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Replicating Silicon Valley?

Law and Human Capital in the Making of China's Tech Startups

Li-Wen Lin*

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Abstract

The rise of China's tech companies in the global economy raises an urgent need to understand how China incubates its tech startups. China's tech startup ecosystem presents two puzzling legal arrangements for human capital in light of Silicon Valley's experience: the co-existence of enforceable noncompetes and the high-velocity labour market; the common use of stock options but with a buyback norm. This article delves into the peculiarities of China's legal and political institutions to resolve the legal puzzles. This article also speaks to a global policy debate about the replicability of Silicon Valley and the necessity of such replication. The Chinese experience offers opposite examples showing the replication complexity: replication yet with deformed practices and non-replication yet with similar outcomes. The findings suggest that there is unlikely a one-size-fits-all model for creating an innovation economy.

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Introduction

China is emerging as a global technology giant. It is home to more than a third of the world's high-tech unicorns (i.e. private companies with a valuation of at least one billion U.S. dollars), trailing closely the United States.¹ The country has the second largest share (15%) of the number of global startup hubs, with Beijing and Shanghai ranked among the top ten startup cities in the world.² The Chinese startup ecosystem has produced a growing number of the world's biggest tech companies, including Alibaba, Baidu and Tencent.³ More important than their sheer size is that Chinese tech firms are no longer merely gigantic copycats but innovative leaders in some cutting-edge areas such as mobile tech, facial and speech recognition.⁴ With the rising importance of Chinese tech companies and their global expansion, understanding how China incubates its tech startups is a pressing task for researchers and policymakers.

The common approach to assessing a startup ecosystem is to benchmark it against Silicon Valley, often viewed as a leading model of technology-led economic development. While China's startup ecosystem appears to share some key elements with Silicon Valley, its underlying configuration is more than meets the eyes. Legal explanations of Silicon Valley's success focus on the confluence of three areas of law: financial capital, intellectual property, and human capital. As to financial capital, Chinese startups, like their counterparts in Silicon Valley, tap into venture capital for financing. Yet, unlike Silicon Valley, the rapid growth of China's

¹ TechCrunch's unicorn list as of Oct 31, 2019 showed 178 of the 516 unicorns worldwide were in China. <<https://techcrunch.com/unicorn-leaderboard/>> accessed 2 November 2019.

² Center for American Entrepreneurship, 'Rise of Global Startup City: The New Map for Entrepreneurship and Venture Capital' <<https://startupsusa.org/global-startup-cities/report.pdf>> accessed 2 November 2019.

³ Mary Meeker, 'Internet Trends 2018 Report' <<https://techcrunch.com/2019/06/11/internet-trends-report-2019/>> accessed 2 November 2019.

⁴ Paul Mozur, 'China, Not Silicon Valley, Is Cutting Edge in Mobile Tech' *New York Times* <<https://www.nytimes.com/2016/08/03/technology/china-mobile-tech-innovation-silicon-valley.html>> accessed 2 November 2019; The Economist, 'China's Tech Industry Is Catching Up With Silicon Valley' <<https://www.economist.com/graphic-detail/2018/02/16/chinas-tech-industry-is-catching-up-with-silicon-valley>> accessed 2 November 2019.

venture capital market is attributable to government orchestration rather than market operation.⁵ As to intellectual property, the traditional explanation for Silicon Valley's success is associated with strong protection for intellectual capital, though American legal scholars recently have been debating whether strict intellectual property rights help innovation.⁶ By comparison, China is notorious for poor intellectual property protection. The rise of Chinese tech companies in a weak intellectual property law regime appears perplexing. A growing body of literature has attempted to explain away the China problem by suggesting that China has been significantly improving its intellectual property rights system and converging on the experiences of more economically developed countries in Asia.⁷ With respect to human capital, American legal scholars argue two legally complementary arrangements important for the rise of Silicon Valley: the unenforceability of covenants not to compete, which facilitates high job mobility and leads to regional knowledge sharing, and the widespread use of stock options, which provides high-powered incentives to tech workers.⁸ On its face, China's startup ecosystem is similar to Silicon Valley where job-hopping and equity compensation are very common for tech workers. However, this article shows that the underlying legal infrastructure for the high job turnover and the common use of employee equity compensation in China's tech ecosystem is strikingly different from that in Silicon Valley.

China's tech startup ecosystem presents two puzzles in light of Silicon Valley's experience. First, covenants not to compete are enforceable in China, yet China's tech ecosystem

⁵ Lin Lin, 'Engineering a Venture Capital Market: Lessons from China' (2017) 30 *Columbia Journal of Asian Law* 160.

⁶ Anupam Chander, 'How Law Made Silicon Valley' (2014) 63 *Emory Law Journal* 639; Aarthi Anand, "'Less is More': New Property Paradigm in the Information Age' (2012) 11 *Duke Law & Technology Review* 65.

⁷ Peter K. Yu, 'Intellectual Property, Economic Development, and the China Puzzle' in Daniel J. Gervais (ed), *Intellectual Property, Trade and Development: Strategies to Optimize Economic Development in a TRIPs Plus Era* (Oxford University Press 2007).

⁸ See discussion in Sections II and III.

presents a high-velocity labour market. Second, Chinese tech startups commonly compensate employees with stock options, but prior to liquidity events they routinely exercise their right to buy back departing employees' equity interests, which is virtually a taboo in Silicon Valley. The two puzzles cannot be resolved without delving into the peculiarities of China's legal and political institutions.

This article shows that actual judicial and corporate practices help mitigate the negative impact of enforceable noncompetes on labour mobility. Chinese courts take a cautious approach and Chinese tech unicorns rarely enforce noncompetes. Meanwhile, the buyback norm makes employee equity compensation similar to cash compensation. It may save employees from potential financial losses but deprive employees of using job-hopping to diversify their investment risks in startups. The buyback norm does not originate from intended exploitation of employees but has its deeper roots in China's complex political economy. The buyback norm is partly a compromised solution to problems arising from the state's strict control over foreign exchange, foreign investment and access to domestic and international capital markets.

This article not only elucidates the puzzling arrangements of China's tech ecosystem but also speaks to a broader policy debate about the replicability of Silicon Valley and the necessity of such replication. Today, the Silicon Valley model has "gone viral and global."⁹ Policymakers around the world have been enthusiastic to replicate Silicon Valley. Guidebooks and manuals on how to replicate Silicon Valley are copious. This article offers two opposite examples to illustrate the replication complexity: The common use of employee equity compensation but with a buyback norm illustrates a deformed replication whereas the co-existence of enforceable noncompetes and the high-velocity labour market exemplifies non-replication yet with similar

⁹ Michael Moe, *The Global Silicon Valley Handbook* (Grand Central Publishing 2017) 18.

outcomes. Copying a proven successful model like Silicon Valley appears a safe and efficient way for policymakers to build an innovation economy. However, policymakers should heed to the common warning in comparative law scholarship: A law transplanted from a foreign jurisdiction often dies or mutates rather than growing as its original.

This article proceeds as follows. Section I provides an overview of the development of China's tech startup system. Section II investigates the relationship between covenants not to compete and the mobile labour market in China's tech sector. Section III illustrates the institutional underpinnings of the buyback norm and the implications for employees' motivations. Section IV discusses the policy implications for the replicability debate of Silicon Valley.

I. The Landscape of China's Tech Startups: A Brief Overview

The startup ecosystem in China comprises various types of organizations including tech startups, supporting organizations (incubators and accelerators), funding organizations, research and knowledge institutes, and the government.

In the late 1970s, the State Scientific and Technological Commission (now the Ministry of Science and Technology, or MOST) began to explore strategies for high-tech development in China. After investigating and comparing Silicon Valley, Massachusetts Route 128 and some other regions, government officials were inclined to take Silicon Valley as the model for emulation.¹⁰ A series of policy experiments in the 1980s led to the launch of the so-called "Torch Program" in 1988, which planned to establish national high-tech zones. Since then, high-tech

¹⁰ Du Lei, 'A Historical Examination of the Establishment of the Zhongguancun Science and Technology Park' [Zhongguancun keji yuanqu chuangli de lishi kaocha] (2017) 9 CPC History Studies [zhonggong dangshi yanjiu] 53.

industrial parks have mushroomed nationwide. As of 2017, China had 156 national high-tech zones.¹¹ Geographically speaking, Chinese tech startups are mainly concentrated in the high-tech zones scattered in the metropolitan areas of Beijing, Shanghai and Shenzhen.¹² Perhaps the most well-known zone is the Zhongguancun Science Park in Beijing.¹³

Over the past decades, an increasing number of Chinese tech startups have grown to unicorns. According to TechCrunch, as of October 2019, 178 (about 35%) of the 516 unicorns worldwide were in China, with a valuation of USD 783 billion in total.¹⁴ The world's largest unicorn is Ant Financial and the second largest is ByteDance, both of which are in China.¹⁵ Chinese tech unicorns mainly use internet services or big data technologies to revolutionize retail, commerce, entertainment, finance, transportation sectors, etc.¹⁶ Some of the unicorns have grown to the world's largest tech companies. Nine of the world's twenty largest internet giants by valuation are Chinese companies (e.g. Alibaba, Tencent and Baidu) and the rest are American companies (e.g. Amazon, Google and Facebook), with a total of zero companies outside the United States and China.¹⁷

Like firms in Silicon Valley, Chinese tech companies in their early stage are nourished by the so-called incubators and accelerators – networking organizations through which startups can get in touch with providers of various resources including business model development, funding,

¹¹ Torch High Technology Industry Development of the Ministry of Science and Technology Center of China (Torch of MOST), *China Torch Statistical Yearbook* (China Statistics Press 2018) Table 1-3.

¹² *ibid.*

¹³ Yu Zhou, *The Inside Story of China's High-Tech Industry: Making Silicon Valley in Beijing* (Rowan & Littlefield 2008).

¹⁴ TechCrunch (n 1).

¹⁵ *ibid.*

¹⁶ Evergrande Research Institute, *China Unicorn Report 2019* [zhongguo dujiaoshou baogao 2019].

¹⁷ Meeker (n 3).

product development, marketing strategy, etc. Incubators and accelerators are developing nationwide, with the number growing from 73 in 1995 to 4,063 in 2017.¹⁸

The growth of Chinese tech startups would be impossible without venture capital (VC). Despite its recent market slowdown, China is second only to the United States in terms of the amount of venture capital raised, invested, and exited.¹⁹ The number of VC institutes has grown remarkably from 17 in 1994 to 2,045 in 2016.²⁰ In recent years, the government has been pumping money into the venture capital market. Since 2007, MOST has launched many state-owned “guidance funds” to increase the supply of VC for tech startups. Over 2,000 government guidance funds are now in operation, with RMB 5.3 trillion (about USD 792 billion) under management.²¹ Despite many government-funded VC firms, the most active VC firms in startup investment are usually non-government ones, including foreign firms such as IDG Capital, Sequoia China, and Matrix Partners China.²² Although domestic VC has been growing quickly, foreign VC remains to account for a third of venture investment in Chinese tech startups.²³ Compared to domestic VC firms, foreign VC firms are more interested in investing in seed-stage startups and much less interested in mature ones.²⁴

¹⁸ Torch of MOST (n 11).

