Share Price Reaction on Corporate Tax Reforms in China

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ABSTRACT

This paper elaborates on the changes in corporate taxation in China to accommodate the government's fiscal expenditure, specifically, the study highlights the effect of major corporate tax reforms in China on firms' share price. The result shows that the price reactions are significantly positive/negative to corporate tax rate decreases/increases, relatively related to different taxpayer categories. This finding is not in line with the theory of Modigliani and Miller (1958; 1963), which may be due to a larger tax benefit being gained from the tax cut. The correlations between price changes and three firm factors (risk, firm size, debt-equity ratio) among the groups are statistically significant, further validating the result. These findings add to the growing literature seeking to understand China's capital market behaviour and also serves as a test of tax effect involving corporate tax.

Keywords: China tax reforms, corporate taxation, event study, market efficiency, tax policy.

JEL Classification: H25, G14

INTRODUCTION AND TAX POLICY CHANGES

In many countries, corporate tax income has contributed significantly towards the government's total tax revenue. Corporate income could also be a sign of a good economy. It is theorised that corporate tax would increase the value of firms due to the value of the interest tax shield (Modigliani and Miller, 1958; 1963). Nonetheless, past research has shown that an increase in the corporate tax rate may significantly stunt growth (Lee and Gordon, 2005). Therefore, a

lower corporate tax would support a better economy and also attract foreign investment into the country (Bellak and Leibrecht, 2009). Such a reduction in corporate tax has been promoted to attract more funds and stimulate economic growth (Djankov, 2017). There has been a worldwide trend to reduce corporate tax rates, especially in developed countries (Djankov, 2017). These countries include the UK (19% in 2017), Hungary (9% in 2017), Italy (24% in 2017) and Spain (25% in 2016). Developing countries, including Malaysia, Indonesia and Thailand, are also reducing corporate tax rates to attract foreign investment flows to address the shortage of capital required for faster growth. The imposition of corporate taxation may have uncertain effects on the well-being of a nation. Thus, studies on tax policy demand attention.

While some countries are focusing on offering more competitive corporate tax rates, it is also observed that those with simpler taxation systems have started to introduce corporate tax. In particular, tax reforms are observed in middle-eastern countries – Kuwait, Oman, Qatar, UAE and Saudi Arabia – some of which introduced corporate taxes to reduce their dependence on oil revenues. Oman and Qatar introduced corporate tax for their residents in 2010 (Selamat, Ariff, and Shamsher, 2015). Following suit, Kuwait has recently introduced a 15% corporate tax rate for firms with foreign ownership (Al-Arab, 2015; PWC, 2017).

China took a similar action two decades earlier in the 1990s, imposing a major reform in its taxation system to meet the needs of the economy. These tax changes are major corporate events in an increasingly important market, where traditionally there has been no or little interest in corporate tax. The reforms were launched in China as '*Li gai shui*' packages after careful studies to sell these 'tax for profits' reforms to the masses.

Study of tax effects is important for several reasons. Due to mixed results, Fama (2011) argues that it remains unknown whether taxes affect market values in corporate finance. It is difficult to measure the impact of tax policies since the changes are usually ambiguous and may be subject to different interpretations (Graham, 2003; Doidge & Dyck, 2015). Using the event study method, the tax reform in China deserved to be investigated, mainly due to the significant size of its economy as well as its more mature capital market compared with other developing countries that are also revamping their corporate tax policies. China currently has one of the fastest growing major economies in the world, with an average growth of 7% for the past 10 years.

Looking at the announcement dates, we report the analyses of price impacts in these three differing conditions: (1) the re-introduction of corporate tax, (2) an increasing corporate tax rate and (3) a decreasing corporate tax rate. In this paper, these three events[1] are studied as part of the corporate tax reform in modern China, where the country underwent a massive change in its fiscal policy after opening itself for trade (Brean, 2013). It is possible to explore whether these tax changes had any effects on the share prices of these firms, provided that these companies are listed and data are available (China stock trading started in November 1990). The next section elaborates on historical corporate tax reforms in China and the importance of the events.

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[1] (i) implementation of corporate income tax in the year 1991 on local enterprises with foreign investment and foreign enterprises; (ii) implementation of income tax for China's local enterprise in year 1994; and (iii) introduction of a uniform corporate income tax at 25 per cent effective from 2008, announced in 2007.

The Changes of Corporate Tax in China

In this sub-section, we describe the evolution of the three major changes in China's corporate tax. In a sense, these three tax law changes are major reforms of a major economy and are thus good examples for all developing markets. Understanding the background to the tax for profits reforms of China as a major fiscal policy exercise helps in understanding the influence on the value of firms when corporate taxes are suddenly introduced. This understanding makes it possible to predict and test the tax imposition effect on share values.

As one of the oldest world civilizations, China has a long history of taxation (Louwe and Shaughnessy, 1999; Nakazato, 2011). Significant revisions were made to the country's tax system during the economic reforms in the 1970s, just before the end of Mao Zhedong era, as the government sought to secure revenues prior to opening the door for foreign investments. The taxation system has undergone numerous reformations since then as the market economy has changed and the government has established roots—and more changes are likely in the future.

In the early 1980s, the government focused on how to obtain revenue from income, which marks the start of the '*Li gai shui*' or tax for profits reforms. An income tax on joint Chinese and foreign investment firms was imposed at a general tax rate of 30 per cent, on top of the local provincial tax rate of 10 per cent.[2] Another tax law for wholly foreign enterprises was amended in 1982, with the tax rate ranging from 20 to 40 per cent. [3] Nevertheless, the government offered some incentives to foreign firms, which included tax exemptions during the first year of operation and a reduction of 50 per cent in the second and third years if they intended to continue operation for 10 years. Another reduction of 15 to 30 per cent would be applied over the next ten years, with the consent of the Ministry of Finance. Starting in 1983, state-owned enterprises were also taxed at a very high fixed rate of 55 per cent. Relative to the rates then prevalent in the developed and developing countries prior to scaling down the tax rates starting in 1980, China's corporate tax rates up to 1983 were only on the high side with regard to local state-owned firms. Moreover, they remained on the high side relative to other countries until 1991. This could not be tested, however, as there was no organised stock exchange during these periods when corporate taxes were introduced.

