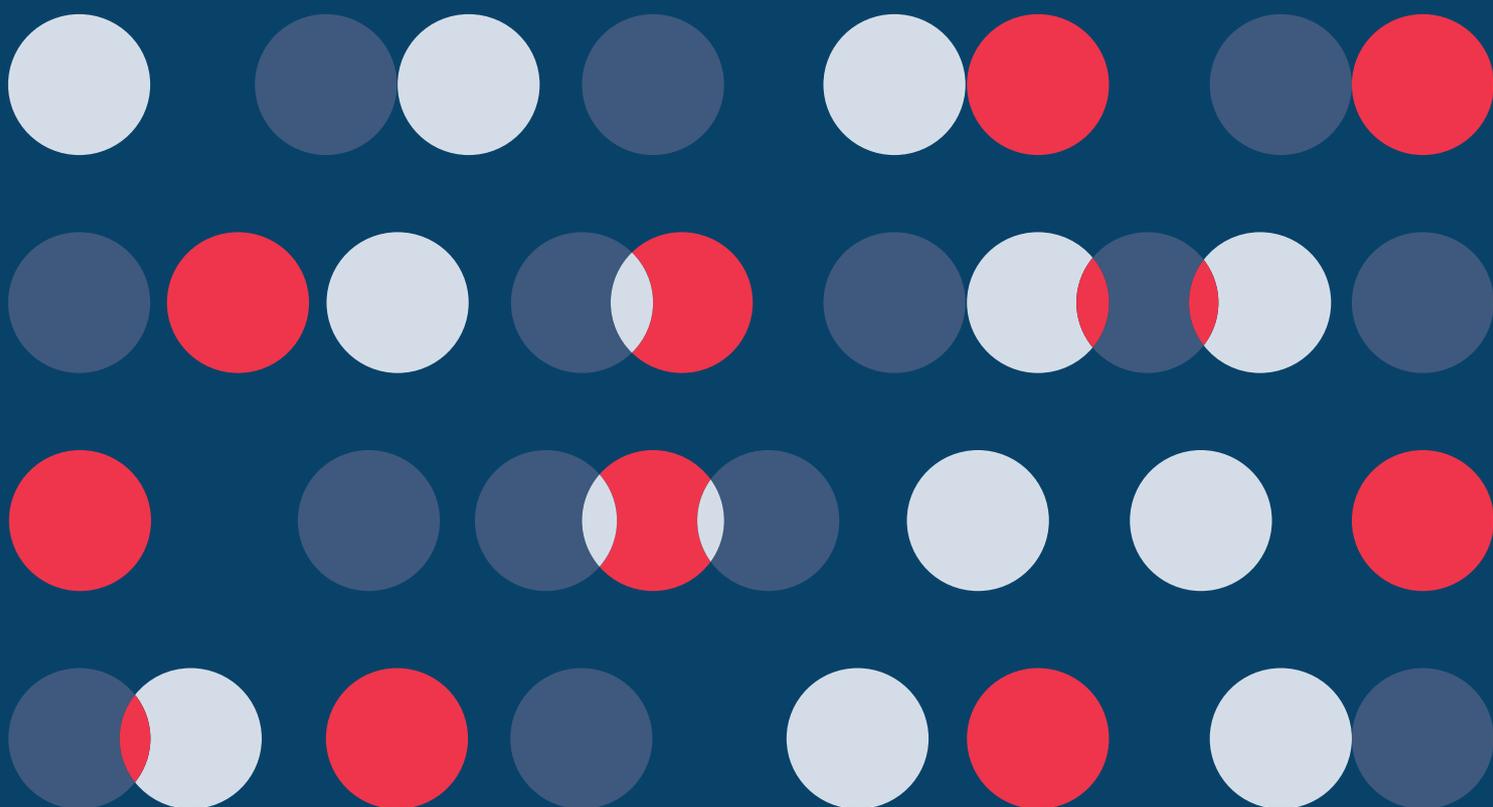


November 2018

RESEARCH REPORT

LISTING REGIME REFORMS FOR DUAL-CLASS SHARE
STRUCTURE AND BIOTECH INDUSTRY



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SUMMARY

With an expanding number of growth companies in Internet, high-tech and biomedical research and development industries across the world, a listing regime for weighted voting rights (WVR) has been introduced or is being considered by major international financial markets, like the US, the UK and Singapore, to facilitate the listing and financing of such companies.

The primary concern about adopting a listing regime for WVR is the separation of management control and cash-flow rights ownership, which is expected to aggravate the corporation's agency problem and undermine the management's accountability to shareholders. However, a dual-class share structure (DCS structure) is conducive to a start-up's long-term development, especially if it is an innovative technology company with substantial initial investment, high uncertainties and high growth potential. To be specific, a DCS structure helps an innovative company build its long-term value, incentivises the founders to instill the company with greater innovation and more human capital, and forestalls hostile takeover attempts. To a certain extent, it is also seen as a self-protective measure taken by start-ups to avoid market short-term behaviour when there is an over-concentration of institutional investors in the financial market. Moreover, according to some empirical studies, corporate values were improved and agency costs were reduced after a DCS structure had been adopted.

Certainly, there is still much debate in theoretical and empirical studies as to whether a DCS structure incurs higher agency costs than a single-class share structure and is therefore less conducive to the protection of shareholders' rights. So how can a company with a DCS structure enhance internal supervision to ensure effective monitoring of its controlling shareholders? Several options have been suggested: (1) imposing suitable restrictions over the use of superior voting rights, including the cap of voting rights ratio of WVR shares relative to other ordinary shares, and a clear delineation of the applicable scope of superior voting rights; (2) establishing clear exit and transfer mechanisms for superior voting rights, including the commonly known "sunset clauses" and restrictions on the transfer of superior voting rights; (3) enhancing corporate governance and the parallel use of internal and external control mechanisms.

In April 2018, HKEX put forward new measures for allowing DCS structures while imposing control and restrictions as appropriate. Under the new measures, applicants are required to possess certain characteristics before they can list with WVR. The HKEX will reserve the right to reject an applicant on suitability grounds if its WVR structure is an extreme case of non-conformance with governance norms (for example if the ordinary shares would carry no voting rights at all). HKEX also put forward detailed investor protection measures to be applied to WVR companies after their listing. These include measures that restrict the power of WVR, protect the voting rights of non-WVR shareholders, and strengthen corporate governance and disclosure requirements. Issuers with WVR structures will be differentiated from others through a unique stock marker "W" after their stock name. In addition, WVR beneficiaries must be directors of the issuers to ensure they operate the companies with the obligations of a director as set out under relevant laws and regulations. The WVR attached to a WVR beneficiary's shares will lapse once the WVR beneficiary transfers the WVR shares to another person, or dies or is incapacitated, or ceases to be a director. WVR are therefore subject to natural sunset clauses and will not exist indefinitely.