¹⁹ PitchBook, ‘Venture Capital in China’ (March 15, 2019) <<https://pitchbook.com/news/reports/1q-2019-pitchbook-analyst-note-venture-capital-in-china>> accessed 23 November 2019; Covestro, ‘China’s Start-up Landscape (And How to Engage with It)’ <[https://press.covestro.com/news.nsf/id/2018-177-EN/\\$file/KAIROS_ENG.pdf](https://press.covestro.com/news.nsf/id/2018-177-EN/$file/KAIROS_ENG.pdf)> accessed 2 November 2019.

²⁰ Chinese Academy of Science and Technology for Development (CASTED), *Venture Capital Development in China 2002* (Economy and Management Publishing 2002) 9; CASTED, *Venture Capital Development in China 2017* (Economy and Management Publishing 2017) 2.

²¹ Covestro (n 19).

²² Aoping Zhang, ‘The Present and Prospect of China’s Equity Investment Market in 2019’ [2019 nian zhongguo guquan touzi shichang xianzhuang ji zhanwang] (*Forbes China*, 15 May 2019) <<http://www.forbeschina.com/entrepreneur/476>> accessed 2 November 2019.

²³ In 2018, foreign VC funds participated in 30.6% of venture investments in Chinese startups. See PitchBook (n 19). Foreign VC used to be the major source until recently, accounting for 80% of VC investment at least until 2010. See Fortune Capital, <http://www.fortunevc.com/news_view.asp?news_id=491> accessed 2 November 2019

²⁴ CASTED, *Venture Capital Development in China 2017* (Economy and Management Publishing 2017) 100.

II. The High-Velocity Labour Market and the Covenants not to Compete

A. The Puzzle

A distinctive feature of Silicon Valley is its “high-velocity” labour market in which employees frequently change jobs across companies.²⁵ The average employee tenure at Silicon Valley tech companies is only about two to three years.²⁶ Sociologist AnneLee Saxenian maintains that the job-hopping culture of Silicon Valley is much more conducive to knowledge spillovers across firms than the internal career culture of Massachusetts Route 120.²⁷ Still, why does Silicon Valley have this job-hopping culture? Professor Ronald Gilson argues that the cultural difference results from the legal fact that covenants not to compete (CNCs) in employment contracts are unenforceable in California while they are enforceable in Massachusetts.²⁸ An enforceable CNC restricts an employee’s ability to work for the employer’s competitors or to establish a competing business herself for a specified period in a designated geographic area after the end of employment. The traditional wisdom of CNCs concerns a trade-off between employers’ investment in human capital and trade secrets on the one hand and employees’ self-investment and talent market efficiency on the other.²⁹ CNCs with reasonable constraints on employee job mobility are enforceable in the large majority of the states in the

²⁵ Alan Hyde, *Working in Silicon Valley: Economic and Legal Analysis of a High-Velocity Labour Market* (M.E. Sharpe 2003).

²⁶ AnneLee Saxenian, *Regional Advantage: Culture and Competition in Silicon Valley and Route 128* (Harvard University Press 1994) 34-35; Kaylee Fagan, ‘Silicon Valley Techies Get Free Food And Dazzling Offices, But They’re Not Very Loyal - Here’s How Long The Average Employee Stays At The Biggest Tech Companies’ (*Business Insider* 16 April 2018) < <https://www.businessinsider.com/average-employee-tenure-retention-at-top-tech-companies-2018-4> > accessed 3 November 2019.

²⁷ Saxenian (n 26) 128.

²⁸ Ronald J. Gilson, ‘The Legal Infrastructure of High Technology Industrial Districts: Silicon Valley, Route 128, and Covenants Not to Compete’ (1999) 74 *New York University Law Review* 575.

²⁹ Jonathan M. Barnett and Ted Sichelman, ‘Revisiting Labour Mobility in Innovation Markets’ (2016) USC Law Legal Studies Paper No. 16-15.

United States, but not in California.³⁰ The unenforceability of CNCs provides a legal environment in which a job-hopping culture can flourish in Silicon Valley.

Unlike Silicon Valley, CNCs are enforceable in China. The early implicit sources of CNCs in China were the Anti Unfair Competition Law (1993) and the Labour Law (1994). The former prohibited unauthorized use of trade secrets;³¹ the latter permitted the employer and the employee to stipulate in the employment contract matters concerning trade secret protection and compensation for damages resulting from breaches by the employee.³² Despite the absence of express recognition in national legislation, CNCs were clearly permitted under many local regulations of high-tech science parks.³³ For example, the Zhongguancun Science Park Regulations (2000) provided that the maximum non-compete period was three years after the termination of employment and the employer should compensate the employee. The explicit legislative recognition of CNCs at the national level arrived with the enactment of China's Labour Contract Law in 2008. Under the law, the employer and the employee may agree that the employer shall make a compensation payment to the employee on a monthly basis during the post-employment non-compete period and the employee shall pay liquidated damages to the employer if the employee breaches the non-compete obligation. The maximum non-compete period under the law is two years.³⁴ In 2013, the People's Supreme Court issued an interpretive release providing that the monthly compensation should not be less than 30% of the average

³⁰ For an overview of the enforceability of CNCs in the 50 states of the United States, see White House, 'Non-Compete Agreements: Analysis of the Usage Potential Issues, and State Responses' (May 2016) <https://obamawhitehouse.archives.gov/sites/default/files/non-competes_report_final2.pdf >

³¹ China's Anti Unfair Competition Law (1993), s.10.

³² China's Labour Law (1994), ss. 22 and 102.

³³ Zhongguancun Science Park Regulations [Zhongguancun keji yuanqu tiaoli] (2000); Shenzhen Special Economic Zone Enterprise Technology Secrets Protection Regulations [Shenzhen jingji tequ qiye jishu mimi baohu tiaoli] (1995); Jiangsu Province Software Industry Promotion Regulations [Jiangsu sheng ruanjian chanye cujin tiaoli] (2007).

³⁴ China's Labour Contract Law (2008), ss. 23, 24 and 25.

monthly salary of the last twelve months prior to the termination of employment.³⁵ The release also provides that the employee shall be bound by the CNC unless the employer waives the right to execute or unless the employee requests to terminate the CNC after the employer fails to pay the compensation for more than three months.³⁶

Despite the enforceability of CNCs, China has a high-velocity labour market nationwide and particularly in the tech sector. For both China and the United States, the tech sector has regularly been one of the sectors that have the highest employee turnover rates.³⁷ In China, the employee turnover rate of tech startups over the years has been consistently over 25%.³⁸ As noted, the average employee tenure for Silicon Valley firms is as short as two to three years. Some studies suggest that the average employee tenure for Chinese tech companies is comparable to or even shorter than that in Silicon Valley. A 2006 labour market survey showed that the average tenure for employees of Chinese internet companies was less than three years.³⁹ More recently in 2014, another survey showed that the average employee tenure of Chinese internet companies was as short as 31 months while the average was 45 months for their American counterparts.⁴⁰ Recent evidence shows that Chinese tech professionals have accelerated their job-hopping speeds. A survey of the internet sector shows that the average

³⁵ The Supreme People's Court's Interpretation on Several Issues Concerning the Application of Law in the Trial of Labour Dispute Cases (IV) [zuigao renmin fayuan guanyu shenli laodong zhengyi anjian shiyong falu ruogan wenti de jieshi (si)].

³⁶ *ibid.*

³⁷ LinkedIn, 'The Report on Job Changes of Chinese Professionals' [Zhongguo zhichang renshi tiaocao baogao] (2014) (comparing employee turnovers in China and the U.S. and showing that the tech sector is among the highest sectors in both countries) <<http://marketwatch.hroot.com/company/Detail-13081-cn.cis>> accessed 3 November 2019.

³⁸ Mercer, 'The Research Report on Startup Compensation 2016' [zaoqi qiye xinchou diaoyan baogao 2016]; Mercer, 'The Research Report on Startup Compensation 2017' [zaoqi qiye xinchou diaoyan baogao 2017]; Mercer, 'The Research Report on Startup Compensation 2018' [zaoqi qiye xinchou diaoyan baogao 2018].

³⁹ Mercer, 'The 2006 Research Report on Compensation in China's Internet Sector' [2006 nian Zhongguo hulianwang hangye xinchou diaoyan baoga]. A summary of the report is available at <<http://tech.sina.com.cn/i/2007-04-05/07511449738.shtml>> accessed 3 November 2019.

⁴⁰ LinkedIn (n 37).

employee tenure decreased from 22.8 months in 2015 to 19.3 months in 2017 and only 9.7% of the employees had a tenure more than three years.⁴¹ The average tenure of senior tech employees was merely 17.3 months and only 19.8% of them had stayed for two years or more at the previous employer.⁴² Another report similarly shows that in 2018, the average employee tenure at China's internet sector was only 17.6 months.⁴³

Human resources reports in China often attribute the high job mobility to the high growth market where employees have plenty opportunities for career and income growth.⁴⁴ Besides the economic factors, what is the role of enforceable CNCs in relation to the high-velocity job market of China's tech sector? In light of Silicon Valley's experience, it is puzzling to observe such a high frequency of job changes in China's tech sector. Why do enforceable CNCs appear not to be a hurdle to job mobility in China's tech sector?

B. Possible Explanations

1. Rare Enforcement

An intuitive hypothesis is that Chinese tech companies rarely enforce CNCs. In China, CNCs are enforceable only when the employer pays compensation to the employee during the non-compete period. As a result, the employer would weigh the costs and benefits and enforce CNCs selectively. The compensation requirement particularly limits the CNC enforcement by startups that are tight on cash.

⁴¹ BOSS Zhipin, '2017 Internet Talent Trends White Paper' [2017 hulianwang rencai qushi baipishu] <https://z.zhipin.com/H5/html/pdf/white_paper.pdf> accessed 3 November 2019.

⁴² *ibid.*

⁴³ LinkedIn, '2018 Trends and Insights of Chinese Professionals' Job Changes' [2018 Zhongguo zhichang ren tiaocao qushi dongcha] <<http://www.ccn.com.cn/html/shishangshenghuo/redian/2018/0314/343186.html>> accessed 3 November 2019.

⁴⁴ Mercer (n. 38); Mercer (n 39); BOSS Zhipin (n 41).

