 100 million shares outstanding, so that the profit per share is 1 Yuan. Moreover, suppose that each share sells for 30 Yuan on the stock market so that the P/E ratio is 30. The market capitalization is therefore 3 billion Yuan. The interest rate times the market capitalization is 150 million Yuan, which is higher than the profit of 100 million Yuan. Now suppose the enterprise issues 20 million new shares at 30 Yuan per share and pays down the debt with the proceeds of 600 million Yuan. The debt is now 1.4 billion Yuan and the annual interest expense is 70 million Yuan. Total profit after the issuance of new shares and the replacement of pre-existing debt by new

equity rises to 130 million Yuan. The earning per share rises to 130/120 Yuan or 1.0833 Yuan. The P/E ratio falls from 30 to 27.7. In addition, the balance sheet of the enterprise is considerably strengthened by the significant decline in the debt to equity ratio.³¹

Appendix 2

The Effects of Deductibility of Cash Dividend Payments on Profits, Taxes, and Cash Flows

What happens to before- and after-tax profits, taxes, at both the corporate and individual levels, and cash flows, if corporate cash dividend payments are deductible from corporate income for the purpose of corporate taxation? We shall answer this question by continuing with our analysis begun in Appendix 1 above. We examine two specific cases: (1) No increase in the cash dividend rate and no new equity issued; and (2) No change in the cash dividend rate but new equity issued to replace pre-existing debt.

Case (1)

This case is the status quo case. It assumes that making the cash dividends deductible from corporate income does not lead to any increase in the cash dividend rate or the issuance of new equity. Thus, nothing changes except for the tax treatment of the existing cash dividends paid.

Let

d = Rate of cash dividend per share as a ratio to the market price per share, or equivalently, the dividend yield (note that this may be different from the coupon rate, which depends on the par value per share rather than the market price per share);
 TC = Corporate income tax payable;
 TI = Individual cash dividend taxes payable;
 T = Total taxes collected by the government;
 t = Rate of corporate income tax;
 t^* = Rate of individual income tax on cash dividends of publicly listed companies;
 CF = Cash flow.

Then taxable corporate incomes, before and after the introduction of deductibility of cash dividends from corporate income, are given by, respectively:

$$\begin{aligned}\Pi &= R - C - iD; \text{ and} \\ \Pi^* &= R - C - iD - dPN.\end{aligned}$$

Corporate income taxes paid before and after the introduction of deductibility of cash dividends from corporate income, are given by, respectively:

$$\begin{aligned}TC &= t(R - C - iD); \text{ and} \\ TC^* &= t(R - C - iD - dPN).\end{aligned}$$

And the after-tax corporate incomes are given by, respectively:

$$\begin{aligned}\Pi^{\#} &= (1-t) (R - C - iD); \text{ and} \\ \Pi^{\#*} &= (1-t) (R - C - iD) + tdPN,\end{aligned}$$

where the symbol # denotes after-tax. The after-tax cash flows (depreciation allowances are ignored here because they are assumed to be the same with and without tax deductibility of cash dividends) are given by, respectively:

$$\begin{aligned}CF^{\#} &= (1-t) (R - C - iD) - dPN. \\ CF^{\#*} &= (1-t) (R - C - iD) + tdPN - dPN \\ &= (1-t) (R - C - iD - dPN).\end{aligned}$$

Of course, any increase in the after-tax cash flow can be used to reduce the pre-existing debt. The change in the total taxes collected by the government is reduced by:

$$\Delta T = - tdPN.$$

Thus, total after-tax profit and cash flow rise at the corporate level. Corporate income tax payable and the total taxes collected by the government decline by the same amount, $tdPN$.

Case (2)

In this case, it is assumed that making the cash dividends deductible from corporate income does not lead to an increase in the cash dividend rate but to the issuance of new equity and the substitution of debt with the new equity. This case is the most likely and most important case.

The corporate income is given by:

$$\begin{aligned}\Pi^* &= R - C - i(D - P(N^* - N)) \\ &= R - C - i(D - sPN).\end{aligned}$$

The taxable corporate income is given by:

$$\begin{aligned}\Pi^* &= R - C - i(D - sPN) - dPN^* \\ &= R - C - iD + isPN - d(s+1)PN \\ &= R - C - iD + (s(i-d) - d) PN.\end{aligned}$$

We consider only the case in which $(i-d)$ is positive, otherwise the cost of equity is higher than the cost of debt and it would not be profitable to substitute equity for debt. What the above equation says is that the new taxable income (after the deduction of the cash dividend payments and the substitution of debt with new equity) is greater or less than the old taxable income depending on whether

$$\begin{aligned}s(i-d) - d &> 0, \text{ or} \\ s &> d/(i-d),\end{aligned}$$

that is, on whether the proportion of the number of new shares to old shares is greater than the dividend yield divided by the spread between the interest on debt and the dividend yield.