Meanwhile, HKEX would introduce a new chapter in the Listing Rules to open a route to listing for early-stage companies that do not meet the financial eligibility tests, including biotech companies with no revenue or profits. The biomedical sector is characterised by having substantial investment, high-value outputs and high risks, and being technology-intensive. As a result, biomedical enterprises usually adopt equity financing rather than debt financing during their growth period. Investing in early-stage biotech companies that do not have any prior record of generating revenue would be something new to Main Board investors. However, the regulation by internationally recognised bodies such as the U.S. Food and Drug Administration (FDA) and the stages involved in their approval processes provide investors with an indication as to the nature of the biotech companies and a frame of reference with which to judge the stage of development of the regulated

products to be produced by these companies. Today, many major securities markets in the world have in place securities rules for biotech companies.

Based on the unique characteristics of biomedical start-ups (no profit or revenue for a long time before and after listing) and their risk profile, HKEX introduced a new chapter in the Listing Rules to make the rules better satisfy the needs of biomedical and other new-economy companies, so as to attract more capital to the high-risk and high-return biotech sector and promote the long-term development of the biomedical industry. Appropriate reforms in the listing regime with suitable listing rules will encourage the emergence of large innovative biotech companies, contribute to the development of new-economy industries in the region, help upgrade the regional economy and expand its horizon. This is the kind of long-term positive impact that capital market reforms could have on the Hong Kong economy.

1. APPLICATION OF WEIGHTED VOTING RIGHTS (WVR) IN DIFFERENT COUNTRIES

WVR refers to voting rights and other related rights enjoyed by certain shareholders that are disproportionate to the economic interest held by such shareholders in the company. The rights of such special shares take multiple forms — the holders of which may have no voting right, or they may have preferential voting rights, or enhanced or exclusive rights to elect directors. The most common share structure that adopts WVR encompasses two classes of shares — “class A” shares with one vote per share and “class B” shares with multiple votes per share. “Class B” shareholders are generally the founders, early partners, key strategic investors or senior management of the company. In practice, most innovative companies (exemplified by the share structures of Google and Baidu in the US), at the time of their initial public offers (IPO), list their A shares (one vote per share) on an exchange, and issue their B shares (multiple votes, usually 10 votes, per share) to the company’s existing management. B shares may be converted into A shares on a one-to-one ratio, but A shares cannot be converted into B shares.

WVR structures, in essence, are dual-class share (DCS) structures under which founders can exercise effective control over a company with only a small percentage of shares with superior voting rights. Under such structures, founders of new-economy companies can continue to pursue innovation and maximization of growth and company value for shareholders without the pressure from new investors. With an expanding number of growth companies in Internet, high-tech and biomedical research and development (R&D) industries, a listing regime for WVR has been introduced or is being considered by major international financial markets, like the US, the UK and Singapore, to facilitate the listing and financing of such companies.

1.1 Evolution and effects of WVR structures in the US

The US is one of the earliest countries where companies adopt a DCS structure. It is also a country in which such structure has operated relatively effectively. DCS structures dated back to 1898 when the International Silver Company issued 9 million preferential shares and 11 million ordinary shares with no voting rights. This was the first time in history when shareholdings were separated from voting rights. DCS structures became popular in the 1920s. Between 1927 and 1932, a total of 288 companies issued shares with no or limited voting rights¹. Despite preference for a one-share-one-vote framework in the ensuing 40 years, some companies such as Ford continued to issue shares with different voting rights.

The rise of mergers and acquisitions (M&A) and fierce competition among exchanges in the 1980s substantially facilitated the adoption and use of DCS structures. At first, the three major securities exchanges in the US — New York Stock Exchange (NYSE), American Stock Exchange (AMEX) and NASDAQ — took different views towards these share structures. On one end of the spectrum, NYSE adhered to a strict policy of prohibition, demanding compulsory delisting of companies that sought to adopt WVR through share structuring. On the other end, NASDAQ had no restriction at all for WVR shares. In between was AMEX which allowed a conditional listing of dual-class ordinary shares. In 1984, NYSE suspended its policy to delist companies with a DCS structure and set up a special committee to evaluate its long-standing commitment to the one-share-one-vote principle. After a series of reform, NYSE, AMEX and NASDAQ accepted in 1994 the call of the US Securities and Exchange Commission (SEC) for a unified policy on the listing of companies with DCS structures. They agreed that, while a company must not reduce or restrict, through any action or share issuance, the voting rights of holders of ordinary shares that had been issued, a company issuing new shares might adopt a DCS structure². With a unified policy on DCS structures,

¹ Ashton, D. C. (1994) “Revisiting Dual-Class Stock”, *John’s Law Review*, Volume No. 68, pp. 863.

² See Jiang Xiaomin (2015) 〈美國雙層股權結構: 發展與爭論〉 (“US’ Dual-Class Share Structure: Development and Controversies”), *Securities Market Herald*, September 2015.

companies that adopted such a structure steadily increased in the US between 1994 and 1998. About 11.9% of IPOs and 24.9% of total funds raised by IPOs were attributed to such companies (see Table 1).

Since 2000, new listings have been dominated by high-tech Internet companies, and companies with DCS structures in the US notably increased. The DCS structure with which Google listed in 2004 was particularly popular in its industry. During the period from 2003 to before the financial tsunami in 2008, 64 out of 681 IPOs (9.4%) were companies that adopted a DCS structure, contributing to 20.8% of the total IPO funds raised. In the years after the financial tsunami up to 2013, 76 out of 461 IPOs (16.5%) were companies that adopted a DCS structure, contributing to 34.1% of the total IPO funds raised.³