Anecdotal evidence in news reports and online forums indicates that the use of CNCs in employment contracts has become a norm among Chinese tech companies in recent years.⁴⁵ Yet, the common use of CNCs in employment contracts does not necessarily mean that tech companies routinely enforce CNCs. Empirical evidence on CNC court cases may shed some light on the hypothesis of rare enforcement.

As of September 2019, China Judgements Online, a court cases database maintained by the People's Supreme Court, returned 4,879 cases with a keyword search of *jingye xianzhi* (the standard translation of CNC in Chinese) under the labour dispute category. Note that not all Chinese court cases are publicly available.⁴⁶ It has been estimated that China Judgements Online covers about 50% of all court cases in China.⁴⁷ By this estimate, the number of the CNC court cases in reality might be twice as many as the reported cases, which should be acknowledged for interpreting the following results.

Figure 1 shows the case distribution over the years. Note that the CNC cases reported in Figure 1 include cases where employers sued former employees for CNC breaches *and* cases where former employees sued former employers to request compensation for CNC compliance. The first case was reported in 2009, one year after the enactment of the Labour Contract Law in 2008. There was a slow growth of cases in the following years until a noticeable increase starting from 2013. The rise in the gross number of CNC cases since 2013 might be attributable

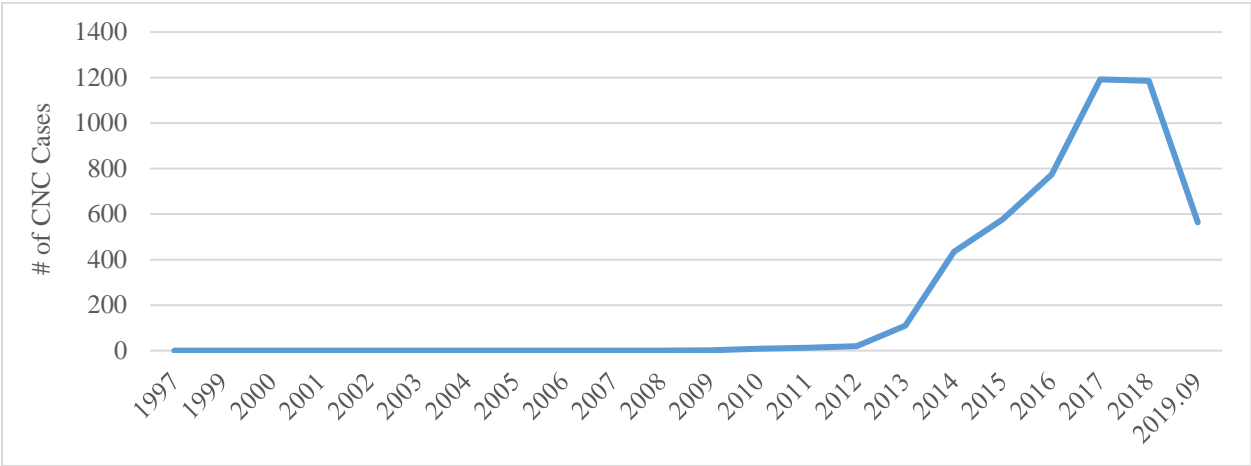
⁴⁵ See e.g., Fanggong Yiliu, 'Large Internet Companies Wanting Their Former Employees' [quanwang tongji qian yuangong de hulianwang da gongsi] (*Caijing Magazine* 11 July 2019) <http://news.caijingmobile.com/article/detail/399828?source_id=40> accessed 3 November 2019; HRSaaS, 'Non-compete Agreements as the Norm, Do You Sign or Not?' [hulianwang gongsi jingye xieyi "changtaihua", ni qian haishi bu qian?] <<https://zhuanlan.zhihu.com/p/75327767>> accessed 3 November 3, 2019.

⁴⁶ Benjamin L. Liebman et al., 'Mass Digitization of Chinese Court Decisions: How to Use Text as Data in the Field of Chinese Law' Columbia Public Law Research Paper No. 14-551 (2019) <<https://ssrn.com/abstract=2985861> or <http://dx.doi.org/10.2139/ssrn.2985861>> accessed 23 November 2019.

⁴⁷ Chao Ma et al., 'Big Data Analysis: A Report on China Judgements Online' [da shuju fenxi:zhongguo sifa caipan wenshu shangwang gongkai baogao] (2016) 12 *China Law Review* 195.

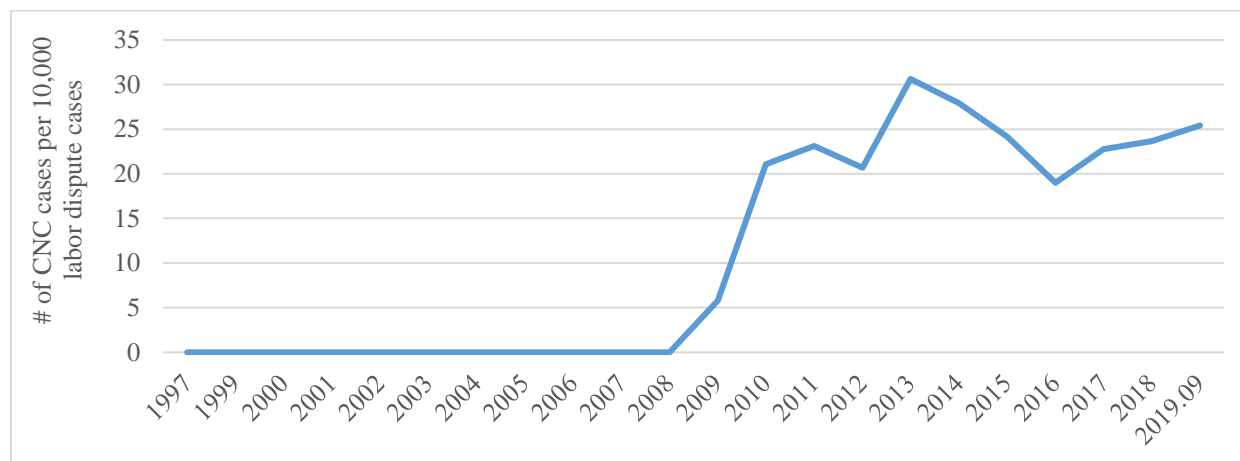
to greater data availability as the database was launched in 2013. To address this concern, Figure 2 shows the percentage of CNC cases in the total labour disputes reported in the database. The database includes labour cases as early as from 1997. Figure 2 shows a significant increase in the percentage of CNC cases since 2008. The noticeable growth of the CNC court cases suggests the increasing use of CNCs in employment contracts. The more common use of CNCs in employment contracts increases the likelihood to observe the growth of CNC cases in courts.

[Figure 1] Number of CNC Cases, 1997-2019



Source: raw data collected from China Judgements Online and compiled by author

[Figure 2] Number of CNC Cases per 10,000 Labour Dispute Cases in China, 1997-2019



Source: raw data collected from China Judgements Online and compiled by author.

A closer look at the data shows that CNC cases tend to concentrate in jurisdictions where tech companies have strong presence in the local economy. Table 1 shows the top courts by the number of CNC cases, including cases pursued by employers or employees. The local court of Beijing Haidian District, the jurisdiction within which China’s leading tech-hub Zhongguancun is located and many leading tech firms such as Baidu, Youku and Souhu are headquartered, has the largest number (264) of CNC cases. Beijing Chaoyang District is known for its financial industry. Shanghai Pudong has the well-known financial district Lujiazui and the Zhangjiang Hi-Tech Park. Hangzhou Binjiang District houses the Hangzhou Hi-Tech Park and Alibaba’s headquarters. Kunshang has been known for its information technology and semiconductor industry since the 1990s. The empirical findings in Table 1 are consistent with anecdotal evidence that CNCs are mostly common in technology and financial sectors.⁴⁸

⁴⁸ Yumeng Bao, ‘Baidu Launches a Million Damage Claim Against Its Former Employee Li Chenggang, Allegedly Violates the Noncompete Agreement, Joins Toutiao Today’ (*The Paper* 20 June 2018) (reporting a survey showing that CNCs are most common in the financial industry, followed by the information technology sector) <https://m.thepaper.cn/yidian_promDetail.jsp?contid=2208133&from> accessed 3 November 2019.

[Table 1] Top Courts by the Number of CNC Cases, 2008-2019.9

Top Five District Courts	Number of Cases
Beijing Haidian District People's Court	264
Beijing Chaoyang District People's Court	104
Shanghai Pudong People's Court	57
Hangzhou Binjiang People's Court	55
Kunshan People's Court	44
Top Five Intermediate Courts	
Shenzhen Intermediate People's Court	123
Jiangsu Suzhou Intermediate People's Court	110
Beijing No.3 Intermediate People's Court	100
Shanghai No.1 Intermediate People's Court	82
Beijing No. 2 Intermediate People's Court	81

Source: raw data collected from China Judgements Online and compiled by author.

The sample cases of the Beijing Haidian District People's Court show that 96.6% of the employers involved were tech companies.⁴⁹ Employers sought to enforce CNCs against employees in about 60% (133/224) of the tech company cases, involving 59 different tech companies since 2008. The rest of the cases involved situations where employees sought compensation paid by employers under noncompetes. In other words, a significant portion of the CNC cases was actually pursued by employees rather than employers.

⁴⁹ The sample includes 224 cases, after removing duplicative cases and irrelevant cases (i.e. cases where CNC was not an issue at dispute) from the raw sample (264).

To further investigate the use and enforcement of CNCs in the tech sector, this article examines whether China's 131 unicorns and its largest ten tech public companies have ever involved as a plaintiff or defendant in any CNC court cases.⁵⁰ As of October 2019, 14 (9.9%) of the 141 tech companies involved in 41 unique court cases.⁵¹ The former employees involved in the cases ranged from rank-and-file engineers to senior executives, which evidences the broad-based use of CNCs in employment contracts in the tech sector. Of the 14 companies, four (Baidu, Alibaba, Tencent and JD) are publicly listed companies while the rest ten are unicorns. Of the 41 cases, 26 cases involved nine companies seeking to enforce CNCs against former employees. In other words, only nine (6.3%) of the 141 tech companies have ever sued a former employee for CNC breaches since 2008. Given the employment size of these large companies and the time span over a decade, the number of lawsuits (even if doubled in reality) is miniscule. Notably, in the rest 15 cases, former employees sought compensation paid by former employers.