Nevertheless, this early reformation was not very successful. In their paper, Tsang and Cheng (1994) describe the problems that begged for attention as far back as 1986. The administration of tax was inefficient, given the fact that the actual amount of tax had always been subject to negotiations with authorities, both for state and foreign firms. Bahl and Wallich (1992) further note that the public service levels were lacking in all parts of China. Moreover, the state-owned enterprises, which previously had been a monopoly, were facing hard competition from newcomers. As a consequence, the incomes of these state enterprises plummeted, undercutting the actual tax received after negotiations, even though it was the main source of government income (Tsang & Cheng, 1994). These situations were made more complex by local tax authorities, which continued to offer preferential tax rates to firms operating within their jurisdictions to encourage local economic activities. As a result, the total tax revenues plummeted and fiscal budgets turned negative.

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[2] Details can be found in Income Tax Law of the People's Republic of China concerning Joint Ventures using Chinese and Foreign Investment, adopted at the Third Session of the Fifth National People's Congress and promulgated on 10 September 1980.
[3] The Income Tax Law of the People's Republic of China concerning Foreign Enterprise, which was adopted by the Fourth Session of the Fifth National People's Congress and Promulgated on December 13, 1981.

The government started to pay attention and increased its efforts to find new ways to fix the tax system. A newer version of income tax for foreign firms was adopted in 1991: the Enterprise Income Tax Law for foreign investment enterprise and foreign enterprise. [4] Despite a general tax rate of 33 per cent (both central and local tax), reduced rates were still widely available. A reduced rate of 24 per cent was usually granted if the firm established operations in a Special Economic Zone. A further reduced rate of 15 per cent was granted if the business was in a specific industry such as manufacturing or high technology.

In 1994, the government launched another round of tax reforms (Lin, 2009). Tax policies were taken more seriously, specifying strict roles for local and central authorities. The government passed a general income tax on local Chinese firms, requiring them to pay a tax of 30 per cent, with an additional 3 per cent local tax. This new tax rate applied to all local Chinese firms, which included state-owned, collective, private, associated and joint-stock enterprises.[5] While this was new for most firms, the rate represented a significant reduction for the state-owned firms, which were previously taxed at 55 per cent. Although tax revenues did not immediately increase from these reforms, they created a strong foundation for the economy in subsequent years (Lin, 2009). Indeed, China's GDP has grown steadily in the range of 7 to 14 per cent per year (see Table A1 in Appendices) while tax revenues have increased progressively (World Bank, 2017).

As the economy was already in a steady state of prosperity, with the market economy model and the low currency rate sustaining high economic growth, the government took another bold step in 2007 to eliminate the differing tax rates between firms and ownership types.[6] All corporate income would be subject to a flat tax rate of 25 per cent, both for local and foreign firms. Nevertheless, there were specific industries, such as high technology, that would still have a lower corporate tax rate (20 per cent). Further, small businesses would be granted a lower tax rate of 15 per cent. This change became effective in 2008, and as a result the foreign firms that had previously been charged a lower actual tax rate – recall the negotiated tax scheme – were subjected to a gradual tax increase over the ensuing five years.

It is possible to explore in this paper what effects these tax changes, which started in the modern day tax reform (stock trading started in 1991), had on the share prices of firms, provided that these companies are listed and data are available. The beginning stock exchange in 1991 was very small and had few listed firms (less than 10 trading firms), which limits our analysis. However, by 2007, there was an abundance of listed firms, making it possible to observe the price effect in more detail while also taking advantage of the improvements in market efficiency, including more timely and accurate disclosures following the establishment of Shanghai Stock Exchange on November 1990.

The rest of the paper is organised as follows. The relevant but widely known literature on corporate taxation is briefly discussed in the next section. The hypotheses for testing and the methodology are explained in the section following. The reader will find a specification

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[4] The Income Tax Law of the People's Republic of China for Enterprises with Foreign Investment and Foreign Enterprises, adopted by the Fourth Session of the Fifth National People's Congress and Promulgated by Order No. 45 of the President of the People's Republic of China on April 9, 1991.
[5] Provisional Regulations of the People's Republic of China on Enterprises Income Tax, adopted at the 12th General Meeting of the State Council held on 26th November, 1993
[6] The Corporate Income Tax Law of the People's Republic of China, adopted at the 5th Session of the 10th National People's Congress of the People's Republic of China on March 16 2007.

of the paper's well-established methodology, which includes a panel regression to take advantage of the latest and more accurate methodology. Next, the results are presented along with interpretation to help understand the theory-suggested behaviour of the share prices to these three reform laws and to determine whether they had significant effects on share values. Information efficiency tests reveal significant share price changes at the time the tax change laws were announced. Finally, the association of share price changes with three firm-specific variables – risk, firm size and debt-equity ratio (capital structure) – is demonstrated. The paper concludes in the final section.

LITERATURE ON TAXATION EFFECTS

Considerable research has been conducted in the field of taxation. Two classical works are those of Modigliani and Miller (1958; 1963), who argued that, in a perfect market where tax does not exist, the level of debt would have no impact on the value of a firm. They later developed another theory on how corporate tax would increase the value of a firm, which is the value of the tax shield of interest, τcD, through the tax deduction of interest costs by the firm. Therefore, the value of a levered firm would not be the same as the value of an unlevered firm:

$$(1) \qquad V_L = V_U + \tau_c \, D$$

This theory implies that the firm reaches its maximum value when it obtains a 100 per cent debt. However, very high leverage would cause the firm distress and increase the likelihood of bankruptcy. Therefore, later research emerged about how corporations could maximize their value through different capital structure policies. One of the famous theories is the traditional trade off theory (the actual behaviour of the manager would be to raise cheaper financing by issuing debt rather than opting for more expensive funding), which suggests that there is an optimal point between the firm's distress level (bankruptcy costs) and the benefit of the tax shield (Kraus and Litzenberger, 1973). The argument of the debt-to-equity level has also been raised by Donaldson (1961), who initially suggested the scenario of pecking order.[7] He theorised that it is common for firms to choose their financing terms based on priority order. That is, the firms would first seek internal financing before resorting to external financing methods (debt first and then equity).

Nonetheless, neoclassical economists would argue that reducing the corporate tax rate would lower the cost of capital and induce firm growth. Firms would be left with a greater supply of cash and have more opportunities for investment or more resources to funnel into growth projects. In other words, corporate taxation would reduce the investment that would have otherwise occurred (Lintner, 1955). In addition, decreasing corporate tax liability would further exacerbate cross-country profit shifting and base erosion (Haufler & Schjelderup, 2000; Devereux, Lockwood, & Redoano, 2008).