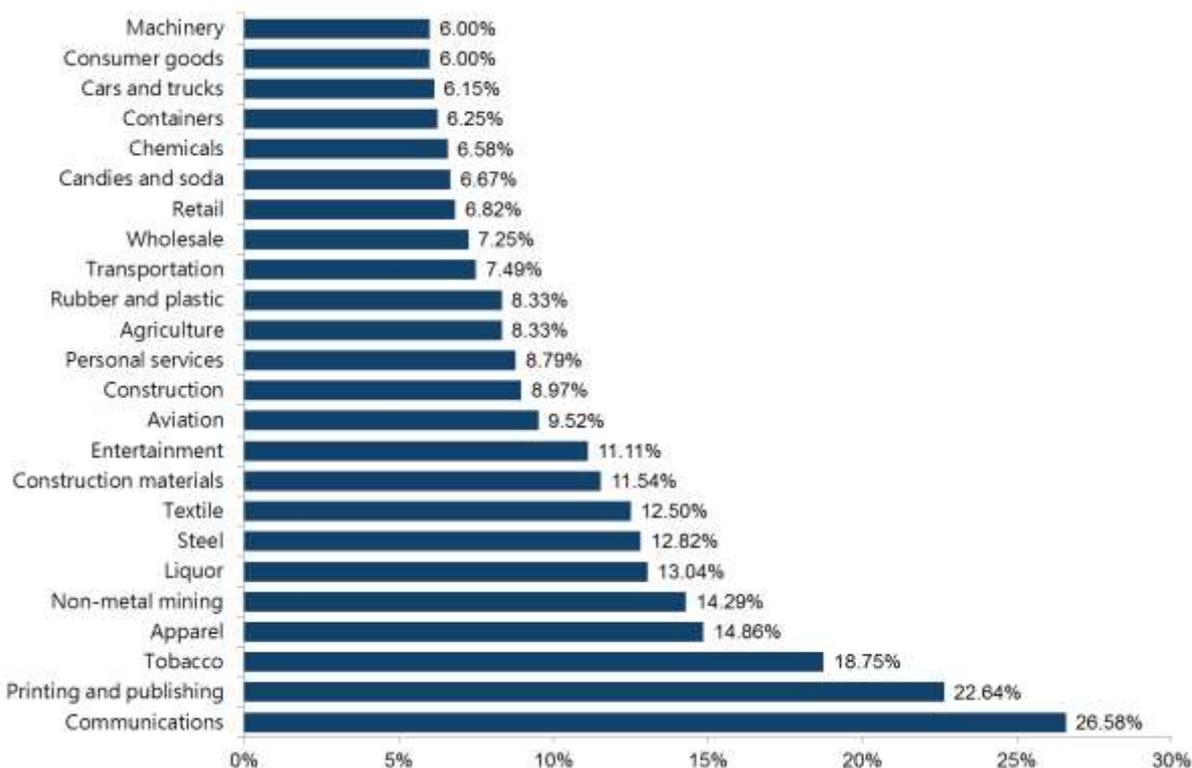
Table 1. The evolution of the use of dual-class share structures in the US since 1980s	
Period	Application
1985	180 listed companies (2.8% of total number) adopted DCS structures
1988 — 1992	Companies with DCS structures accounted for 5.4% of IPOs
June 1994 — Sep 1998	Companies with DCS structures accounted for 11.9% of IPOs and 24.9% of IPO funds raised
2003 — 2008	Companies with DCS structures accounted for 9.4% of IPOs and 20.8% of IPO funds raised
2008 — 2013	Companies with DCS structures accounted for 16.5% of IPOs and 34.1% of IPO funds raised

Source: Howell, J. W. (2017) "The survival of the US dual class share structure", *Journal of Corporate Finance*, Volume No. 44, pp. 440-450.

DCS structures have been used extensively across a range of industries in the US. Figure 1 shows that 24 industries had more than 6% of the listed companies adopting DCS structures in 2010; and out of 44 industries of the listed companies in the US, only 6 did not have companies with DCS structures. Traditional industries such as machinery, retail and agriculture had 6% to 8% of companies with DCS structures. Companies in communications and printing and publishing industries adopted DCS structures most extensively (26.58% and 22.64% respectively). This shows the use of DCS structures is highly correlated with industry characteristics. The more information- and electronic-related an industry was, or the more a company required an organisational structure that conforms to the characteristics of the new economy, and the more receptive its investors were to DCS structures.

³ Howell, J. W. (2017) "The survival of the US dual class share structure", *Journal of Corporate Finance*, Volume No. 44, pp. 440-450.

Figure 1. Percentage of US listed companies with DCS structures (more than 6%) in different industries (2010)



Source: Arugaslan, O., Cook, D. O., & Kieschnick, R. (2010) "On the decision to go public with dual class stock", *Journal of Corporate Finance*, Volume No. 16(2), pp.170-181.

1.2 Application of WVR structures in other countries

Dual-class share issuance fell in the UK in mid-1960s due to the widespread institutional participation in stock investment and the resultant rising demand for high corporate governance standards and shareholder protection, but the trend reversed in the 1990s. Table 2 shows that 23.9% of UK companies adopted DCS structures in 1996. Unlike the US, the UK currently allows only some sections of its market to list companies with a DCS structure. For Premium Listing (a section of the UK Main Board) which has stricter listing requirements, issuers have to comply with super-equivalent rules on information disclosure. For example, the listing applicant must be able to instil investor confidence by demonstrating an independent operation, a three-year track record with revenue, sufficient operating capital and a financial statement with unqualified opinions. Rules for Standard Listing (the other section of the UK Main Board) mainly apply to stocks, depositary receipts and bonds, and adopt the minimum requirements of the European Union (EU) rather than the UK's super-equivalent rules. The UK listing rules amended in May 2014 provide that the listing regime for WVR only applies to Standard Listing.

In Singapore, DCS structures were at one time prohibited. According to Section 64(1) of the Company Act of Singapore, one ordinary share shall have one corresponding voting right with the exception of management shares issued by newspaper companies under the Newspaper and Printing Presses Act. In 2011, regulators amended the act by abolishing the restriction that one share could only confer one voting right and allowing public companies to issue WVR shares. In 2016, the Listings Advisory Committee suggested the Singapore Exchange (SGX) accept dual-class shares with appropriate protective measures to contain their risks. On 28 March 2018, SGX launched a second-round of market consultation on DCS structures, including seeking opinions on the consideration of the business models of DCS companies,

event-based sunset clauses and whether sophisticated investors have participated in the company.

Dual-class or multiple-class share structures are being used extensively on a global basis. Thirty out of the world's 46 largest national stock markets have listed companies that are adopting or had adopted a DCS structure⁴. European countries including Finland, Sweden, France and Ireland, in particular, have extensively adopted such structures (see Table 2). These countries, when introducing DCS structures, have also enhanced their corresponding shareholder protection measures to promote the market's healthy development. As stated in the Organisation for Economic Cooperation and Development (OECD)'s principles of corporate governance, all investors should be able to obtain information about the rights attached to all series and classes of shares of a company before they purchase any shares of the company; and any changes in economic or voting rights should be subject to approval by shareholders of those classes of shares which are negatively affected, to ensure equitable treatment of all shareholders. Whether dual-class or multiple-class share structures should be accepted, therefore, depends to a certain extent on the investment knowledge of investors, the adequacy of information disclosure and the related control mechanisms. These are discussed in detail below.

Country	Percentage	As of end of the year
Sweden	66.10%	1998
Switzerland	51.20%	1999
Italy	41.40%	1996
Finland	37.60%	1999
Ireland	28.10%	1999
UK	23.90%	1996
Australia	23.30%	1999
Germany	17.60%	1996
Norway	13.20%	1998
Canada	10.20%	1998
US	6.10%	2002
France	2.60%	1996

Source: Howell, J. W. (2017) "The survival of the US dual class share structure", *Journal of Corporate Finance*, Volume No. 44, pp. 440-450.

⁴ Nenova, T. (2003) "The value of corporate voting rights and control: a cross-country analysis". *Journal of Financial Economics*, 2003, Volume No. 68, pp. 325-351.

2. HOW DO WVR STRUCTURES BENEFIT COMPANIES?

The primary concern about adopting a WVR structure is the separation of management control and cash-flow rights ownership under such a structure. With superior voting rights, management may pursue personal gains not in the best interest of the company, giving rise to unfairness and aggravating the agency problem. Possible deeds include management's quest for private interest, excessive wages and fringe benefits, and their irresponsibility towards the company's major decisions⁵.

WVR structures (or DCS structures) may also reduce management's accountability to shareholders. As most shareholders are holding inferior voting rights, they do not have the power to change the management even if it is performing poorly. It is also impossible for shareholders to accept a takeover offer that is opposed by the founders or management. That should explain why DCS structures are not preferred by many investors (especially institutional investors)⁶.