While court cases may be helpful to assess the frequency of CNC enforcement, most CNC disputes, like most labour disputes, are resolved privately or by arbitration. In China, arbitration is a pre-requisite for labour disputes before parties can take the issue to court. Due to the confidentiality of arbitration, it is hard to assess the frequency of tech employers using arbitration to enforce CNCs against former employees. Available sources suggest that about one in five to one in eight labour arbitrations in the tech sector would appeal to court.⁵² Accordingly,

⁵⁰ For the list of China's unicorns, see Zero2IPO Research, 'China's Unicorn Report 2018' [2018 nian zhongguo dujiaoshou qiye yanjiu baogao] <<https://report.pedata.cn/1539075142031003.html>> accessed 3 November 2019.

⁵¹ A trial judgement and its appeal are counted as one case.

⁵² Haidian District Court, Haidian District Labor Disputes White Paper (Review Edition) [Haidian qu laodong zhengyi qingkuang baipishu (zong shu ban)] (2018).

it could be estimated that a total of 260-416 CNC-related arbitrations sought by the 141 large tech companies (or on average 2-3 arbitrations per company) over the past decade.⁵³

Overall, available empirical evidence suggests the common use of CNCs in employment contracts by Chinese tech companies. Nevertheless, it seems that Chinese tech companies rarely enforce CNCs against their former employees through arbitration or litigation. The low frequency of CNC enforcement may be partly related to increased enforcement costs and low breach costs as discussed below.

2. Increased Enforcement Costs

The court data shows that tech employers fair worse than employees when seeking CNC enforcement. The sample cases of the Beijing Haidian District People's Court show that tech employers lost in 56% (74/133) of the cases where employers alleged CNC breaches by employees and in 67% (61/91) of the cases where employees sought compensation paid by employers due to noncompetes.⁵⁴ Often, the plaintiffs lost the claims due to failure to prove the existence of a valid non-compete agreement.

From employers' perspective, CNCs may be a double-edged sword when CNCs are widely adopted by employers. Each employer may protect its own trade secrets from being unlawfully exploited by departing employees. Meanwhile, each employer may encounter legal barriers to hire employees from competitors. In the face of the increasing adoption of CNCs, Chinese tech companies and tech professionals have recently developed strategies in attempt to dodge CNCs. The common avoidance strategies are as follows: the competitor would hire the

⁵³ The calculation is as follows: $26*5=130$; $26*8=208$. The numbers are further multiplied by 2 given that China Judgements Online covers about 50% of all court cases.

⁵⁴ Data from Table 1 and (n 49).

CNC-bound employee through its subsidiary or affiliate; the competitor would hire the CNC-bound employee as an independent contractor rather than an employee; the competitor would enter into an employee leasing agreement with an outsourcing agency which is the official employer of the CNC-bound employee; the CNC-bound employee would entrust his shares of his competing business to a third party such as a friend; the CNC-bound employee would establish an offshore company that contractually controls a domestic operating company in competition against his former employer.⁵⁵ The purpose of all these strategies either through indirect employment or through indirect ownership is to make it difficult for the former employer to detect and prove possible CNC breaches. As a result, it raises enforcement costs and may cause former employers to abandon the pursuit of CNC enforcement. Court cases suggest that plaintiff employers seeking to prove a CNC breach often spent considerable efforts in collecting evidence on the defendant employee's affiliation with the competitor. Plaintiff companies often employ various methods such as hiring private detectives and using sneaky strategies to collect such evidence. However, the admissibility and weight of evidence collected through such methods vary from case to case.⁵⁶

⁵⁵ Jingtian & Gongcheng Legal LLP, 'Covenants Not to Compete – Interviews with Yu Xin, Esq. and Hu Ke, Esq.' [jingye xianzhi jiufen: bianhua buzhi zai xiwei zhijian –fang jingtian gongcheng Yu Xin, Hu Ke lushi] <<https://www.jingtian.com/Content/2018/08-06/0931125327.html>> accessed 3 November 2019. The recent high-profiled case between Baidu and one of its former employees who joined Toutiao (a unicorn) provides a good example of the use of the avoidance strategies. Baidu sought to enforce a CNC clause against the employee who was barred from working for Toutiao or its affiliates during the non-compete period. The employee joined an outsourcing firm. The Beijing Municipal Labour Dispute Arbitration Commission ruled that the employee was formally employed and paid by the outsourcing firm, not an affiliate of Toutiao; therefore, the employee did not violate the CNC obligation. Baidu appealed to courts. The trial court and the appeal court found that one of the major shareholders of the outsourcing firm was a senior manager of a company invested by Toutiao and the senior manager's social security was actually covered by Toutiao. As a result, the outsourcing firm was an affiliate of Toutiao and the employee breached the CNC obligation. See *Li Chenggang v. Baidu Online Network Technology (Beijing) Co., Ltd.*, Labour Dispute Second Civil Judgment, Beijing First Intermediate People's Court (2019).

⁵⁶ For an example that the court rejected such evidence, see *Wuhu Easy Play Network Technology Co., Ltd. Guangdong Branch v. Li Li*, Non-compete Restrictions Dispute Retrial Review and Trial Supervision Civil Ruling, Guangdong Higher People's Court (2018).

3. Low Breach Costs

From an economics perspective, the employee subject to an enforceable CNC weighs the costs and benefits of breaching the contract. When the benefits outweigh the costs, the employee has incentives to breach. In China, in case of the former employee breaching the CNC, the employer often seeks the return of the paid monthly compensation and any liquidated damages stipulated in the contract. The liquidated damages are often set as a multiple of the total amount of the monthly compensation. The court has authority to reduce the liquidated damages if excessive.⁵⁷ In practice, defendant employees routinely request courts to exercise the discretion in reducing the liquidated damages and courts often do so consistent with defendant employees' wishes.⁵⁸ The court cases related to the 131 unicorns and the largest ten tech companies in China show that the average liquidated damages requested by the employer was about RMB 1.9 million while the average liquidated damages approved by court was around RMB 570 thousand, merely about 30% of the requested amount. The median of the approved liquidated damages was RMB 290 thousand.⁵⁹ Another data source shows that the Haidian District Court, the jurisdiction where Zhongguancun is located, allowed liquidated damages in only 42 (25.6%) of the 164 cases sought by employers and granted a total of RMB 5.1 million during 2010-2016.⁶⁰ The liquidated damages do not appear intimidating to tech professionals, given their average income, especially

⁵⁷ The Supreme People's Court's Interpretation on Several Issues Concerning the Application of the Contract Law of the People's Republic of China (II) [zuigao renmin fayuan guanyu shiyong <zhonghua renmin gongheguo hetongfa> ruogan wenti de jieshi (er)]; Notice of the General Office of the Supreme People's Court on <the Minutes of the National Civil Trial Work Conference> [zuigao renmin fayuan bangongting guanyu yinfa <quanguo minshi shenpan gongzuo huiyi jiyao> de tongzhi] (2011).

⁵⁸ Shanghai First Intermediate People's Court, White Paper on Shanghai First Intermediate People's Court Competition Restriction Cases [Shanghai yi zhong yuan jingye xianzhi anjian baipishu] (6 July 2018), available at <<http://www.laodongfa.com/wap/index/show/catid/5/id/68300.html>> accessed 3 November 2019.

⁵⁹ The data is right-skewed with outliers; as a result, the mean is greater than the median.

⁶⁰ Haidian District Court, 'White Paper on Haidian District Labour Disputes' [Haidian qu laodong zhengyi qingkuang baipishu] (2017) <<https://www.chinacourt.org/chat/chat/2017/04/id/47184.shtml>> accessed 3 November 2019.

for those at the leading tech companies and unicorns.⁶¹ More importantly, it is quite common that the employee and her current employer make a private agreement in which the current employer helps the employee pay off the liquidated damages in case of a CNC breach enforced by the former employer.⁶²

C. Beyond CNCs

Employee job mobility is not simply the higher the better. Excessive employee turnover hurts the company's productivity and the bottom line. How do employers retain employees in a highly mobile labour market? In Silicon Valley, firms use equity compensation to bind employees because CNCs are unenforceable in California.⁶³ Do Chinese tech firms adopt a similar strategy? As shown below, Chinese tech startups widely adopt equity compensation as part of employee compensation. Yet, the contractual norm of equity compensation is very different from that in Silicon Valley, which makes equity compensation lose its lustre.

III. Equity Compensation and the Buyback Norm

A. The Puzzle

The use of broad-based employee stock option plans is often believed as a key ingredient in the recipe of replicating Silicon Valley's success.⁶⁴ Stock options as part of employee

⁶¹ Leipin, '2019 Report on Talent Demand and Compensation of China's Unicorns' [2019 Zhongguo dujiaoshou qiye rencai xuqiu yu xinchou baogao] <<https://event.liepin.com/t/1545377984901/pdf/2019%E4%B8%AD%E5%9B%BD%E7%8B%AC%E8%A7%92%E5%85%BD%E4%BC%81%E4%B8%9A%E4%BA%BA%E6%89%8D%E9%9C%80%E6%B1%82%E4%B8%8E%E8%96%AA%E9%85%AC%E6%8A%A5%E5%91%8A.pdf>> accessed 3 November 2019.

⁶² Interview with a senior lawyer specialized in Chinese labour law. The interview was conducted on an anonymous basis.

⁶³ Richard A. Booth, 'Give Me Equity or Give Me Death – The Role of Competition and Compensation in Silicon Valley' (2006) 1 Entrepreneurial Business Law Journal 265, 271.

⁶⁴ See e.g., Greg Miller, 'Pretenders to Silicon Valley's Throne' (*Los Angeles Times* 8 March 1998) <<https://www.latimes.com/archives/la-xpm-1998-mar-08-mn-26781-story.html>> accessed 8 November 2019; Index

compensation are by no means an innovation of Silicon Valley. What is special is that tech companies in Silicon Valley expand the use of stock options to a wide range of employees rather than limiting it to top executives.⁶⁵ The stock option plan is a contract between the company and its employees. A stock option gives an employee the right but not the obligation to buy a specific number of the company's shares at a specified price (called "strike price") within a specified number of years. The stock option contract is designed as a long-term contract to retain employees by imposing vesting restrictions. In a typical plan, the options are granted over four years, with 25% of the options vested at the end of the first year (called "one year cliff") and the balance vested on a monthly basis over the next three years. The employee would typically have up to ten years to exercise the options from the grant date as long as she continued to work for the company. However, if the employee left the company, she would typically have only three months to exercise any vested options under the contract (called "golden handcuff") and any vested but unexercised options would be cancelled after the three-month deadline.⁶⁶

The employee could make a fortune by selling the vested shares at a price higher than the strike price when the company went public or was acquired. Stock options have generated many thousands of millionaires in Silicon Valley.⁶⁷ Stock options with a potential of spectacular economic gains are a powerful motivation tool for employees to work for the company's success. In addition to the incentivizing function, stock options are a useful recruiting tool for startup

Ventures, 'Rewarding Talent: A Guide to Stock Options for European Entrepreneurs' <<https://www.indexventures.com/rewardingtalent/the-index-ventures-experience> > accessed 8 November 2019.