The effect of taxation has also been investigated from the perspective of dividends subjected to tax. It has been observed that regular streams of dividends have no impact on the value of a firm (Miller and Modigliani, 1963), leading to the dividend irrelevancy proposition.

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[7] This theory has been slightly modified by Myers and Majluf (1984).

Moreover, the effect coming from dividends has been attributed to a signalling effect rather than the dividend effect per se. Brennan (1970) questioned that notion and expanded this theory by developing an after tax CAPM framework,[8] whereby he analyses the effect of personal/dividend taxation on the expected value of a firm.

(2) $$E(R_m - R_f)_i = \alpha_1 \beta_i + \delta_1 Div_i$$

Brennan's study was replicated by Litzenberger and Ramaswamy (1979; 1980; 1982), with a slightly changed model. They claimed to find evidence of a clientele effect, as the implied tax rates in the coefficients for the dividend yields were related to the clienteles, as suggested by earlier researchers. Similar works have been done using different models and methodologies to look for dividend effects on firm value, although the results have been mixed (see Black and Scholes, 1974; Long, 1978; Poterba and Summers, 1984; Ariff, 1985; Chen, Grundy and Stambaugh, 1990; Naranjo, Nimalendran and Ryngaert, 1998; Fama and French, 1998; Gentry, Kemsley and Mayer, 2003 and several more).

Studies have also looked at the share price effect in the event of a tax announcement. Amromin, Harrison and Sharpe (2008) found an increase in share prices following the announcement of the United States dividend tax cut in 2003, although with low significance. The study indicates that high dividend portfolios outperformed low dividend portfolio following dividend tax reduction. Similarly, Selamat, Ariff, and Shamsher (2013) evidenced significant price increases following the decision to impose a single tier tax system in Malaysia, which resulted in tax-free dividend income. Currently, there are limited studies that have looked into the announcement of corporate taxation due to the complicated confounding effect (Doidge & Dyck, 2015). This paper would modestly attempt to shed light in this area and extend the literature on firm valuation.

DATA AND METHODOLOGY

Data

This section aims to explain how the disclosure dates of tax reforms are identified before explaining the data sources and test models. There is a vast body of web-based and official publication sources for the many dates over which the reform details are discussed and released to the marketplace (see Table A2 in Appendices, which lists the dates in chronological order). The news about the events is collected from a number of sources. Because of the paucity of news coverage in English in some periods in print publications, especially during the early 1990s, we find the dates from journal articles and some other sources, such as the Factiva database. These dates are then confirmed from the government law database website to validate the information.

In order to make sense of slow releases of announcements with regard to which dates were more important than others, we resorted to first documenting all the announcements and then exploring how the stock market index reacted to the announcements on each of these dates.

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[8] The after tax CAPM model was developed based on earlier framework of CAPM that is constructed by Farrar and Selwyn (1967). The CAPM was initially derived by works from Sharpe (1964), Lintner (1965) and Mossin (1966).

The aim was to identify whether some news disclosures created more certainty that the reform package would be finalised. We found three dates on which news disclosures reached certainty of the laws being finalised: the announcement of passing of tax law, the date of law issuance and the date the law takes effect. All these were recorded since we were unsure when the information actually reached the public. Chui and Kwok (1998) reported that all information had to be vetted by the government before consent was given for the media to release it to the public. Therefore, we are quite certain that the information did not leak out before the law was confirmed in the meeting. We identify these events as the dates around which tests are to be conducted for sharing price reactions using individual stock abnormal returns.

The data on share prices are collected from DataStream. We obtain the Shanghai adjusted market index prices and the firms' capitalisation adjusted share prices. There are three common Chinese equity listing types, namely 'A', 'B' and 'H' shares. The 'A' share is limited to purchase by local investors, the 'B' share is only for foreign investors and the 'H' share is freely traded by anyone, although it is only traded in Hong Kong. We exclude the 'H' share from the analysis since it is not listed in the Shanghai market. We would like to observe the difference between these two equity listing types since information may creep in faster for foreign investors due to the information barrier in China (Chui & Kwok, 1998). Therefore, the result for both types of equity will be noted for comparison.

Both market and individual firm's share returns are calculated using the natural log of return, $ln(P_t/P_{t-1})$ as is well established; these values are then converted to percentages. Further, from the same database, we collect information about firms: standard deviation of stock returns over a 30-week period with daily data as a measure of stock risk, annual market capitalization for size variables and annual debt-to-equity ratio in the form of average debt-equity over the year. The selection of sample in each period is based on the availability of data. Data are limited for events dated between 1991 and 1993, as not many firms were yet listed on the newly established Shanghai Exchange as of December 1990. Even the 'B' shares were first listed on the Shanghai Exchange in July 1992. Over time, the number of firms increased, with about 2000 firms listed by 2007.

Methodology

An event study is conducted to investigate the effect of an event on stock returns. The effect can be attributed to either firm-specific or economy-wide factors. The event study method has improved significantly over the years and has been applied in many studies. The core elements of this method are based in the studies of Ball and Brown (1968) and Fama Fisher, Jensen and Roll (1969). Parametric tests assume a normal distribution of returns, which is sometimes violated in certain studies. Therefore, non-parametric tests are better for detecting type 1 errors, or false significance. Several powerful and well-recognized non-parametric tests include those of Corrado (1989), Zivney and Thompson (1989) and Corrado and Zivney (1992). Correction for test statistics is also offered by Kolari and Pyononen (2010) to account for cross-sectional correlation, which improves the statistical power of the test.

For this study, we report the results using test statistics for normal and non-normal probability distributions based on an event study software program, Event Study Metrics UG.

Both parametric and non-parametric indications are considered due to the low sample sizes on some of the event dates. The procedure for conducting the event study is based on MacKinlay (1997). The abnormal returns around the event daily dates are calculated as:

(3) $\quad\quad AR_{it} = R_{it} - E(R_{it})$

where AR_{it} are the expected abnormal returns of firm i and the $E(R_{it})$ are estimated using the established Market Model, which is based on the assumption of a constant and linear relation between individual asset returns and market return. The model accounts for each variation that is carried out by individual firms and is defined as:

(4) $\quad\quad E(R_{it)} = \alpha_i - \beta R_{Mt} + \epsilon_{it}$

The parameters of the model are estimated using the ordinary least squares (OLS) equation. The average of the abnormal returns across all firms experiencing the event is then computed as the average abnormal returns, AAR_t, which is an accurate way of measuring the event impact around the time of the announcements. We tried various windows around the event dates and selected much shorter windows during which the results are significant. The average is calculated across all firms in a cross section of time from i = 1, N firms.