However, a DCS structure is critical to a start-up's long-term development, especially if it is an innovative technology company with substantial initial investment, many uncertainties and high growth potential. This is explained below.

(1) DCS structure helps an innovative company to build its long-term value

With professional expertise and industry judgement, founders of innovative technology companies and their teams can make quick decisions in response to industry changes and high uncertainties in the external environment. This would significantly impact their companies' development. A DCS structure allows a founder to control a company through superior voting rights and focus on a company's long-term gain without being distracted by short-term share price movements. Therefore, DCS structures are vital to the company's implementation of its business model and long-term strategic planning.

Take the example of Facebook's acquisition of WhatsApp in February 2014. It took only 11 days for Facebook to take over the mobile social application, paying US\$19 billion for this company with only 50+ staff members. The majority of market practitioners, including investors, considered the deal overpriced and not beneficial. Their pessimism caused a sharp plunge in Facebook's share price the day after the acquisition, diving down the company's market value by more than US\$3 billion. Facebook, however, believed that WhatsApp, with its user coverage exceeding 90% in a number of countries/regions, would give it access to billions of active social media users.. The deal would also bring in WhatsApp's brightest minds, removing a potential competitor and overcome Facebook's weakness in mobile social media platforms. The DCS structure, to a certain extent, allows Facebook's management to evade market pressure for short-term gains and to make the best decision for the company's long-term development, to expectedly generate sustainable investment returns to small and medium-sized investors. Within one year after the acquisition, the Facebook stock reported a return that surpassed that of Google and the Nasdaq index. In almost three years after the acquisition, the cumulative return on the Facebook stock exceeded that of Google and the Nasdaq index⁷. The case demonstrates that DCS structures is conducive to the decision-making process of innovative companies for increasing the company's long-term value.

⁵ Howell, J. W. (2010) *The dual class stock structure in the United States*.

⁶ Jarrell, G. A., & Poulsen, A. B. (1988) "Dual-class recapitalizations as antitakeover mechanisms: The recent evidence", *Journal of Financial Economics*, Volume No. 20, pp. 129-152.

⁷ Regarding the case of Facebook, see: Li Haiying, Li Shuanghai & Bi Xiaofang (2017) 《雙重股權結構下的中小投資者利益保護——基於 Facebook 收購 WhatsApp 的案例研究》("Protection of Small and Medium-Sized Investors under Dual-Class Share Structure: A Case Study of Facebook's Acquisition of WhatsApp"), *China Industrial Economics*, 2017, Volume No. 1.

(2) A DCS structure effectively incentivises the founders to instill the company with greater innovation and more human capital

Emerging companies are characterised by their ability to innovate, which to a large extent depends on the founders' creativity, their spiritual appeal and their insights on industry trends. Any change in management might deprive the founders of returns on their intellectual property and human capital investment. That would make it impossible for biomedical companies with long cycles and new-economy companies that require sophisticated expertise to accomplish their knowledge build-up and innovation. Founders take more risks than external shareholders in pursuing investment objectives, resources and corporate development. A DCS structure is in essence more like an incentive mechanism. By protecting the interests of the founders, it helps the founders focus on continuous innovation, enhances the sense of belonging and cohesion within the company and enables the founders' team to create bigger values for the company⁸.

(3) A DCS structure forestalls hostile takeover attempts

A hostile takeover generally refers to the acquisition of equity ownership in a target company without the consent of the target company's board of directors or without prior negotiation with existing shareholders of the target company, followed by a change of the target company's management and a takeover of the company's operational control. A DCS structure confers critical trading rights on shareholders with superior voting rights. This means that a bidder who successfully instigates a hostile takeover and obtains ordinary shares would still be unable to acquire sufficient decision making power to control a company or change its management. A company that adopts a DCS structure is unlikely to be the target of a hostile takeover attempt. That is why family businesses generally prefer these share structures.

(4) A DCS structure may be seen as a self-protective measure taken by start-ups to evade market short-term behaviour given the over-concentration of institutional investors in the financial market

Studies⁹ show that primary voting rights are mostly held by fund managers who manage other people's capital. These parties or institutional investors are generally motivated by short-term gains and are concerned more about the short-term movements of share prices. Excessive "financialisation" changes the nature of equity investment — hordes of institutional investors who care for returns on investment dominate the stock market in place of long-term investors that focus on a company's long-term healthy development. DCS structures are a solution to help evade the negative impact of such problems on the company.

⁸ He, L. (2008) "Do founders matter? A study of executive compensation, governance structure and firm performance", *Journal of Business Venturing*, Volume No. 23(3), pp. 257-279.

⁹ David Berger. (2018) *Why Dual-Class Stock: A Brief Response to Commissioners Jackson and Stein*, Wilson Sonsini Goodrich & Rosati, 22 February 2018.

(5) According to empirical studies, the adoption of a DCS structure led to improved corporate values and reduced agency costs¹⁰

For example, Dimitrov and Jain (2006)¹¹, based on a sample of 176 US companies, found that a shift to a DCS structure from a single-class share structure resulted in an impressive 23.11% return. For companies which newly issued shares with low voting rights, the return was even greater. Jordan, Liu and Wu (2014)¹² found that companies with DCS structures paid more cash dividends than companies that adopt a single-class share structure, and regular dividend payouts were higher than special dividends and repurchases. This indicates that despite the adoption of DCS structures, such companies did not neglect the interests of external shareholders but fulfilled their undertaking by paying more dividends. Howell (2017)¹³ studied the survival time of companies with DCS structures, and concluded that DCS structures are essential to the survival of an innovative company since they allow a company to deliver good results by protecting its share ownership. Based on the statistics of global Internet companies listed in the US, Shi Xiaojun and others (2017)¹⁴ found that DCS structures significantly motivated hi-tech companies to innovate. This was especially the case where such companies were in developed countries with good external check-and-balance mechanisms and where the founders were the primary administrators.

3. ENHANCEMENT OF REGULATION OF COMPANIES WITH DCS STRUCTURES

Certainly, there is still much debate in theoretical and empirical studies as to whether a DCS structure incurs higher agency costs than a single-class share structure and is therefore less conducive to the protection of shareholders' rights. Different samples and different development cycles of the companies under study will give different results.

While DCS structures could motivate founders and management and enhance a company's long-term value, they may also undermine internal governance, worsen asymmetric information and the agency problem and therefore reduce a company's value. So how can a company with a DCS structure effectively monitor its controlling shareholders? Different control mechanisms have been implemented worldwide, as discussed in the following sub-sections.

3.1 Imposing appropriate restrictions on the exercise of superior voting rights

Restrictions are mainly in the following two ways:

¹⁰ Agency costs result from the separation of ownership and operational control. While owners and shareholders want the management to run a company to maximize shareholders' returns, the management who are not shareholders or who holds only a small percentage of shares often run the company based on their own interests. For example, they may obtain additional benefits through in-service consumption at the expense of shareholders. The information inequality between shareholders and management is also substantial. Management, as front-line operator with knowledge of the company's cash flows, is more informed than shareholders. It is not easy for shareholders to determine whether management's actions meet the objective of maximizing shareholders' returns.