⁶⁵ Hyde (n 25) 187.

⁶⁶ Jason Nazar, 'The Complete Guide to Understanding Equity Compensation at Tech Companies' (*Fortune* 27 September 2016) <<https://fortune.com/2016/09/27/the-complete-guide-to-understanding-equity-compensation-at-tech-companies/>> accessed 8 November 2019.

⁶⁷ During 1994-1999, more than 100,000 high-tech employees below the level of vice president became "stock option millionaires" in the United States (mainly in Silicon Valley). For more details of the data, see Carol E. Curtis, *Pay Me in Stock Options: Manage the Options You Have, Win the Options You Want* (Wiley 2001) 4.

companies that are tight on cash and cannot compete with large companies that offer big salaries. Startup companies offer stock options as lottery tickets in exchange for lower salaries.

In recent years, the motivation function of stock options for startup employees has come under threat in the United States as startups have found ways to lengthen their cash runway rather than going for an initial public offering (IPO). Instead of going public within six to eight years after its foundation, a startup company now can raise significant money from the so-called “growth funds” and defer the need for an IPO to ten or more years after the company is founded.⁶⁸ The increasing delay of IPO places startup employees in a dilemma if their stock options are expiring – exercising the options (i.e. purchasing shares and paying taxes) with no liquidity event within the visible horizon or forgoing the lottery tickets. Commentators have suggested a number of solutions that startup companies may use to ameliorate the negative impact on their employees, including offering restricted stock units (RSUs, which are like options with a \$0 strike price), extending the exercisable period for options, offering a repurchase program in which employees may opt to cash out some of their shares, etc.⁶⁹

Like their counterparts in Silicon Valley, Chinese tech startups often include stock options as part of employee compensation. The use of employee stock options in Chinese tech startups began in the 1990s. In 1999, the government issued a policy statement that endorsed privately owned tech companies to use stock options as a way to incentivize employees.⁷⁰ In 2000, the Ministry of Finance handpicked eight tech companies in the Zhongguancun Science

⁶⁸ Rohit R. Kulkarni, ‘The Rise of Unicorn Funds – Examining the Supply of Private Growth Capital’ (CAIA Association 2017) <<https://caia.org/aiar/access/article-1157>> accessed on 9 November 2019.

⁶⁹ Abraham J.B. Cable, ‘Equity Compensation & the Mature Startup’ (2017) 11 Virginia Law & Business Review 615; Anat Alon-Beck, ‘Unicorn Stock Options – Golden Goose or Trojan Horse?’ (2019) 2019 Columbia Business Law Review 107.

⁷⁰ Decision of the Central Committee of the Communist Party of China and the State Council on Strengthening Technological Innovation, Developing High Technology, and Realizing Industrialization [Zhonggong zhongyang guowuyuan guanyu jiaqiang jishu chuangxin, fazhan gaokeji, shixian chanyehua de jueding] (August 1999).

Park to promote the use of employee stock ownership plans (ESOPs).⁷¹ A survey in 2000 showed that a majority of Chinese internet companies had already adopted employee stock options.⁷² More recently, a group of leading Chinese venture capital firms published a series of annual reports showing that a predominant majority of Chinese startups have used stock options to incentivize employees.⁷³ Public information shows that China's largest public tech companies including Alibaba and Baidu often launched ESOPs in their startup stage.⁷⁴

At first glance, the ESOPs of Chinese tech startups resemble the plans of Silicon Valley firms. Yet, there is a fundamental difference in the contractual norm. When the employee exercised the vested options and purchased the shares, the norm in Silicon Valley is that the employee would be entitled to keep the shares even after leaving the company.⁷⁵ Any attempt to claw back vested shares or vested options where the employee has no fault would raise the concern of violating the norm and would be called out as “evil” or “vampire capitalism.”⁷⁶ As noted by Sam Altman, the chairperson of Y Combinator (the best known startup accelerator in Silicon Valley), “It’s fine if the company wants to offer to repurchase the shares, but it’s horrible for the company to be able to demand this.”⁷⁷ As the real value of owning startup shares comes

⁷¹ Jie Sun and Peng Lu, ‘High-Tech Enterprises Will Carry out Pilot Stock Option Plans’ [gaoxin qiye jiang jinxing gupiao qiquan zhi shidian] *Xinhua Daily* (Beijing 12 October 2000) 2.

⁷² Mu Lin, ‘Is the Internet Company’s Pay Reliable?’ [wangluo gongsi xinshui youpu meipu] *Business Times* (Beijing 20 June 2000) 5.

⁷³ Mercer (n 38) (reports published jointly by the venture firms and Mercer).

⁷⁴ Alibaba’s IPO prospectus (2014) shows that it established multiple ESOPs respectively in 1999, 2004, 2005, 2007 and 2011. Baidu established its first ESOP in 2000.

⁷⁵ Diana Hembree, ‘Startup Employee Alert: Can Your Company Take Back Your Vested Shares?’ (*Forbes* 10 Jan 2018) <<https://www.forbes.com/sites/dianahembree/2018/01/10/startup-employee-alert-can-your-company-take-back-your-vested-stock-options/#774b0d716e49>> accessed 8 November 2019.

⁷⁶ Skype and Zynga are the well-known unusual cases. See Felix Salmon, ‘Upgrading Skype and Silver Lake to Evil’ (*Reuters* 24 June 2011) <<http://blogs.reuters.com/felix-salmon/2011/06/24/upgrading-skype-and-silver-lake-to-evil/>> accessed 8 November 2019; Mary Russell, ‘Skype Repurchase Rights = Vampire Capitalism’ (*Stock Option Counsel* 30 April 2013) <<http://stockoptioncounsel.com/blog/skype-repurchase-rights-vampire-capitalism/2013/8/5>> accessed 8 November 2019; Thomas A. Smith, ‘The Zynga Clawback: Shoring up the Central Pillar of Innovation’ (2013) 53 *Santa Clara Law Review* 577.

⁷⁷ Sam Altman, ‘Employee Equity’ (28 April 2014) <<https://blog.samaltman.com/employee-equity>> accessed 8 November 2019.

at the liquidity event (IPO or acquisition), an early redemption forfeits the employee shareholder's opportunity to realize the financial growth upon the liquidity event.

Unlike Silicon Valley startup workers, Chinese startup employees cannot rest assured of their ownership of vested shares/options as their employers may exercise the repurchase right when the employment relationship ends. Various information sources including news media, online blogs and discussion forums widely used by Chinese lawyers and tech professionals, and private interviews with experienced lawyers specialized in employee stock plans consistently show that Chinese tech startups typically retain the right to repurchase vested shares or vested options from the employee and often exercise such a right if the employee leaves before the occurrence of a liquidity event such as an IPO or acquisition.⁷⁸ When the startup exercises the repurchase right under the ESOP, the employee is obliged to sell his/her vested shares or options to the firm or its designated entity. The repurchase price is often stipulated in the ESOP. Chinese startups usually adopt one of the following three approaches to set the repurchase price: (a) the startup's net asset at the end of prior financial year multiplied by the employee's shareholding percentage (as if options were exercised), (b) the firm's post-money evaluation in the latest round at a discount (usually 30%-50%) multiplied by the employee's shareholding percentage

⁷⁸ Chinese online forums such as Zhihu (<https://www.zhihu.com/>) and 36Kr (<https://36kr.com/>) have many posts and discussion threads suggesting the buyback norm. Here are just a few example posts by ESOP consulting firms: Henshen Equity Consulting, 'Breaking Up Elegantly, Handle Options Nicely' [fenshou gai timian, chuli hao qiquan] (Zhihu 15 March 2018) <<https://zhuanlan.zhihu.com/p/34603456>>; Kapbook.com, 'How to Set the Repurchase Price of Departing Employees' Stock Options?' [huigou lizhi yuangong de qiquan, jiage zenme ding?] (36Kr 29 September 2016) <<https://36kr.com/p/5053850>> accessed 10 November 10, 2019.

News media also profiled disputes over employee stock repurchases. Below is a widely reported example. In 2016, the departing chief technology officer (Mr. Feng) of DXY.cn requested to exercise his vested options, but the startup refused and exercised the repurchase right. The departing employee disagreed with the repurchase price offered by the company. See 'Behind Feng Dahui's 6-Year Stock Options that are Hard to Cash Out: We All Need an Option Manual' [Feng dahui 6-nian qiquan nan taoxian de beihou: women do xuyao yi fen qiquan shiyong shuomingshu] (*PE Daily* 29 August 2016) <<https://m.pedaily.cn/news/402428>> accessed 10 November 2019.

This author conducted interviews with ten Chinese senior lawyers with expertise in employee equity compensation. The lawyers are affiliated with different law firms/ESOP consulting firms in China. The interviews were conducted on an anonymous basis.

(as if options were exercised), or (c) a multiple (usually 1-3) of the strike price multiplied by the number of options.⁷⁹ No matter which one of the methods is chosen, the repurchase price, especially at the early startup stage, is likely far below the price at which the employee could sell in case of an IPO or acquisition.⁸⁰ Often the repurchase clause applies broadly, regardless of the cause of employment termination.⁸¹

What is the rationale, if any, for the buyback norm? The buyback norm appears puzzling in light of Silicon Valley's prevailing practice. Clawbacks may cost startup employees a fortune and thus undermine the incentive function of equity compensation. Is it simply that Chinese startups are "evil" to take advantage of employees? As shown below, the buyback norm has its origin in China's peculiar institutional setting.

B. Institutional Explanations

1. State Control over Foreign Investment and Foreign Exchange

A startup is often initially financed by its entrepreneurial founders who attempt to develop and commercialize a product or service for which they believe there is a demand. Due to high development costs and limited revenues, startup companies, especially those in the tech sector, often cannot reach a self-sustainable stage without additional funding from external

⁷⁹ Interviews with lawyers (n 78). In addition, publicly available information shared by other lawyers provides the same observation. IDG Capital, 'When the Scene is Over, What Do Professional Lawyers Think About "Options"?' [renao kanwan le, guanyu "qiquan" zhejianshi zhuan ye lushi zenme kan?] (IDG Capital 30 August 2016) <<https://cn.idgcapital.com/feeds/>> accessed 9 November 2019; China Private Equity Secondary Market Research Center and Mailaogu.com, *China Equity Transfer Blue Book* (2016) [zhongguo guquan zhuanrang lanpishu (2016)] 50.

⁸⁰ The first approach is unfavourable for employees at internet startups, which are typically light in asset and have low net asset value. The second approach takes a discount for a number of reasons: the price per share in the last round is for preferred shares but not for common shares; the valuation does not necessarily reflect the real value of the privately-held firm; it would add pressure on the startup's cash flow if repurchase at no discount; it discourages employees from leaving the firm. As to the third approach, the strike price at the early stage is usually very low. A multiple between one and three remains a low price.