(5) $\quad\quad AAR_t = 1/N \sum_{i=1}^{N} A_{it}$

The cumulative average abnormal returns, $CAAR_{(K,L)}$, are also calculated across the test window from –K to +L window markers:

(6) $\quad\quad CAAR_{(K,L)} = \sum_{t=K}^{L} AAR_t$

The $CAAR_{(K,L)}$ are then tested against the significance t-tests. As for test statistics assuming a normal distribution of returns, we applied the classic Brown and Warner (1980) cross-sectional crude dependence t- test, which is robust for an event-induced variance. The cumulative abnormal returns are further added up across the lengths of the event windows, from day K to L. Variance is estimated based on the cross-section of abnormal returns, and the calculations are shown as follows (equation 8–12):

(7) $\quad\quad t = AR_t/S(AR_t)$

The calculation of standard error, $S(AR_t)$, of abnormal returns is as follows:

(8) $\quad\quad S(AR_t) = \sqrt{(\sum_{t=-180}^{t=-50}(AR_t - A^*)^2)/(N-1)}$

where A* is the mean abnormal returns, which is computed as follows:

(9) $\quad\quad A^* = \frac{1}{N}(\sum_{t=-180}^{t=-50}(AAR_t))$

The t-value of the cumulative average abnormal returns is

(10) $\quad\quad t = CAAR_{(K,L)}/S(CAAR_{(K,L)})$

where $S(CAAR_{(K,L)})$ could be referred to as the standard error computed by mutiplying the number of days by the standard deviation of abnormal returns:

$$(11) \qquad S\big(CAAR_{(K,L)}\big) = \sqrt{Tvar(AAR_t)}$$

where, T is the number of cumulative days in the given event window and *var* is the variance of the estimated average abnormal returns at time t.

Since the common t-test is prone to cross-sectional correlation and volatility changes, we also compare the t-statistic to the more powerful test by Boehmer, Musumeci and Poulsen (1991). The test provides the standardized residuals with variance estimates based on the cross section of the event-window abnormal returns. The estimation is corrected using the more recent method proposed by Kolari and Pyonnonen (2010), which accounts for cross-correlation. Additionally, we use the Corrado (1992) rank test, which is more robust in accounting for the non-normal distribution of abnormal returns, which are prevalent in samples with a low number of observations. The non-parametric test is reported where significance is indicated. Results for tax events from 1991, 1993 and 2007 are presented in the next section.

FINDINGS AND INTERPRETATIONS

The Tax Effects

We obtained data on a sample of firms including 2708 observations, and we split the data set according to their types: 'A', 'B', or 'H' share. Share 'A' includes the listed local Chinese firms with only domestic investors. Share 'B' includes local Chinese firm that is open to be purchased by foreign investors. 'H' shares are excluded in this study since they are not traded on the Shanghai exchange. In the first two law tax change events, we only report the effect on 'A' share firms due to the limited availability of 'B' share data.

Table 1 illustrates the 'A' share performance during the implementation of tax law on Foreign Investment Enterprise (FIE) and Foreign Enterprise (FE), where we find no significant impact throughout the passing and issuance of the laws on 9 April 1991 and 1 July 1991, respectively.

Table 1 'A' Share Portfolio Cumulative Average Abnormal Returns (CAARs) around 1991 Tax Event Dates (in percentage)

		-1 to 0	0 to +1	-1 to +1
9/4/1991	Share A	0.57	0.10	0.77
		(1.131)	(0.342)	(1.481)
1/7/1991	Share A	-0.29	0.32	-0.38
		(-0.557)	(1.831)*	(-0.855)

The CAARs are calculated only for 'A' share firms due to the unavailability of Share B data at the implementation of tax on enterprise with foreign investment and foreign enterprise event dates. The three dates below are the passing of the law (9th of April, 1991), law issuance and the effective date (30th of June and 1st of July 1991). The 30th of June is a non-trading day, and therefore the CAAR is calculated based on the following day. The sample size for Share A is 7, and the significance of the T-statistic is denoted under each calculated CAAR. Similar results are obtained using the Kolari and Pyonnonen (2010) corrected standardized cross-sectional test (Boehmer et al., 1991) and Corrado Rank test (1992), which account for non-normal distribution of the abnormal returns. Note: P-value is noted as * (<0.1), ** (<0.05) and *** (<0.01).

The law affects foreign enterprises and local enterprises with foreign investment, imposing an income tax rate of 30 per cent, with an additional local income tax of 3 per cent. This insignificant effect is expected since most local Chinese firms are not directly affected by the change in the law (most have no foreign investment), and it may also be due to the many other tax exemptions and deductions available for these firms. Figure 1 illustrates the movement of CAAR across the event dates, which shows a slight decline around days -1 and 0.
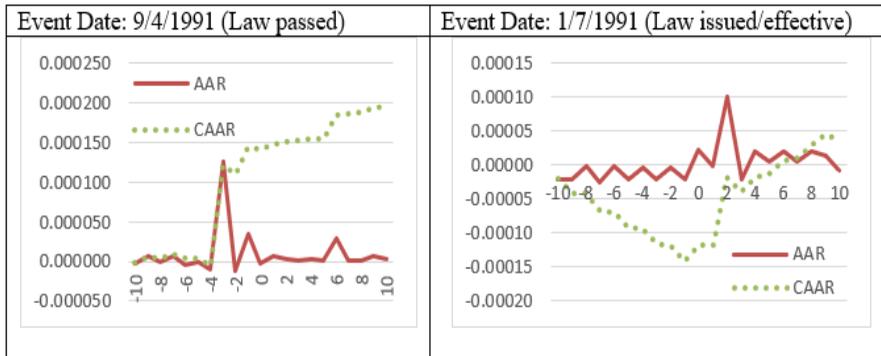

Figure 1 'A' Share Portfolio Average Abnormal Returns (AARs) and CAAR around Tax Announcement on Enterprise Income 1991

The 1994 implementation of income tax for local Chinese firms imposed a 33 per cent corporate tax. We find that the 'A' share portfolio shows a negatively significant AAR of 0.59 per cent on the day the law was passed (Table 2).