¹¹ Dimitrov, V. & Jain, P. C. (2006). "Recapitalization of one class of common stock into dual-class: Growth and long-run stock returns", *Journal of Corporate Finance*, Volume No. 12(2), pp. 342-366.

¹² Jordan, B. D., Liu, M. H., & Wu, Q. (2014) "Corporate payout policy in dual-class firms", *Journal of Corporate Finance*, Volume No.26, pp. 1-19.

¹³ Howell, J. W. (2017). "The survival of the US dual class share structure", *Journal of Corporate Finance*, Volume No. 44, pp. 440-450.

¹⁴ Shi Xiaojun & Wang Aoren. (2017) 〈獨特公司治理機制對企業創新的影響 — 來自互聯網公司雙層股權制的全球證據〉 ("Impact of the Specialty of Corporate Governance on Innovation: Global Evidence from the Dual-class Structure of Internet Firms"), *Economic Research Journal*, Volume No. 1, pp.149-164.

One way is to restrict the difference in voting rights — the voting rights attached to superior voting rights shares are capped at no more than ten times of the voting rights of the same number of ordinary shares. Although the US does not set a limit to this ratio of voting rights, the international practice is to restrict the voting right of one superior voting rights share to be no more than ten times the voting right of an ordinary share (a WVR ratio of 10:1). This ratio has been adopted by companies like Google, Facebook and Baidu (Table 3 sets out the WVR ratio and structure used by Mainland companies listed in the US). Other regions like Sweden and other European exchanges also require each share with superior voting rights to have a maximum voting right equal to that of 10 ordinary shares. When SGX launched its consultation on the introduction of dual-class shares, it also proposed that each multiple-vote share's number of votes is to be capped at 10.

Company	IPO date	Business	Share structure	Controlling shareholders
Baidu, Inc.	04/08/2005	Internet search engine	Class A (listed): 1 vote Class B (non-listed): 10 votes	Held by founders: • 15.9% of equity; • 53.5% of voting rights
Mindray Medical International Ltd	25/09/2006	Development, manufacturing and marketing of medical devices worldwide	Class A (listed): 1 vote Class B (non-listed): 5 votes	Collectively held by all directors and executives: • 28.8% of equity; • 64.2% of voting rights
Shanda Games Ltd	24/09/2009	Development and operation of online games	Class A (listed): 1 vote Class B (non-listed): 10 votes	Held by Shanda International: • 70.8% of equity; • 96.0% of voting rights
eCommerce China Dangdang Inc	07/12/2010	Online B2C commerce platform	Class A (listed): 1 vote Class B (non-listed): 10 votes	Held by founders: • 35.3% of equity; • 83.3% of voting rights
Qihoo 360 Technology Co. Limited	29/03/2011	Internet and mobile security products	Class A (listed): 1 vote Class B (non-listed): 5 votes	Held collectively by all directors and executives (including two co-founders): • 40.4% of equity; • 64.9% of voting rights
Phoenix New Media Limited	12/05/2011	Media content provider	Class A (listed): 1 vote Class B (non-listed): 1.3 votes	Held by Phoenix Satellite TV: • 52.8% of equity; • 59.2% of voting rights
Youku Tudou Inc	Youku and Tudou merged on 23/08/2012	Online video	Class A (listed): 1 vote Class B (non-listed): 4 votes	Held by founders: • 21.3% of equity; • 51.5% of voting rights
LightInTheBox Holding Co., Ltd	06/06/2013	Global Internet retailer	One class of shares entitles the holder to one vote per share on most matters. Founders have three votes per share for voting on a change in control.	On change-of-control matters, founders have 43.0% of the voting rights with a holding of 20.1% in equity.

Company	IPO date	Business	Share structure	Controlling shareholders
Autohome Inc.	10/12/2013	Online automobile sales	Class A (listed): one vote Class B (unlisted): one vote per share but carries up to 51% of voting rights if the controller's equity holding in the company is below 51% but above 39.3%	Held by Telstra: • 65.4% of equity; • 65.4% of voting rights
iKang Healthcare Group, Inc.	08/04/2014	Private healthcare provider	Class A (listed): 1 vote Class C (non-listed): 15 votes	Held by founders: • 14.3% of equity; and • 35.9% of voting rights
JD.com	21/05/2014	Online direct sales	Class A (listed): 1 vote Class B (non-listed): 20 votes	Held by founders: • 20.7% of equity; • 83.7% of voting rights

Source: HKEX's WVR Concept Paper published in August 2014

The second way is that, when designing its structure, a company should set out clearly the applicable scope of superior voting rights. On major matters involving the corporate operation and management by the company or the controlling shareholders (e.g. hostile takeovers), strategic decisions (e.g. corporate culture or business philosophy), national security and public interest, etc., the founders and certain shareholders can have additional voting rights. However, on matters directly relating to the legitimate personal interests of external investors (e.g. connected transactions or external guarantees or other major use of the company's properties, mandatory disclosure of core information, nomination of supervisors or independent directors etc.), the difference between superior voting rights and ordinary voting rights should be reduced or restored to one vote per share¹⁵. This enables ordinary shareholders to have a greater say in making decisions on major transactions and connected transactions. This will conform to the original purpose of a DCS structure, i.e. preventing a dilution of control while reinstating shareholders' oversight role over the company.

3.2 Clear exit and transfer mechanisms for superior voting rights

One automatically triggered mechanism is that when there is a transfer of the shares with superior voting rights, these shares will be automatically restored back into shares with ordinary voting rights. Ordinary shareholders accept the adoption of a WVR structure mainly because of their trust in the founders, including in their ability to innovate and managerial capability. When the founders or controlling shareholders leave the company or transfer their shares to a third party, it should be considered to go back to the original voting rights ratio as the company's control and operation has changed and the conditions for granting WVR no longer exist.

In practice, different countries have different restrictions on the transfer of superior voting rights. In the US, superior voting rights are generally not tradable. Shares with superior voting rights are automatically converted into ordinary shares of one vote per share when they are transferred. The Toronto Stock Exchange in Canada requires companies with WVR structures to provide coat-tail protection to external shareholders, ensuring that bidders for shares with

¹⁵ Cao Yang. (2017) *Dual-class shares in China — Introduction and System* (《中國雙層股權結構的引入與規制》), December 2017.

superior voting rights will also make an offer to holders of ordinary shares under the same conditions. The requirement will prevent internal shareholders of a company from selling their control in the company at a high premium at the expense of other shareholders. SGX proposed in its recent consultation paper that superior voting rights have to be converted into ordinary shares under specific conditions such as when a shareholder resigns as director or offloads his shares.