⁸¹ However, if it is a dismissal with cause (e.g. violating codes of conduct), the repurchase price would be lower or it would be even a forfeiture without any compensation.

sources. Yet, China's capital market has been unfriendly to startups founded by private entrepreneurs. The major banks, which are all state-owned, cater to state-owned enterprises whose debts are presumably guaranteed by the government, rather than serving private startups whose risks and returns are difficult to assess. Meanwhile, domestic venture capital used to be limited until recent years.⁸² In addition, Chinese tech startups often have difficulties to raise funds through IPO on domestic stock exchanges. The listing standards typically require "one share one vote" and a proven record of profitability.⁸³ Many startup founders hold super voting shares to retain their control over the company after equity dilution due to multiple rounds of funding. Many tech startups, especially those in the internet sector, are unable to meet the profitability requirement because they often are not profitable yet while in need of larger-scale financing after series C funding. Moreover, the Chinese government has suspended IPOs occasionally and unexpectedly, which increases uncertainty in timely access to equity capital.⁸⁴ The challenges of domestic listing also suggest that domestic IPO is a difficult exit strategy for investors of tech startups in China. As a result, many Chinese tech startups have been seeking foreign venture capital and overseas listing.

Yet, challenges emerge when seeking capital abroad. The Chinese government restricts foreign investment in many tech-related sectors such as telecommunication, internet and media.⁸⁵ Notably, foreign investment in internet-based news services, online publishing services, online video services and online public information dissemination services remain entirely prohibited,

⁸² Fortune Capital (n 23).

⁸³ Lin Lin, 'Venture Capital Exits and the Structure of Stock Markets in China' (2017) *Asian Journal of Comparative Law* 1.

⁸⁴ Lin William Cong and Sabrina T. Howell, 'IPO Intervention and Innovation: Evidence from China' (2019) NBER Working Paper No. 24657 (reporting nine major IPO suspensions between 1994 and 2016).

⁸⁵ Special Administrative Measures for the Access of Foreign Investment (2019) [waishang touzi zhunru tebie guanli cuoshi (2019)] < <http://www.ndrc.gov.cn/zcfb/zcfbl/201906/W020190628615780569680.pdf> > accessed 8 November 2019.

despite that the government has relaxed some foreign investment restrictions over the years.⁸⁶ Moreover, overseas listing of a domestic company should be subject to approval by the China Securities Regulatory Commission and the Ministry of Commerce. The approval process is tedious and has profitability requirements.⁸⁷

To circumvent the regulations on foreign investment and offshore listing, Chinese tech startups commonly adopt the so-called “VIE” (variable interest entity) structure. A VIE is a domestically incorporated entity held by Chinese nominees and contractually controlled by a foreign entity. Under a VIE structure, the domestic company holds the requisite licenses to operate the business in the restricted sector while the foreign entity controls the domestic company through a set of operation and service agreements that allow profits to be consolidated under the foreign entity. The VIE structure was first adopted by Sina when seeking listing on NASDAQ in 2000. Many other Chinese tech companies such as Baidu and Alibaba followed suit. The VIE structure has been a popular model for Chinese tech companies, especially those in the internet sector, though the legality of the VIE structure in the Chinese legal system remains unclear.⁸⁸

Under a VIE structure, the domestic company hires tech workers to develop products while the foreign entity, usually incorporated in the Cayman Islands, is the entity that will be listed overseas and thus the entity that issues stock or stock options to employees. Chinese employees establish the employment relationship with the domestic operating company but sign

⁸⁶ *ibid.*

⁸⁷ The China Securities Regulatory Commission has the so called “four, five, six” requirements for overseas listings: net assets not less than 400 million yuan, after-tax profits not less than 60 million yuan in the past year, and fund raising amount not less than 50 million U.S. dollars.

⁸⁸ Li Guo, ‘Chinese Style VIEs: Continuing to Sneak under Smog?’ (2014) 47 *Cornell International Law Journal* 569. China passed a new foreign investment law in 2019 and the new law keeps the VIE structure in the grey area. Mark Schaub et al., ‘China: VIEs Alive and Well’ (King & Wood Mallesons 4 March 2019) <<https://www.chinalawinsight.com/2019/03/articles/investment-management/china-vies-alive-and-well/>> accessed 8 November 2019.

ESOP agreements with the offshore company. An employee who exercises his vested stock options and buys the corresponding shares needs to transfer his payment for the shares to the offshore company. According to the regulations, such transfer is subject to registration and approval by the State Administration of Foreign Exchange (SAFE).⁸⁹ In practice, the SAFE allows foreign exchange registration for employee share purchases if the issuer is a listed company but refuses registration if the issuer is an unlisted company.⁹⁰ As a result, Chinese startup employees cannot legally exercise their stock options until the offshore company becomes a listed company. The foreign exchange registration available only after listing is problematic to employees of startups that aim for being acquired rather than going public.

Under the VIE structure, both the startup and its employees face enhanced legal risks and uncertainties with regard to the exercise of stock options. In some occasions, Chinese startup employees in complicity with their employers resort to illegal methods such as registration with false information about transfer purposes (e.g., travel) or transfer through underground banks.⁹¹ If caught by the government, it would incur penalties and would encounter problems of remitting any money derived from the sale of the shares back to China. Sometimes, startups may cunningly use the government's refusal of registration as an excuse to deny or delay employees' request to exercise their vested stock options.⁹² As ESOP agreements typically provide that

⁸⁹ SAFE's Notice on Domestic Residents' Overseas Investment and Round-trip Investment through Special Purpose Companies [guojia waihui guanliju guanyu jingnei jumin tongguo teshu mude gongsi jingwai tourongzi ji fancheng touzi waihui guanli youguan wenti de tongzhi](2014), often called the "No. 37" notice.

⁹⁰ Interviews with lawyers (n 78). Publicly available information shared by other lawyers also provides the same observation. For example, Weidong Nie and Hanyu Zhang, 'The Knacks and Achilles' Heel of Foreign Exchange Registration No. 37 [waiguan 37 hao wen dengji de mendao yu sixue] (King & Wood Mallesons 18 April 2018) <<https://www.lexology.com/library/detail.aspx?g=f412e8f2-f8b1-4ea4-94d2-fd10be7015bd>> accessed on 9 November 2019; Shihui Partners, 'The Foreign Exchange Problem of Overseas ESOP under the VIE Structure' [VIE jigou zhong jingwai ESOP de waihui wenti] (Shihui Partners 12 September 2018) <http://www.shihuilaw.com/shihui_viewpoint.html> accessed 9 November 9, 2019.

⁹¹ Interviews with lawyers (n 78).

⁹² Interviews with lawyers (n 78). Some ESOP consulting firms also publicly share the same observation. For instance, Linkkap.com, 'When Stock Incentives Registration Meets Foreign Exchange Registration'[dang guquan jili yudao waihui dengji] (Zhihu 19 September 2019)< <https://zhuanlan.zhihu.com/p/83298043>> accessed 10

vested stock options expire within three months after the end of employment, employees would often helplessly watch their options expiring. Disgruntled employees rarely seek legal help because the ESOP agreements signed with the offshore company often provide for arbitration or jurisdiction outside China and thus the enforcement costs typically outweigh the economic value of the equity interests at issue, especially for rank-and-file employees. Moreover, Chinese courts have traditionally taken the view that disputes over employee equity compensation are governed by contract law rather than labour law, which puts employees in a disadvantaged position because the contractual terms in the ESOP agreement tend to be written in favour of employers.⁹³

Alternatively but relatively uncommon, some startups would allow departing employees to informally exercise stock options and complete the foreign exchange registration later until the offshore company becomes a listed company or allow departing employees to hold their vested stock options until listing and exercise by then.⁹⁴ After the listing, foreign exchange registration is legally feasible and thus employee stock options become practically exercisable. From a tax perspective, the delayed exercise is beneficial for employees because there is no practical tax benefit for the early exercise of stock options in China, unlike in the United States.⁹⁵ Moreover,

November 2019; FawuVC.com, 'The Finale of the Option Battle between Feng Dahui and DXY.com, Who Wins and Who Loses? Alibaba, Fang Holdings as Precedents' [Feng Dahui yu Dingxiangyuan de qiquan zhi zheng da jieju, shui ying shui shu? yiyou ali, soufang qianli] (Huxiu 3 September 2016) <<https://www.huxiu.com/article/162592.html>> accessed 10 November 2019.

⁹³ In September 2019, the Beijing First Intermediate Court broke away from the tradition and ruled that employee stock option disputes belong to labour disputes. This decision has practical importance because it is ruled by a court that has jurisdiction over China's leading tech hub, Zhongguancun. Meituan Corporation v. Liu Jihan et al., Labour Dispute Civil Rulings [meituan gongsi (MEITUAN CORPORATION) yu Liu Jihan deng laodong zhengyi minshi caidingshu].

⁹⁴ Interviews with lawyers (n 78).

⁹⁵ Under China's tax law, the employee should pay employment income tax with the marginal tax rate up to 45% when exercising options whose strike price is below the market price. The employee should also pay personal income tax (20%) when selling the shares. In 2016 the Ministry of Finance and the State Administration of Taxation issued the Notice on Improving the Income Tax Policies for Equity Incentives and Technology Shares [guanyu wanshan guquan jili he jishu rugu youguan suodeshui zhengce de tongzhi] to exempt the tax for the exercise of options. In practice, most tech employees cannot benefit from it because the notice provides that eligible employees must be the company's key tech professionals or senior executives and the equity compensation must be the company's stock. However, as explained, the startup employee typically holds options of the employer's offshore affiliates or shareholding platforms.

the delayed exercise considerably reduces financial risks for employees because the value of the stock options becomes clear after IPO. Nevertheless, the delayed registration/exercise is susceptible to dispute if good contract management is lacking. Often, it takes many years for a startup to go public and by then some employees have already left the company. It requires the company's good faith and commitment to good management of equity compensation information not only for current but also former employees. Otherwise, the validity, quantity and price of stock options would be a source of dispute after a long elapse of time, which is well illustrated in a number of court cases.⁹⁶

Given the risks and uncertainties for startups and their employees, a more common strategy is that startups routinely include a repurchase clause in the ESOP agreement where the company or its designated entity (often the Chinese startup founders, who are nominee holders of employee shares or options) has the right to buy back vested stock/options at the termination of employment. Chinese tech startups often exercise the right unless they have significant financial difficulties.⁹⁷ From the employer's perspective, it saves administrative costs to maintain stock options for former employees and avoids potential litigation that may arise years later when the options become exercisable upon listing. It also saves the need to issue new shares/options for current and future employees and thus slows down the equity dilution for existing shareholders. Importantly, the repurchase right is a legally permitted arrangement without any involvement of foreign exchange registration or government approval.