Table 2 'A' Share Portfolio CAARs around 1993 Tax Event Dates (in percentage)

		-1 to 0	0 to +1	-1 to +1	Others	
26/11/1993	A Share	-0.01	-0.38	0.20	-0.59	0 to 0
		(-0.031)	(-1.118)	(0.484)	(-2.807)***	
13/12/1993	A Share	-1.72 [a]	-1.61	-1.73	-3.10 [b]	-3 to +3
		(-6.503)***	(-6.017)***	(-5.172)***	(-5.025)***	

The CAARs are calculated for 'A' share portfolio at the implementation of tax on local Chinese enterprise event dates. The two dates above are the passing of the law (26th November, 1993) and law issuance (13th December 1993). The sample size for 'A' share firms is 147, and the significance of the T-statistic is denoted under each calculated CAR. Similar results are obtained using the Kolari and Pyonnonen (2010) corrected standardized cross-sectional test (Boehmer et al., 1991) and the Corrado Rank test (1992), which accounts for non-normal distribution of the abnormal returns. Note: P-value is noted as * (<0.1), ** (<0.05) and *** (<0.01). Rank test also indicates [a] p-value of <0.05, and [b] p-value of <0.1

Following the issuance of the law on 26 November 1993, a significantly negative CAAR is shown across day 0 to 0. It is believed that this was the moment where the information leaked out to the public. A positively negative CAAR of around -3.1 per cent is observed from day -3 to +3 of the law issuance date. The CAAR movement can be seen in Figure 2 and Table 2, where 'A' share firms' CAAR is moving in a negative direction immediately after the issuance of the tax law on 13 December 1993, indicating a loss of wealth due to the reintroduction of corporate taxation (33 per cent). Figure 2 illustrates the movement of CAAR, showing a

significant decline to negative 1 per cent from days 0 to 5 following the confirmation of the law on 13 December 1993.
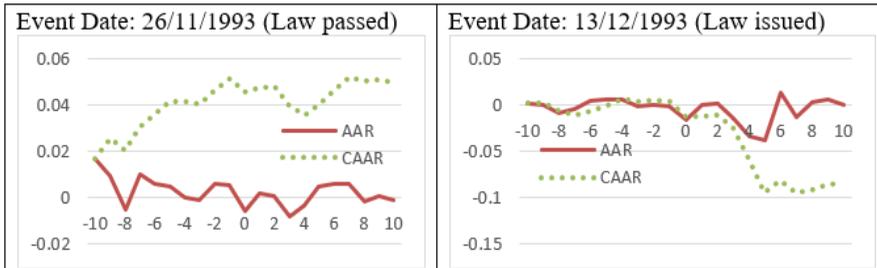
Figure 2 'A' Share Portfolio AARs and CAAR around Tax Announcement on Enterprise Income 1994

As for the unification of corporate tax in 2008, we find that across all dates for the 'A' share portfolio, the CAARs show highly significant positive indications. This reflects the positive reaction towards the corporate income tax reduction for the local Chinese firms, from the previous 33 per cent to 25 per cent. The CAAR was as high as 4.72 per cent (-3 to +3) when the tax law was announced and 3.32 per cent (-3 to +3) when the law was issued. Also, as expected, the 'B' share firms show a mildly negative reaction for all event dates. The slight reaction from the 'B' share portfolio might be partly due to the gradual increase of the tax rate promised by the government, which would be phased out in five years for local firms with foreign investment. The CAAR effect charting can be seen in Figure 3 and Table 3.

Table 3 'A' and 'B' Share Portfolio CARs around 2008 Tax Unification Event Dates (in percentage)

		-1 to 0	0 to +1	-1 to +1	Others	
8/3/2007	A Share	1.65	1.35	2.38	4.72	-3 to +3
		(15.58)***	(12.77)***	(18.38)***	(23.87)***	
	B Share	0.89	-1.27 [b]	0.41	-3.75 [a]	
		(1.366)	(-1.988)**	(0.632)	(-2.813)***	
16/3/2007	A Share	-0.47	-0.28	-0.56	3.332	-3 to +3
		(-3.997)***	(-2.687)***	(-3.834)***	(16.77)***	
	B Share	-1.50 [c]	-0.07	-0.76	-1.26	
		(-4.484)***	(-0.074)	(-0.9196)	(-1.284)	
6/12/2007	A Share	0.40	1.841	1.50	3.68	-3 to +3
		(4.938)***	(22.713)***	(14.143)***	(10.342)***	
	B Share	-0.68	-0.67	-0.93	-1.07	
		(-2.138)**	(-2.350)**	(-2.435)**	(-1.337)	

The CARs are calculated for 'A' and 'B' share portfolios at the revision of tax on local Chinese enterprise event dates. The three event dates above are the formal government announcement (8th March, 2007), passing of the law (16th March, 2007) and law issuance (6th December 2007). The sample size for A firms is 1444 and for B firms is 19, and the significance of the T-statistic is denoted under each calculated CAR. Similar results are obtained for B firms using the Kolari and Pyonnonen (2010) corrected standardized cross-sectional test (Boehmer et al., 1991). Note: P-value is noted as * (<0.1), ** (<0.05) and *** (<0.01). Standardized test indicates [a] p-value of <0.01, [b] p-value of <0.5, and [c] p-value of <0.1

From Figure 3 it can be seen that across all important event dates, the CAARs of 'A' share firms are moving upward, indicating a positive reaction towards the corporate income tax reduction. Nevertheless, the CAARs of 'B' share firms are showing a mildly negative trend during the implementation of the law, further declining after the effective date of the law on 1 January 2008. This indicates a negative reaction towards the decision to increase the tax rate, although the gradual increase would be phased out over a five-year period. Thus, these price reactions are consistent with the positive and negative effects of tax laws on the firms. The effects on news disclosures are statistically significant in this capital market.
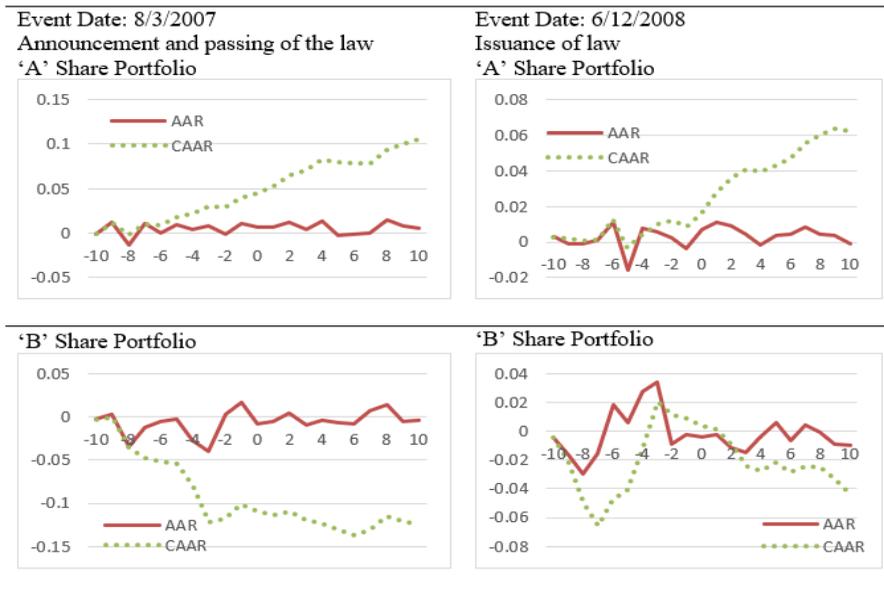
Note: The CAAR figures combine event dates of 8th March, 2007 (formal government announcement) and 16th March, 2007 (passing of the law) since they are only separated by eight days.