“Sunset clause” is another possible mechanism. Studies show that shares of companies with a DCS structure were traded at a premium shortly after their IPO, but such premium would disappear as the company became mature. This reflected that the costs and benefits of the DCS structure would evolve over the lifetime of a company — at the early stage, the protection of the founders’ control is beneficial because the ability to innovate is vital to a company’s competitiveness; but the effectiveness of DCS structures would need to be reconsidered when the company reaches a certain point in time (usually known as “sunset”)¹⁶. Therefore, a company might impose certain restrictions on the conditions for the continued adoption of its DCS structure when it goes public, to reflect its management’s willingness to return the voting rights to shareholders in some day.

Sunset clauses are in practice not common. Table 4 sets out the use of sunset clauses in some companies. Sunset clauses lay down the conditions for the restoration of superior voting rights into ordinary voting rights — either a minimum shareholding ratio for the founders, or a time limit (a certain number of years after listing) for the WVR structure.

Company	Year of IPO	Triggers of sunset clauses
Groupon	2011	5 years after listing (became one vote per share in 2016)
Kayak Software	2012	7 years after listing
Yelp	2012	7 years or superclass falls below 10% of outstanding common
Workday	2012	20 years or superclass falls below 9% of outstanding common
Apptio	2016	7 years or superclass falls below 25% of outstanding common
Nutanix	2016	17 years after listing
Hamilton Lane	2017	10 years or founders and employees hold less than 25% of voting power
MuleSoft	2017	5 years after listing or when shares with superior voting rights are less than 15% of ordinary shares

Source: Council of Institutional Investors.

3.3 Enhancing corporate governance and the parallel use of internal and external controls

The agency problem of DCS structures can be addressed by internal measures, such as compulsory information disclose, including the disclosure of the WVR structure adopted and the associated risks. Others include the disclosure of the identities of WVR beneficiaries and the set up of incentives and penalty systems for controlling shareholders.

External control mechanisms can also impose control over corporate management. IPO pricing, for example, can be a market-based penalty mechanism. If investors perceive an agency problem in the management, the IPO price would have a big discount to compensate investors for their potential loss. The market would also drive the companies to select the appropriate share structures. Howell (2017)¹⁷ found that 61 US companies with DCS

¹⁶ Robert J. Jackson. (2018) *Perpetual Dual-Class Stock: The Case Against Corporate Royalty*, 15 February 2018.

¹⁷ Howell, J. W. (2017) “The survival of the US dual class share structure”, *Journal of Corporate Finance*, Volume No. 44, pp. 440-450.

structures had returned to a one-share-one-vote model, with positive market response. This reflects the capability of the market in exercising self-control.

DCS structures have pros and cons. On the one hand, the strategic vision and entrepreneurial spirit of the controlling founders drive a company's long-term development. On the other hand, their superior voting power impairs the interests of external shareholders and public investors. With good internal control and a flexible and suitable legal framework, a company can make the best share structure arrangement based on its own circumstances. A DCS structure will then be able to effectively deliver its comparative advantages.

4. APPLICATION AND DISCUSSION OF WVR IN HONG KONG

In the past, five companies in Hong Kong had adopted DCS structures. Some of these have privatised or withdrawn their listings. Swire Pacific is currently the only listed company in Hong Kong that has class B shares in issue¹⁸. Hong Kong had banned the listing of companies with WVR in 1987 and adopted a listing regime that only accepted one vote per share — an arrangement under which each and every share enjoys the same voting rights to ensure proportionality between voting rights and equity holding, and equal treatment to all shareholders.

In 2004, the trend of listing with WVR structures began among innovative and technology companies, exemplified by Google in the US. Except for Twitter, most US technology companies were listed with a DCS structure. A considerable number of China-concept stocks listed in the US have a similar share structure. As of June 2017, 33 out of 116 (28%) Mainland companies listed in the US used WVR structures. Their market capitalisation reached US\$561 billion, representing 84% of the market value of all Mainland companies listed in the US. Eighteen out of the 33 (55%, accounting for 84% of the market capitalisation) were innovative technology companies¹⁹. The US's embrace of DCS structures encouraged other countries to follow. Countries like the UK, Germany and Canada introduced WVR structures through introducing new listing boards or segmenting a listing board to serve the purpose.

In Hong Kong, there had been an extensive discussion of WVR structures in 2014 in response to Alibaba's listing demand. In 2017, HKEX launched a market consultation on the proposed New Board to explore new possibilities for WVR structures. In the consultation conclusions on DCS structures published in April 2018, measures were proposed to limit and control DCS structures. These include requiring applicants to possess certain characteristics before they can list shares with WVR. HKEX will also reserve the right to reject an applicant on suitability grounds if its WVR structure is an extreme case of non-conformance with governance norms (for example if the ordinary shares carry no voting rights at all). HKEX also put forward detailed investor protection measures to be applied to WVR companies after their listing. These include measures that restrict the power of WVR, protect the voting rights of non-WVR shareholders, and strengthen corporate governance and disclosure requirements. Issuers with WVR structures will be differentiated from others through a unique stock marker "W" after their stock name. In addition, WVR beneficiaries must be directors of the issuers to ensure they operate the companies with the obligations of a director as set out under relevant laws and regulations. The WVR attached to a WVR beneficiary's shares will lapse once the WVR beneficiary transfers the WVR shares to another person, or dies or is incapacitated, or ceases to be a director. WVR are therefore subject to natural sunset clauses and will not exist indefinitely²⁰.

¹⁸ Swire's class B shares have the same voting rights as class A shares, but their value is 1/5 that of class A shares.

¹⁹ See HKEX's *Concept Paper on New Board*, June 2017, on the HKEX website.

²⁰ See HKEX's consultation conclusions, April 2018, published on the HKEX website

Through its WVR consultation in June 2015 and the New Board consultation in 2017, HKEX found that only a small number of respondents considered a mechanism for class actions a prerequisite for allowing WVR shares to be listed in Hong Kong. Market responses also indicated that most class actions in the US involved disclosure issues rather than the potential abuse of control under a DCS structure. Study findings have demonstrated that both the US and Hong Kong place a high priority on investor protection but achieve this goal in different ways. The US regime places greater emphasis on the ease by which shareholders can take private action to achieve redress for damages after abuse has occurred. The associated judicial costs involved are lower than in Hong Kong. In Hong Kong, greater reliance is placed on the Listing Rules to require disclosure and prevent the abuse of control before it occurs, and post-event legal action, involving listed companies, is primarily carried out on shareholders' behalf by the Securities and Futures Commission (SFC)²¹.

As DCS structures continue to evolve and develop, non-typical DCS structures similar to Alibaba's "Chinese partnership" or DCS structures with Chinese characteristics may emerge. More mandatory disclosure or introducing whistle-blowing programmes (as the US has been doing) will keep these companies and their de facto controllers and management in check, and prevent fraud and insider dealing.

When HKEX planned to reform its listing regime in 2016, its major objective was to remove listing hurdles for high-growth companies invested by venture capital funds or pre-profit biomedical firms in response to the global rise of the new-economy sector, enabling them to list by using WVR structures. The listing of such international and Mainland companies in Hong Kong would create immense opportunities for Hong Kong and solidify its position as a global financial centre. Although "one-share-one-vote" has contributed fundamentally to investor protection in Hong Kong over the years, enterprise innovation and economic growth should not be constrained by the listing structure as market systems are further enhanced. Listing structures should be designed with flexibility and their effectiveness should be tested by the market.