⁹⁶ Fang Holdings Limited et al., A Contract Dispute Second Instance Civil Judgment [fangtianxia konggu youxian gongsi deng hetong jiufen er shen minshi panjueshu] (Beijing Second Intermediate People's Court 28 December 2017); Sun Danli v. HC International Inc., A Contract Dispute Second Instance Civil Judgment [Sun Danli yu Huicongwang youxian gongsi hetong jiufen er shen minshi panjueshu] (Beijing First Intermediate People's Court 22 November 2016); Meituan (n 93).

⁹⁷ Interviews with lawyers (n 78).

2. Domestic Regulatory Hurdles

In recent years, China's domestic venture capital funds have grown significantly. With the increasing supply of domestic venture capital, Chinese tech startups now have less need to rely on foreign capital and thus may do away with the problems of using the VIE structure. Yet, the buyback norm continues to operate for different reasons.

When incorporated domestically, Chinese tech startups are routinely established as limited corporations. Under China's corporate law, a limited corporation is not allowed to have more than 50 shareholders and the name of each shareholder must be listed in the articles of association filed with the government.⁹⁸ The buyback of employees' shares/options helps to limit the number of shareholders and save the administrative troubles of filing the amended articles of association whenever employees exercise their stock options. Moreover, in a limited corporation, shareholders make a wide range of important decisions in a shareholder meeting or through a unanimous written resolution.⁹⁹ Maintaining a smooth contact channel with each shareholder is critical for the operation of the company. However, sometimes it is difficult to track down and communicate with departing employees (who might have some dissatisfaction with the company) or their heirs. More importantly, employee equity compensation is usually tied with the CNC obligation. If the departing employee breached the non-compete agreement, his shares would be forfeited as per the contract. As noted, the enforcement costs of CNCs are increasing. The institutional disparity across provinces and between the urban and rural areas in China adds further enforcement costs and legal uncertainties.¹⁰⁰

⁹⁸ China's Company Act (2018), ss. 24, 25 & 29.

⁹⁹ China's Company Act (2018), s. 37.

¹⁰⁰ Margaret Woo and Yaxin Wang, 'Civil Justice in China: An Empirical Study of Courts in Three Provinces' (2005) 53 *American Journal of Comparative Law* 911.

In practice, Chinese tech startups often set up limited partnerships (LPs) as employee shareholding platforms to avoid the restriction on the number of shareholders. The LP is a shareholder of the startup company and holds the shares to be allocated to employees of the startup company. In the LP, the general partner is typically the controlling shareholder of the startup company (a limited corporation) and employees are limited partners with no role in the management of the LP. Under this arrangement, startup employees are not shareholders of the startup company but limited partners who have a portion of the equity interests in the LP. Under the partnership law, each LP may have up to 50 partners and thus each LP can practically take on up to 49 employees for the equity compensation purpose.¹⁰¹ Multiple LPs would be required if issuance of shares to more than 49 employees. Using LPs as shareholding platforms formally complies with the maximum number of shareholders of a limited corporation. Nevertheless, this arrangement works only if the startup has no plan for domestic listing.

Chinese securities regulations require that a non-public company shall have no more than 200 shareholders unless it seeks an exemption from the China Securities Regulatory Commission (CSRC).¹⁰² When counting the number of shareholders, CSRC pierces the shareholding platforms and includes each individual on the platforms. While startup companies with more than 200 shareholders may seek exemptions, in practice CSRC rarely grants exemptions.¹⁰³ CSRC denies a startup company' IPO application if the company fails to comply with the maximum number of shareholders. As a result, Chinese startup companies usually buy back their

¹⁰¹ China's Partnership Law, s. 61.

¹⁰² China's Securities Law, s. 10.

¹⁰³ Unlisted Public Company Regulatory Guide No. 4 [fei shangshi gongzhong gongsi jianguan zhiyin di 4 hao] (2013). According to publicly available information as of July 2017, CSRC approved 20 companies, with only one as a listed company and the rest as firms with shares traded in the over-the-counter market. 'Solutions to the Problem of More Than 200 Shareholders' (BirdBrokers 23 July 2017) <<https://birdbrokers.com/2017/07/over-200-shareholders.html>> accessed 9 November 2019.

departing employees' vested shares/options to prevent this problem potentially arising at the IPO stage.¹⁰⁴

In addition, CSRC requires clarity in the ownership of the IPO firm.¹⁰⁵ Stock option plans established and implemented prior to IPO could be a concern to the ownership clarity requirement. Holders of stock options may or may not exercise their options and thus may or may not become shareholders of the company. Moreover, CSRC requires no potential disputes with regard to the ownership of the IPO-seeking company.¹⁰⁶ Employment termination is prone to dispute. Leaving stock or stock options in the hands of departing employees increases litigation risks of ownership issues. As a result, startup companies usually prefer to buy back stock or stock options from departing employees to prevent all potential legal risks that may add bumps to their IPO road.

After the successful listing, the company may adopt new ESOPs. In practice, listed companies normally allow departing employees to retain their equity interests. In other words, the buyback norm ceases to operate once listing.

C. Assessment from Employees' Perspective

The institutional analysis above stands mainly from the employer's perspective. In the eye of startup employees, the buyback norm carries ambivalent implications.

Working in a startup involves financial and career risks. There is great uncertainty about the future of a startup, especially in the early stage. Most startups fail to survive. Even among the survivors, only a tiny portion will become a listed company. Given the high mortality rate, there

¹⁰⁴ Interviews with lawyers (n 78).

¹⁰⁵ Initial Public Offering and Listing Management Measures [shouci gongkai faxing gupiao bing shangshi guanli banfa], s. 13.

¹⁰⁶ *ibid.*

are high chances that a startup's common stock will become worthless sometime down the road. Moreover, given the low probability of public listing, the event that stock options become exercisable upon listing will be unlikely to occur. It becomes even more difficult to assess the startup's survival and listing probabilities after leaving the company. Departing employees as minority shareholders may take the buyback as an opportunity to exit the closely-held corporation. In this regard, the buyback that results in some cash compensation right after the end of employment might be better than nothing in the unforeseeable future.

While the buyback norm may help the startup employee avoid a financial loss if the firm eventually turns out to be a failure, the norm increases opportunity costs and investment risks for the startup employee when chasing the financial dream promised by the firm. The real value of holding startup stock comes with an exit event like an IPO, but the buyback norm makes it harder for startup employees to realize that growth in value. Under the buyback norm, startup employees have to stay and persist until the time that the company becomes a listed company in order to retain the equity interests and enjoy the financial gains. It normally takes about eight to ten years for a startup from being founded to going public and it is not uncommon to take more than a decade.¹⁰⁷ As a result, the buyback norm puts tight "golden handcuffs" on Chinese startup workers. It requires early startup workers to give significant career commitment to the startup in exchange for its equity interests. Otherwise, a pre-listing departure would incur a forfeiture of potential wealth derived from vested shares/options. Under the buyback norm, a startup employee needs to take into account not only the probability that the startup will successfully go

¹⁰⁷ Based on the data manually collected by this author, the average length of time from establishment to IPO for China's largest ten internet public companies is 7.8 years. A sample of 124 U.S-listed tech companies (including Chinese firms such as Alibaba) shows the average as 9.3 years, though the average varies by sector. Sammy Abdullah, 'How Long Does It Take a Startup to Exit?' (Crunchcase 25 November 9, 2019 2018) < <https://about.crunchbase.com/blog/startup-exit/> > accessed 9 November 2019.

public but also the probability that he/she will continue working for the same firm until the liquidity event. The buyback norm may channel talent away from early startups to late-stage startups ready for going public.

Moreover, the buyback norm precludes startup employees from risk diversification. In Silicon Valley, startup workers normally can exercise their options as soon as upon vesting and can keep their vested shares after leaving the company. Silicon Valley startup employees can diversify their investment risks through job-hopping – holding equity interests in multiple startups that they have worked before and hoping that one or some of the startups will eventually deliver handsome returns. That makes startup employees like venture capitalists who often make investments across an array of startups to spread risks. However, the buyback norm takes away the risk diversification opportunity from Chinese tech workers.

The buyback norm might act as a substitute for fully enforceable CNCs. It penalizes employees who leave their employer. Chinese tech employers might wish to use the buyback norm to bind employees in the highly mobile labour market. Meanwhile, given the high-velocity labour market in China’s tech sector, the effectiveness of the buyback norm to bind employees remains unclear. Employees might view the “golden handcuffs” made with the buyback norm are too tight to bind.

IV. Policy Implications

Over the past decades, policymakers around the world have been striving to emulate the success phenomenon of Silicon Valley. From Beijing to London, Mosco to Tel Aviv, there is a race to lure talent and money for innovation. Despite the policy enthusiasm, commentators often wonder whether the Silicon Valley model is replicable and whether policymakers should make

endeavours to replicate it anyway.¹⁰⁸ China's experience with regard to CNCs and ESOPs provides some food for thought.

A key characteristic of the Silicon Valley ecosystem is its high labour mobility. It is commonly believed that the unenforceability of CNCs in California provides an environment conducive to the rise of the high-velocity labour market in Silicon Valley. Many scholars argue for outright or nearly outright bans on CNCs to promote labour mobility and knowledge circulation.¹⁰⁹ Some economic empirical studies on the United States have attempted to establish a positive relationship between the unenforceability of CNCs on the one hand and labour mobility and innovation on the other.¹¹⁰ However, as some U.S. legal scholars aptly noted, such empirical studies tend to measure CNC laws superficially and overlook the actual and complex operation of CNCs and their substitutes.¹¹¹ There is serious doubt over the validity and reliability of CNC measurements and the related findings.¹¹² In addition, the U.S. legal scholars noted little research on a key question: how often do tech companies actually enforce noncompetes? Consistent with the concerns, the Chinese experience, despite its stark institutional differences from the United States, raises the similar question about whether it is necessary to ban CNCs to obtain high labour mobility and thus technology development.

¹⁰⁸ Henry Etzkowitz, 'Is Silicon Valley a Global Model or Unique Anomaly?' (2019) 33 *Industry and Higher Education* 83. Edwatd Jung, 'Can Silicon Valley be Replicated?' (*World Economic Forum* 31 July 2013) <<https://www.weforum.org/agenda/2013/07/can-silicon-valley-be-replicated/>> accessed 9 November 2019. Chris Baraniuk, 'Why We Shouldn't Try to Replicate Silicon Valley' (*BBC News* 8 February 2018) <<https://www.bbc.com/worklife/article/20180208-why-we-shouldnt-replicate-silicon-valley-evolution>> accessed 9 November 2019.