Figure 3 Portfolio CAARs around Tax Announcement on Enterprise Income 2007

Robustness Test

For each firm, we regressed the cumulative average abnormal returns for three days over the event date with selected variables: (1) firm risk, which is represented by standard deviation over 30 days of the abnormal returns, (2) firm size, which is measured by the firm's annual market capitalization in millions of dollars in natural log and (3) firm's annual debt to equity ratio (DE), which is measured as a percentage. These firm variables are important since they capture the firms' characteristics and risk factors, which have a relative effect on the results. This further validates the cross-sectional results from the previous section.

The choice of variables is based on previous literature mentioning their significance. Perez-Quiroz and Timmerman (2000) find that firm size plays an important role in handling market condition. Vithessonthi and Tongurai (2015) study, along with several others (e.g. Margaritis and Psillaki, 2010; Cai and Zhang, 2011; Giroud, Mueller, Stomper, & Westerkamp, 2012), evidence that financial leverage is a potential factor affecting a firm's returns. The standard

deviation accounts for a firm's individual risk and volatility in some fundamental asset pricing models (Sharpe, 1964; Markowitz, 1991). The data for the variables are not available during the earlier period between 1991 and 1993; therefore, we could only verify the results on the most recent event date.

We find that the signs on coefficients are mostly in accordance with the expected theoretical relations of risk, size and debt-to-equity (DE) ratio (see Table 4). Significant coefficients are observed on the tax announcement date for the 'A' share portfolio, indicating relevant abnormal returns following the release of new information. Positive signs are reported on the risk coefficient across the first two events for 'A' share firms, with high significance. This would indicate higher abnormal return given higher risk. Significantly negative signs for 'A' share firms are observed across all dates, indicating confirmation of the theory regarding the small firm effect. Conversely, the DE coefficient indicates mixed signs, with significant signs being negative. This would indicate that firms with lower debt level have advantages when dealing with corporate tax reduction. This result is somewhat similar to Doidge and Dyck (2015) finding. This is true given the obtained reduction of the tax shield.

Table 4 Regression Analysis on CAARs of China Tax Unification Law Event, 2008 (in percentage)

Date	Portfolio	C	RISK	SIZE	D/E	Adj R	F-Stat
8/3/2007	A Share	0.2250	0.8569	-0.0304	-0.000002	0.068	3.330***
		(8.144)***	(2.131)**	(-8.520)***	(-4.06)***		
	B Share	-0.1887	3.3463	0.0062	0.00001	0.161	2.154*
		(-1.453)	(3.033)***	(0.329)	(0.5548)		
16/3/2007	A Share	0.2383	0.4072	-0.0324	0.000001	0.049	24.201***
		(8.739)***	(1.889)**	(-8.318)***	(1.349)		
	B Share	-0.007	-0.5858	0.0011	0.00003	0.260	3.113*
		(-0.168)	(-1.736)*	(0.1661)	(5.833)***		
6/12/2007	A Share	0.2539	0.0009	-0.033	0.000001	0.043	20.965***
		(9.422)***	(0.005)	(-8.386)***	(1.413)		
	B Share	-0.0152	0.9043	-0.0019	-0.00002	0.269	3.209*
		(-0.503)	(2.607)**	(-0.392)	(-2.412)**		

For the robustness test, some independent variables are regressed against cumulative average abnormal returns (CAAR) as the dependent variable. Variables included in this regression are the standard deviation of abnormal returns (firm risk), market capitalization (size) and debt-to-equity (leverage) ratio for each firm. This regression uses white heteroscedasticity-consistent standard errors and covariance as in Eviews. Note: P-value is indicated by * (0.1), ** (0.05) and *** (0.01).

Nevertheless, the 'B' share firms result is not as strong. The coefficient of risk is in line with the theory, with the more significant signs being positive. Firm size and debt ratio show mixed results, most likely due to the low number of observations.

CONCLUSION

This paper provides evidence on how corporate income tax changes directly affect the share prices in China, which is a very important emerging market. This study deserves attention due to the significance of tax policy impacts on firm values in such a large economy. The result is not consistent with the classic Modigliani and Miller (1963) theory on the relevance of corporate tax to firm value, which claims that there is tax deductibility for interest income leading to tax shield value gains. In fact, the result indicates that the firms create value from the total tax savings as a result of the tax reduction (as evidenced by the 2007 tax event) but also lose value following the re-introduction of tax (as evidenced by the 1993 tax event). We find that the 1993 tax event negatively affected local Chinese firms by decreasing their cash flows, a result of the new 33 per cent tax rate. Nevertheless, the unification of corporate tax in 2007 at a lower tax rate for local firms and at a higher tax for firms with foreign investment had different effects. The local Chinese firms were positively affected because the reduced tax increased their cash flows. However, there was a negative effect on the firms with foreign investment, although the effect was mild, likely because the increase in the tax rate was to be phased out over a five-year period. This finding is also similar to Chang, Chen and Chen (2017) on Taiwan sample.

Additionally, the study finds that the Chinese market is fairly efficient in pricing equity. The market promptly reacted to the value-changing tax policy. Indeed, most significant impacts are found within one to three days of the event date, despite the control of information and the media by the government. These results are new, but they support tax effect theories. Given the size of the Chinese economy and the impact tax laws would have had, these findings contribute to the growing literature on corporate finance, and taxation policy, as revealed in tests of this market.