5. LISTING REFORM FOR BIOMEDICAL SECTOR AND INTERNATIONAL EXPERIENCE

5.1 Characteristics and financing needs of biomedical companies

The Mainland's healthcare and medical industry is now in a golden era as the aging population and increases in disposable income drive up medical and healthcare demand. The Mainland's pharmaceutical market expanded at a compound annual growth rate of 15% between 2011 and 2016²². In the Healthy China 2030 Planning Outline released in 2016, the development of China with a healthy population became a national strategy. Mainland healthcare services were estimated to reach RMB 16 trillion by 2030²³. With the rapid development of genetic engineering and the extensive use of biotechnology in medical treatment, biomedicine is gradually becoming the fastest growing and most technology-intensive industry in the healthcare sector. There are now more than 900 biopharmaceuticals under research at the world's top 18 pharmaceutical companies. With a market size projected to reach US\$326 billion in 2022 from US\$202 billion in 2016²⁴, the potential of the industry is tremendous.

Compared to traditional industries, the biomedical industry is characterised by substantial investment, high output, high risk and is highly technology-intensive. A drug has to go through clinical trials at multiple stages in its production cycle before launch, where it is tested for

²¹ See HKEX's *Weighted Voting Rights Concept Paper*, August 2014, published on the HKEX website.

²² Source: McKinsey. 《中國醫院藥品報告：深度洞察》，August 2017.

²³ See the State Council's *Healthy China 2030 Planning Outline* (《健康中國 2030 規劃綱要》), October 2016.

²⁴ Source: Evaluate Pharma.

safety, curative effects, hazards and adverse reactions. It also needs to be approved by regulators before it is released to the market. According to a report on clinical drug development success rates issued by the US' Biotechnology Innovation Organisation (BIO), the likelihood of a drug candidate in Phase I clinical trials receiving final approval by the US FDA²⁵ is merely 10%. Most candidates fail to advance from Phase II to Phase III, rendering a failure in the entire research and development (R&D) process. According to the experience of some large overseas biomedical companies, investing in a biomedical company has been long-term, costly and high risky. It required an average funding of US\$250 million, but a product took about eight to ten years from concept to launch, with an average annual loss of US\$30 million²⁶.

Owing to the above features, equity financing (rather than debt financing) has become an important mode of financing for biomedical companies in their growth stage. The financial characteristics set out below (without profit for a long time before and after listing) are unique to biomedical start-ups. These together with the high level of risks involved call for appropriate listing criteria to facilitate equity financing by these companies, thereby promoting the long-term development of the biomedical sector.

Firstly, biomedical companies tend to seek financing from venture capital and through equity financing

Biomedical companies usually seek venture capital to meet their financing needs in their early days. Before the successful development of a drug and in the early stage of market mining for the product, a medical company may find it difficult to obtain funding from banks as it does not have stable operating revenue or fixed assets of a considerable scale. But once there are profits, they will often exhibit exponential growth. This financial and growth pattern is in line with the investment expectation of venture capitalists. After a drug is basically formed, financing by public offerings begins, which helps lower the company's financing costs. Studies show that private equity financing (and venture capital investment), corporate cooperation financing, securities market financing and other ways of financing (government projects, angel funds, etc.) account for 24%, 22%, 54% and 0.2% respectively of all funds raised by a biomedical R&D company²⁷. It shows that in the middle and later stage of a biomedical company's development, financing via the securities market is the most crucial financing channel other than private equity financing (and venture capital investment) and corporate cooperation financing. Financing by different methods at different stages of development of a biomedical company would ensure effective deployment of capital.

Secondly, biomedical companies will suffer a long period of no profit before and after listing owing to the R&D nature of biomedical products

A long period of no profit before and after a biomedical company's listing is a natural outcome of the fact that obtaining patent for a drug takes a long time. Generally, generic drugs take 3-5 years of R&D and new drugs 8-10 years. Therefore, a biomedical company has to endure a considerable long period of time before and after listing during which it cannot manufacture any products. Even if a product is launched to the market, R&D investment may still be on the rise and no profit is generated. Studies²⁸ show that during 2000-2014, 1,019 out of 4,900 companies that applied to list in the US had no profit in the year prior to their application for

²⁵ US Food and Drug Administration (FDA) is the highest law enforcement agency authorised by the US Congress that specialises in food and drug management.

²⁶ Source: 中國外商投資企業協會藥品研製和開發行業委員會, et. al. 《推動臨床研究體系設計與實施·深化醫藥創新生態系統構建》, December 2017.

²⁷ Source: Wang Xiaoli (2009) 《中小研發型生物醫藥企業發展及與資本市場》 (*Development of small and medium-sized biomedical R&D companies and the capital market*), 1 June 2009.

²⁸ Source: Liu Yang & Chen Zheng. (2015) 〈美股未盈利企業上市及其運行機制分析〉 (“Analysis of listings of pre-profit US listed companies and their operations”), *Securities Market Herald*, February 2015.

listing, about 9.81% of which are biomedical companies. Their number was second only to the Internet industry among companies that went public without profit. Unlike companies that fulfil general main board listing requirements for profit and positive turnover, many biomedical companies of a considerable size did not have a profit until 10 years after listing. Taking MannKind as an example, which develops insulin and anti-tumor drugs and was listed in 2004. Between 2002 and 2004, the company had no revenue while R&D investment and losses kept rising. In June 2014, the company still had no substantive revenue but there was major progress in its R&D on new drugs. Introducing special listing requirements to cater for the sector's financing needs, together with provisions for risk disclosure and investor protection, is therefore crucial to help biomedical companies grow big and turn losses into profits, fulfilling a multi-layer capital market platform's role to support the industry's development. This will allow biomedical firms to develop their potential so that they can achieve explosive growth, once profit is generated.

Thirdly, DCS structures suit the industry's operation model and incentivise long-term R&D investment

The exclusivity of drug patents means founders are decisive in the growth of a biomedical company. However, from a project's launch to the final clinical trial, a biomedical company has to face a long investment cycle and needs substantial financial backing. Founders' holdings in a company may drop to below 10% after a series of fundraising. To maintain control over a R&D project ensuring that it will not deviate from directions set by the founders while seeking resources for development, it is important that a biomedical company has in place appropriate equity arrangements and incentives. For this purpose, WVR structures are a highly effective arrangement. It can allow founders to recover their early investment, motivate the R&D team to continue on its work, and enable a company to meet the listing requirements for biomedical companies.

5.2 Listing arrangements for biomedical firms worldwide

Securities market rules applicable to the listing of biotech companies have been developed in major markets over the world. Nasdaq in the US is the primary market where global biomedical companies are listed, attracting multiple number of Mainland biomedical companies to list in recent years. According to Wind database, these were 12 Mainland biomedical companies listed in the US by the end of 2017, with a total market value of US\$16.2 billion. Hutchison China MediTech and BGNE shares have seen their values rocketed by 2.5 times and 5.6 times compared to their IPO price²⁹. The price gains facilitate refinancing which in turn support further product development and commercialisation.