As a concrete example, suppose that the dividend yield is 2.5% and the interest rate on loans is 5% on the margin. Then taxable income will increase if s is greater than one. In general, s is likely to be less than one, so that taxable income is unlikely to increase after the issuance of new shares and substitution of debt with the new equity. Thus, a loss in tax revenue from the enterprise can be expected.

Corporate income taxes paid become:

$$TC^* = t(R - C - iD + (s(i-d) - d)PN).$$

And the after-tax corporate income is given by:

$$\begin{aligned} \Pi\#^* &= R - C - i(D - sPN) - t(R - C - iD + (s(i-d) - d)PN) \\ &= (1-t)(R - C - iD + isPN) + td(s+1)PN, \end{aligned}$$

an increase of $((1-t)is + td(s+1))PN$. After-tax cash flow is given by:

$$\begin{aligned} CF\#^* &= (1-t)(R - C - iD + isPN) + td(s+1)PN - d(s+1)PN \\ &= (1-t)(R - C - iD) + ((1-t)is - (1-t)d(s+1))PN \\ &= (1-t)(R - C - iD + (is - d(s+1))PN) \\ &= (1-t)(R - C - iD + (s(i-d) - d)PN). \end{aligned}$$

Thus, total after-tax profit and cash flow rise at the corporate level. Corporate income tax payable and the total corporate income taxes collected by the government decline by the same amount. However, this loss in corporate tax revenue may be offset, in whole or in part, by the additional individual income tax paid on the cash dividends received by the shareholders. The potential loss in corporate tax revenue is equal to $tPN(s(i-d) - d)$. The additional dividends paid are equal to $sdPN$.

The change in the total taxes collected by the government is given by the sum of the decrease in the corporate income tax and the increase in the individual cash dividend taxes collected:

$$\begin{aligned} \Delta T^* &= t(s(i-d) - d)PN + t^*sdPN \\ &= (t(si-d) + (t^*-t)sd)PN. \end{aligned}$$

There will be a loss (or gain) in total tax revenue depending on whether

$$\begin{aligned} t(s(i-d) - d) + t^*sd &< 0, \text{ or upon rearrangement,} \\ t(si-d) + (t^*-t)sd &< 0. \end{aligned}$$

In terms of the Chinese example, suppose $t = 33\%$, $t^* = 20\%$, $i = 5.3\%$:

(1) In the case $d = 2\%$,

If $s > 44\%$ there will be a gain in the total tax revenue.

(2) In the case $d = 3\%$,

If $s > 73\%$ there will be a gain in the total tax revenue.

In terms of another example, suppose $t = 15\%$, $t^* = 20\%$, $i = 5.3\%$:

- (1) In the case $d = 2\%$,
If $s > 34\%$ there will be a gain in the total tax revenue.
- (2) In the case $d = 3\%$,
If $s > 48\%$ there will be a gain in the total tax revenue.

We also note that the above analysis of the potential loss of tax revenue applies only to the transition, with cash dividends changing from nondeductible to deductible at the corporate level. During this transition, there will be a one-time (permanent) loss in corporate tax revenue even if no new shares are issued, because previously nondeductible existing dividend payments will all become deductible. Once cash dividends become routinely tax deductible at the corporate level, the taxable incomes before and after the issuance of new shares are given by, respectively:

$$\begin{aligned} \Pi &= R - C - iD - dPN; \text{ and} \\ \Pi^* &= R - C - i(D - P(N^* - N)) - dPN^* \\ &= R - C - iD - dPN + iP(N^* - N) - dP(N^* - N) \\ &= R - C - iD - dPN + (i - d)P(N^* - N), \end{aligned}$$

so that taxable income at the corporate level will rise after the issuance of new shares if $(i - d) > 0$, which as argued above is expected to be the case. This implies that the total income taxes paid by the corporation alone will actually rise as a result of replacing debt with new equity, without taking into account the additional individual income taxes payable because of the additional cash dividend payments.

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