Future study may consider the corporate policy implication in the event of tax revision. There are opportunities to further substantiate the tax effect in an emerging market like China (Shamsher, Taufiq, & Ariff, 2007). This would include the utilization of tax savings, possible investment opportunity, the capital structure and also valuation of tax shield. Another possible extension to the study is to look at the long term effect of the corporate tax reform, which can be adopted using different time-series methodology. Different variables at the macroeconomic level, such as GDP and FDI, should be considered to see the overall impact to the economy. This study could be well elaborated in many research directions.

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REFERENCES

Al-Arab. (2015), "Kuwait plans to introduce corporate tax as oil slumps", available at: www.alarab. co.uk/en/?id=4735. (accessed 7th October 2017).

Ariff, M. (1985), *An investigation of tax-induced dividend effects in the Singapore equity market.* Brisbane, Australia: The University of Queensland.

Amromin, G., Harrison, P., and Sharpe, S. (2008), "How did the 2003 dividend tax cut affect stock prices?", *Financial Management,* Vol. 37 No.4, pp. 625-646.

Ball, R. and Brown, P. (1968), "An empirical evaluation of accounting income numbers", *Journal of Accounting Research,* Vol. 6 No. 2, pp. 159-178.

Bellak, C. and Leibrecht, M. (2009), "Do low corporate income tax rates attract FDI? Evidence from Central-and East European countries", *Applied Economics*, Vol. 41 No. 21, pp. 2691-2703.

Black, F. and Scholes, M. (1974), "The effects of dividend yield and dividend policy on common stock prices and returns", *Journal of Financial Economics,* Vol. 1, pp. 1-22.

Brean, D. J. (2013), T*axation in modern China*. Routledge.

Brennan, M. J. (1970), "Taxes, market valuation and corporate financial policy", *National Tax Journal*, Vol. 23 No. 4, pp. 417-427.

Brown, S. and Warner, J. (1985), "Using daily stocks: The case of event studies", *Journal of Financial Economics,* Vol. 14, pp. 3-31.

Cai, J. and Zhang, Z. (2011), "Leverage change, debt overhang, and stock prices", *Journal of Corporate Finance,* Vol. 17 No. 3, pp. 391-402.

Chang, C.W., Chen, M.C. and Chen, V.Y. (2017), "Are Corporate Tax Reductions Real Benefits under Imputation Systems?", *European Accounting Review,* Vol. 26 No. 2, pp. 215-237.

Chen, N. F., Grundy, B., and Stambaugh, R. F. (1990), "Changing risk, changing risk premiums and the dividend yield effect", *Journal of Business,* Vol. 63, pp. 178-206.

China State Administration of Taxation. (2017), "Revenue Statistics", available at: http://www.chinatax. gov.cn/eng/ (accessed 7th October 2017).

Corrado, C. J. (1989), "A non-parametric test for abnormal security-price performance in event studies", *Journal of Financial Economics,* Vol. 23, pp. 385-395.

Corrado, C. J. and Zivney, T. L. (1992), "The specification and power of the sign test in event study hypothesis tests using daily stock returns", *Journal of Financial Quantitative Analysis,* Vol. 27, pp. 465-478.

Devereux, M. P., Lockwood, B., and Redoano, M. (2008), "Do countries compete over corporate tax rates?", *Journal of Public Economics,* Vol. 92 No.5, pp. 1210-1235.

Djankov, S. (2017). "Corporate tax cuts: Examining the record in advanced economies", available at: http://www.lse.ac.uk/fmg/dp/discussionPapers/fmgdps/DP764.pdf (accessed 10th October 2017).

Doidge, C. and Dyck, A. (2015), "Taxes and corporate policies: Evidence from a quasi natural experiment", *The Journal of Finance,* Vol. 70 No. 1, pp.45-89.

Donaldson, G. (1961), *Corporate debt capacity: A study of corporate debt policy and determinants of corporate debt capacity.* Boston: Division of Research, Harvard Graduate School of Business Administration.

Fama, E. (2011), "My life in finance", *Annual Review of Financial Economics*, Vol. 3, pp. 1-15

Fama, E. and French, F. (1998). "Taxes, financing decisions, and firm value", *Journal of Finance,* Vol. 53, pp. 819-843.

Fama, E. F., Fisher, L., Jensen, M. C., and Roll. (1969), "The adjustment of stock prices to new information", *International economic review,* Vol. 10 No.1, pp. 1-21.

Farrar, D. and Selwyn, L. (1967), "Taxes, corporate financial policy and returns to investors", *National Tax Journal,* Vol. 20 No. 4, pp. 444-454.

Gentry, W. M., Kemsley, D., and Mayer, C. J. (2003), "Dividend taxes and share prices: Evidence from real estate investment trusts", *The Journal of Finance,* Vol. 58 No. 1, pp. 261-282.

Giroud, X., Mueller, H. M., Stomper, A., and Westerkamp, A. (2012), "Snow and leverage", *The Review of Financial Studies*, Vol. 25 No. 3, pp. 680-710.

Graham, J. R. (2003). "Taxes and corporate finance: A review", *The Review of Financial Studies,* Vol. 16 No. 4, pp. 1075-1129.

Haufler, A. and Schjelderup, G. (2000), "Corporate tax systems and cross country profit shifting", *Oxford Economic Papers,* Vol. 52 No. 2, pp. 306-325.

Kraus, A. and Litzenberger, R. H. (1973), "A state-preference model of optimal financial leverage", *The Journal of Finance*, Vol. 28 No. 4, pp. 911-922.

Lin, S. (2009). *The rise and fall of China's government revenue.* East Asian Institute, National University of Singapore.

Lintner, J. (1955), "Effects of a shifted corporate income tax on real investment", *National Tax Journal,* Vol. 8 No. 3, pp. 229-251.

Lintner, J. (1965), "The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets", *The Review of Economics and Statistics*, Vol. 47 No.1, pp. 13-37

Litzenberger, R. H. and Ramaswary, K. (1979), "The effect of personal taxes and dividends on capital asset prices", *Journal of Financial Economics,* Vol. 7, pp. 163-195.

Litzenberger, R. H. and Ramaswary, K. (1980). "Dividends, short selling restrictions, tax-induced investor clienteles, and market equilibrium", *The Journal of Finance,* Vol. 35 No. 2, pp. 469-482.

Litzenberger, R. H. and Ramaswary, K. (1982), "The effects of dividends on common stock prices tax effects or information effects?", *The Journal of Finance,* Vol. 37 No. 2, pp. 429-443.

Long, J. B. (1978), "The market valuation of cash dividends: A case to consider", Journal of Financial Economics, Vol. 6, pp. 235-264.