²⁹ Source: Wind.

Table 5. Some Chinese biomedical companies listed overseas		
Company	IPO year	Business
BGNE	2016	Focusing on innovative molecular-targeted and immunotherapy drugs, listed on Nasdaq in February 2016.
Hutchison China MediTech	2016	Focusing on developing innovative therapies for tumors and auto-immune diseases. The company listed on London Stock Exchange's (LSE) AIM in May 2006 and secondary listed on Nasdaq in March 2016.
Wuxi Biologics	2017	Originated from Wuxi Pharma Tech, it is China's largest biologics R&D service provider. It was listed on the Stock Exchange of Hong Kong on 13 June 2017.
Zai Lab	2017	Engaged in R&D on drugs for tumors, auto-immune and infectious diseases, with 52 employees. It was listed on Nasdaq in September 2017.

Source: Public information.

Amendments of main board listing rules continue in other stock exchanges as well to promote biotech industry development. Since 1993, the LSE undertook a series of system reforms to its main board and launched the Alternative Investment Market (AIM) in 1995. This boosted the UK's biotech industry development and turned it into one of the world's most developed and fastest growing life sciences markets, making the UK a biotech powerhouse second only to the US. A large pool of world-class biomedical experts were attracted to the UK, solidifying the country's biomedical R&D capabilities and building up biotech assessment expertise necessary for biotech capital formation. In 2014, the UK topped Europe in terms of the number and value of venture capital investment in the biotech industry. In 2016, a total of 11 medical and health care companies were newly listed on the main board and AIM of LSE. Among them was the biomedical company, ConvaTec, which raised GBP 1,465 million — the largest IPO by a European medical company in nearly two decades³⁰.

In attempt to solve the financing needs of high-growth technology companies, the Frankfurt Stock Exchange (FWBE) had established outside its main board a new market (Neuer Markt) which had lower listing thresholds and disclosure requirements. In 2003, the FWB sought to reshape the stock market into segments³¹ that adopt different disclosure standards. In 2005, a junior board for small and medium-sized enterprises (SMEs) was set up. Such innovative moves facilitated biotech R&D and corporate development, and accelerated Germany's biotech industry development. Germany now leads other European countries in new drug R&D, accounting for over 40% of drugs produced in Europe³². On 19 January 2018, the FWB listed its first Mainland biotech company³³.

5.3 Hong Kong's listing regime reform will boost China's biomedical sector

Unlike in the US and Europe, the biotech industry in Asia is in its infancy. There are few large biopharmaceutical companies in the region while the world's top 20 medical companies (such as Merck, Johnson & Johnson, Roche, Novartis) are in Europe and the US. Asia has no world-class biotech R&D centres such as the Sanger Institute in Cambridge in the UK, which can commercialise biomedical findings. Hence, biotech R&D clusters cannot easily be formed in

³⁰ Source: Beyond Laboratory.

³¹ This included splitting the market into two independent boards (Prime Standard and General Standard) and creating new industry sector indices. Only issuers listed on Prime Standard are eligible for admission into FWB indices; enterprises of high market capitalisation and turnover value are included in DAX; SMEs of traditional industries are included in MDAX and SDAX; SMEs of technology industries are included in TecDAX.

³² Source: 〈2017-2022 年中國醫藥工業行業市場行情動態與投資戰略研究報告〉(“Research Report on China's Medical Industry Development and Investment Strategy 2017-2022”), *Zhiyan*.

³³ The company is Beroni Group Ltd.

Asia to attract knowledge and talents. Asian investors and analysts lack adequate experience and expertise to assess pharmaceutical companies.

But there is an upside. China's biological and life health industry is taking off quickly with increasing output and improving capabilities. Biomedical industry clusters centred in the Yangtze River Delta, Pearl River Delta and Bohai region are being formed. Shenzhen's biomedical industry had a value exceeding RMB 200 billion in 2016. There are now 319 such innovative companies in the city, including BGI, Mindray and Beike Biotech³⁴.

Hong Kong amended its Listing Rules to address the needs of biomedical and other new-economy companies. Such development will stimulate the development of the biotech industry in the following ways:

Firstly, investors in the Hong Kong stock market are believed to be more familiar with relevant Mainland laws and market conditions than Nasdaq investors, and would be more experienced in assessing the risks of investing in Mainland biomedical companies. Mainland investors can also buy biotech stocks listed in Hong Kong via Stock Connect. Both factors would contribute to the formation of a sound investor base and a financing and investment environment to support the growth of vibrant biotech companies of good potential.

Secondly, the new Listing Rules recognise China Food and Drug Administration (CFDA) as a regulator qualified to assess biotech products — putting it on par with the US' FDA and the European Medicine Agency (EMA), reflecting Hong Kong's recognition of Mainland drug standards. CFDA's drug review has substantially improved in efficiency and quality in the past two years, facilitating the approval and market acceptance of an increasing number of innovative and high-quality research projects. This is conducive to the use and promotion of Mainland standards in the international market.

Thirdly, the exit channel provided by the listing platform of HKEX may help attract more venture capital to the high-risk and high-return biotech field, accelerating the sector's development. According to ChinaBio's statistics for the period between 2015 and the first half of 2017, the amount of capital ploughed into the Mainland's biotech industry hit US\$12 billion, representing 27% of the total funds (US\$45 billion) raised by Mainland venture capital and private equity funds in the same period. No doubt, the availability of a new financing platform in Hong Kong for biomedical companies³⁵ will provide an exit channel for venture capital funds that have invested in such enterprises at pre-IPO stage. This will encourage more venture capital and private equity funds to invest in the biomedical field, and facilitate further fund raising by biomedical enterprises through public offerings to meet their needs as required for the progress of their clinical experiments and their latest corporate plans.

If R&D and innovative and technology companies as well as pre-profit biotech companies do not have access to the public capital market, venture capitalists will not readily provide them with substantial funding, and SMEs will find it difficult to establish strategic international relationships. This will reduce the evolution of innovative companies and the formation of industry clusters. Introducing appropriate listing criteria that suit the financial characteristics and investment risks of these companies in their start-up stage will therefore be of significant help to the industries' development. Given the importance of innovative, technology and biomedical companies in the national economy in the future, and the substantial R&D investment and long pre-profit cycle characteristic of such industries, introducing listing rules that suit their conditions will be crucial as these can direct more venture capital and private

³⁴ Source: 〈深圳生物產業規模超 2000 億元〉 (“Shenzhen's biotech industry value exceeds RMB 200 billion”), *China Economic Daily*, 31 March 2017.

³⁵ For the framework of the new platform, see *Consultation Conclusions to the Consultation Paper on a Listing Regime for Companies from Emerging and Innovative Sectors*, April 2018, published by HKEX on its website.

equity funds into the industries and companies, making it possible for the emergence of large innovative biotech companies, thereby stimulating the development of new-economy industries in the region, facilitating the upgrade of the regional economy and expanding its horizon. This is the kind of long-term positive effect that capital market reforms could have on the Hong Kong economy.

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