Louwe, M. and Shaughnessy, E. L. (1999), *The Cambridge history of ancient China: From the origins of civilizations to 221 B.C.* Cambridge, UK: Cambridge University Press.

MacKinlay, A. C. (1997), "Event studies in economics and finance", *Journal of Economic Literature,* Vol. 35 No. 1, pp. 13-39.

Margaritis, D. and Psillaki, M. (2010), "Capital structure, equity ownership and firm performance", Journal of Banking and Finance, Vol. 34 No. 3, pp. 621-632.

Markowitz, H. M. (1991). "Foundations of portfolio theory", *The Journal of Finance,* Vol. 46 No. 2, pp. 469-477.

Miller, M. H. and Modigliani, F. (1961), "Dividend policy, growth and the valuation of shares", *Journal of Business,* Vol. 34 No. 4, pp. 411-433.

Modigliani, F. and Miller, M. H. (1958), "The cost of capital, corporation finance, and the theory of investment", *American Economic Review,* Vol. 48 No. 3, pp. 261-297.

Modigliani, F. and Miller, M. H. (1963), "Corporate income taxes and the cost of capital: A correction", *American Economic Review,* Vol. 53 No. 3, pp. 433-443.

Mossin, J. (1966), "Equilibrium in a capital asset market", *Econometrica*, Vol. 34, pp. 768-782.

Myers, S. C. and Majluf, N. (1984), "Corporate financing and investment decisions when firms have information that investors do not have", *Journal of Financial Economics,* Vol. 13, pp. 187-221.

Nakazato, M. (2011), "An optimal tax that destroyed the government: An economic analysis of the decline of the Tang dynasty", *University of Tokyo Law Review,* Vol. 6, pp. 34-245.

Naranjo, A., Nimalendran, M., and Ryngaert, M. (1998), "Stock returns, dividend yields, and taxes"' *The Journal of Finance,* Vol. 53 No. 6, pp. 2029-2057.

Perez-Quiros, G. and Timmermann, A. (2000), "Firm size and cyclical variations in stock returns", *The Journal of Finance,* Vol. 55 No. 3, pp. 1229-1262.

Poterba, J. M. and Summers, L. H. (1984), "New evidence that taxes affect valuation of dividends", *The Journal of Finance,* Vol. 39 No. 5, pp. 1397-1415.

PricewaterhouseCoopers (PWC). (2017), "Kuwait corporate taxes on corporate income", available at: www.taxsummaries.pwc.com/ID/Kuwait-Corporate-Taxes-on-corporate-income (accessed 7th October 2017).

Selamat, A., Ariff, M., and Shamsher, M. (2013), "Introduction of the single-tier corporate tax system: its effect on share price", *Capital Markets Review,* Vol. 21, pp. 39-66.

Selamat, A., Ariff, M., and Shamsher, M. (2015). "What happens when Islamic capital markets move away from tax neutrality – A look at Oman and Saudi Arabia", *Pertanika Journal of Social Sciences and Humanities,* Vol. 23 No. 1, pp. 253-266.

Shamsher, M., Hassan, T, and Ariff, M. (2007) "Research in an emerging Malaysian capital market: A guide to future direction", *International Journal of Economics and Management,* Vol. 1 No. 2, pp. 173-202.

Sharpe, W. F. (1964), "Capital asset prices: A theory of market equilibrium under conditions of risk", *The Journal of Finance*, Vol. 19 No. 3, pp. 425-442.

Tsang, S.-K. and Cheng, Y.-S. (1994), "China's tax reforms of 1994: Breakthrough or compromise?", *Asian Survey*, Vol. 34 No. 9, pp. 769-788.

Vithessonthi, C. and Tongurai, J. (2015), "The effect of leverage on performance: Domestically-oriented versus internationally-oriented firms", *Research in International Business and Finance*, Vol. 34, pp. 265-280.

World Bank (2017), "GDP Growth (annual %)", available at: https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=CN (accessed 7th October 2017).

APPENDICES

Table A1 China GDP and Tax Revenue
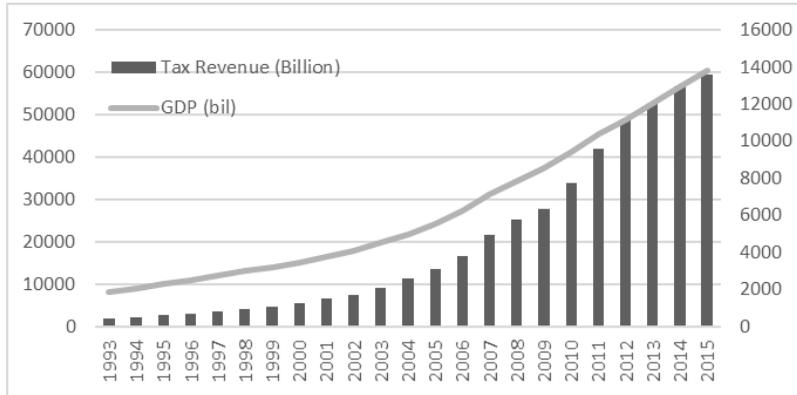
Note: Data collected from World Bank database and China State Administration of Taxation website (http://www.chinatax.gov.cn/eng/).

Table A2 Related Event Dates Regarding Changes in Enterprise/Corporate Tax in China

Income Tax Law of the People's Republic of China for Enterprises with Foreign Investment and Foreign Enterprises (This includes foreign companies, enterprises with foreign investment, enterprises and other economic organizations that either have establishments or locations in China or have income from sources within China)

09/04/1991	Passed during the Forth Plenary Session of the Seventh National People's Congress of the PRC
30/06/1991	Issued by the State Council
01/07/1991	Effective date of the tax law

Interim Regulations of the People's Republic of China on Enterprise Income Tax (Include any state-owned, collective, private, joint operation and joint equity enterprise)

26/11/1993	Passed during the 12th General Meeting of the State Council
13/12/1993	Issued by the State Council
01/01/1994	Effective date of the tax law

Law of the People's Republic of China on Enterprise Income Tax (All resident and non-resident companies are taxed at 25 per cent, except for a few that have special status, including high-tech and other firms)

08/03/2007	Explanation of the Draft Enterprise Income Tax Law, delivered by Finance Minister Jin Renqing
16/03/2007	Passed during the Fifth Plenary Session of the Tenth National People's Congress of the PRC
06/12/2007	Issued by the State Council
01/01/2008	Effective date of the tax law