¹⁰⁹ E.g., Sampa Samila and Olav Sorenson, 'Non-Compete Covenants: Incentives to Innovate or Impediments to Growth' (2010) 57 *Management Science* 425; Viva Moffat, 'Making Non-Competes Unenforceable' (2012) 50 *Arizona Law Review* 939; Orly Lobel, *Talent Wants to be Free: Why We Should Learn to Love Leaks, Raids and Free Riding* (Yale University Press 2013).

¹¹⁰ For an overview of the empirical studies, see Jonathan M. Barnett and Ted Sichelman, 'Revisiting Labour Mobility in Innovation Markets' (2016) USC Gould School of Law Centre for Law and Social Science Research Papers Series No. CLASS16-13.

¹¹¹ *ibid.*

¹¹² *ibid.*

CNCs are enforceable in China. However, the Chinese law requires not only reasonable restrictions on mobility but also compensation paid to the departing employee. Chinese courts generally take the position that the compensation should be an extra payment obligation rather than being part of employment remuneration. Chinese courts also hesitate to approve liquidated damages and routinely exercise their discretion to reduce the stipulated amount, which significantly reduces the breach costs for employees. It suggests that the enforceability of CNCs is not a binary matter and, even if measured on a quantitative scale, it probably would involve great arbitrariness and complexity.¹¹³ More importantly, despite the enforceability of CNCs, China's large tech companies seldom seek CNC enforcement. One may argue that China's legal experience is *sui generis* as commonly characterized. Yet, China is probably not unique in this respect. A recent empirical study on the state of Washington (where a large number of tech companies including Amazon and Microsoft are headquartered and CNCs are favourably enforceable) shows similar corporate behaviour.¹¹⁴ Tech companies, whether in the United States or China, might share some general reasons for not pursuing CNC enforcement, including concerns about litigation and reputation costs. For instance, small firms do not have resources to engage in legal proceedings while large firms may encounter the challenge of tracking and pursuing a large number of departing employees. Importantly, tech companies heavily rely on talented workers. Any CNC enforcement against departing employees may scare away talented workers and such information may spread quickly among tech workers in the social media age. Thus, tech companies would enforce CNCs only in high-stakes situations.

¹¹³ *ibid.*

¹¹⁴ Robert W. Gomulkiewicz, 'Leaky Covenants-Not-to-Compete as the Legal Infrastructure for Innovation' (2015) 49 U.C. Davis Law Review 251.

The policy calls for banning CNCs to promote labour market mobility for innovation are inspired by Professor Gilson's influential paper. Yet, in the same paper, Professor Gilson cautioned against the blind replication, which is unfortunately often overlooked. He concluded with the statement that policymakers "should not blindly seek to replicate the historical source of Silicon Valley's success. Given the opportunity to act by design rather than by historical accident, the better approach may be to craft a legal infrastructure that has the flexibility to accommodate the different balance between external economies and intellectual property rights protection that may be optimal in different industries."¹¹⁵ While Silicon Valley firms cannot rely on CNCs to protect trade secrets, they have other legal means such as trade secret/patent litigation and the use of employee equity compensation to protect intellectual assets and bind employees.¹¹⁶ Any policy attempt to ban CNCs should take into account any substitutes for enforceable noncompetes. China's intellectual property protection regime remains weak, albeit improving. The way that employee equity compensation works in China's tech ecosystem is quite different from the Silicon Valley way. Startup companies may use CNCs as a tool of last resort against threats of trade secret leakage while other tools may not function or even exist. Many developing countries other than China may face similar institutional challenges including weak intellectual property protection and distorted use of employee equity compensation. Fundamentally, the Chinese experience suggests that the relationship between CNCs and labour mobility may be complex and obscured by non-legal factors such as market conditions.

Whereas the operation of CNCs in China's tech sector challenges the necessity to copy Silicon Valley, the buyback norm among Chinese tech startups exemplifies a deformed replication. Chinese tech startups transplant employee equity compensation from Silicon Valley.

¹¹⁵ Gilson (n 28) 629.

¹¹⁶ Barnett and Sichelman (n 110).

However, the contractual transplant mutates in China's political climate and develops a buyback norm that may significantly weaken the original function – incentivizing and binding employees. On its face, the ESOP appears merely a contractual arrangement between the employer and its employees. However, the ESOP is not a simple contract. The design and implementation of the contract require sophisticated institutional supports. Global discussion about how to replicate the stock option element of the Silicon Valley model focuses on tax law reforms.¹¹⁷ The standard tax reform recommendations are to allow employees to defer tax until they sell the shares (instead of taxation at the time of granting or exercising the option) and to treat profits made from the sale of the shares as a capital gain rather than employment income. However, the Chinese experience shows that the challenge of replication is more than technical legal rules but rooted in politics and business culture.

While the buyback norm is an expedient way to solve some institutional restraints, it poses its own threats to promoting innovation. If the buyback norm currently represents an equilibrium in China's tech startup ecosystem, what forces might destabilize it? The norm might change with legal-political conditions, business culture, and/or market. As illustrated, the buyback norm emerges as a response to the state's strict control over foreign exchange and foreign investment. These regulatory areas are full of national interests and other political concerns. In recent years, the Chinese government has increasingly tightened its control over foreign exchange in the fear of mass outflow of capital possibly resulting in economic, social and political instability and ultimately threatening the Chinese Communist Party's ruling. The

¹¹⁷ See e.g., Magnus Henrekson and Tino Sanandaji, 'Stock Option Taxation: A Missing Piece in European Innovation Policy?' (2018) 51 *Small Business Economics* 411; Jinyan Li, 'International Mobility of Highly Skilled Workers in the Canadian Context: Tax Barriers and Reform Options' (2009) Government of Canada Skills Research Initiative - Working Paper Series 2006 D-21 <http://publications.gc.ca/collections/collection_2011/ic/Iu182-2-2006-D-21-eng.pdf> accessed on 9 November 2019 (comparing employee stock option taxation in the U.S., Canada and China).

restrictions over foreign investment in tech sectors have been a source of conflict in the U.S.-China trade war. Still, the Chinese government maintains its entire ban on foreign investment in online news media, online audio/video services and online information broadcasting services, etc. The restrictions serve the government's interests in media censorship and suppression of freedom of speech. In this regard, the norm change through the relaxation of the state's control over foreign exchange and foreign investment may encounter political feasibility problems, at least within the foreseeable future.

As noted, the buyback norm is partly a response to the strict access to China's domestic stock market. Tech startups often have difficulties to meet the listing requirements of the major stock exchanges in China. The launch of the Star Market of Shenzhen Stock Exchange (SEE) in July 2019 might bring some potential for the norm change. The SEE Star Market eases the listing requirements for high-tech companies and thus removes some of the reasons for the buyback norm. The SEE Star Market adopts a registration system instead of an approval system, which reduces some uncertainties in the listing application. It allows the dual-class share structure and cross listing by Hong Kong listed companies; it removes the profitability requirement under some circumstances; it does not pierce shareholding platforms to count the number of shareholders if certain requirements are met.¹¹⁸ As of the time of writing, the SEE Star Market has had 70 companies since its launch. It is too early to judge how the SEE Star Market will develop and whether it will bring a norm change. Nevertheless, some commentators are concerned that the SEE Star Market will likely repeat the failed experience of its predecessors (ChiNet and the National Equity Exchange and Quotation system), suffering liquidity problems

¹¹⁸ For the rules of the SEE Star Market, <<http://star.sse.com.cn/lawandrules/lawandrules/marketrules/>> accessed 9 November 2019.

and failing to attract high-quality firms.¹¹⁹ If the SEE Star Market does not thrive and thus overseas listing remains the preferred exit strategy for tech startups, the buyback norm will probably continue as an expedient solution to the state's strict control over foreign exchange and foreign investment.

In addition, the buyback norm might evolve if business culture changes. Under the current legal rules, Chinese tech startups are permitted to let departing employees to keep their options and exercise upon listing. Indeed, some tech startups occasionally adopt this approach. A good example is Xiaomi, a Chinese tech company that went public in Hong Kong in 2018. In its early startup stage, Xiaomi's board of directors allowed departing employees to retain their vested options/shares partly because some of the board members who had work experience in Silicon Valley appreciated the prevailing practice in Silicon Valley and preferred to follow suit.¹²⁰ It requires special arrangements (such as delaying the exercise of stock options or delaying the registration of shareholder status) and good faith commitment of the employer. As noted, it is not uncommon that Chinese startups use the delay strategy with the ulterior motive to avoid honouring stock options granted to employees. The complexity of ESOPs coupled with the imbalance of bargaining power between employers and employees gives ample room for employers to take advantage of employees. The exploitation risks significantly increase when the business culture prefers informality and falls short of good faith.

Finally, the market might push for the norm change. The buyback norm could not sustain if tech workers refused to play by the rules. ESOPs remain quite new in China and often the legal

¹¹⁹ Mike Bird, 'China's STAR Market Is Falling to Earth' (*Wall Street Journal* 22 October 2019) <<https://www.wsj.com/articles/chinas-star-market-is-falling-to-earth-11571732956> > accessed 9 November 2019; Hudson Lockett, 'Shanghai's Star Market Fades after Initial Success' (*Financial Times* 29 September 2019) <<https://www.ft.com/content/f5285292-e112-11e9-9743-db5a370481bc> > accessed 9 November 2019.

¹²⁰ Interview with a lawyer who participated in Xiaomi's ESOP design.

documents are written in English. Many Chinese tech workers have no clear idea about their rights under the plans. The terms of ESOPs are written by employers with advice of their hired lawyers and consultants and unsurprisingly are in favour of employers' interests. Rank-and-file employees often have little power to bargain for changes in the contractual terms. In recent years, a growing number of Chinese tech workers have come to perceive the buyback norm as a trap and thus avoid startups.¹²¹ If such workers grow to a critical mass that disrupts the supply of qualified workers in the startup labour market, the buyback norm will probably be altered or even abandoned.

Replicating Silicon Valley is a grand project that entails many institutional borrowings, including law, culture, politics, market, etc. As comparative law scholarship often cautions, there is unlikely a one-size-fits-all model. Policymakers should find their own ways based on comparative advantages rather than blindly following Silicon Valley to create the desirable conditions for innovation.

Conclusion

Human capital is critical to technology-led economic development. This article takes an institutional perspective to investigate the bewildering legal infrastructure of human capital in China's startup ecosystem. China looks at Silicon Valley but it still does its own way, whether

¹²¹ Many posts in the online discussion forums explicitly use the term "traps" (*keng* or *xianjing*) to refer to the terms of stock options. Some tech founders have observed that more and more tech workers avoid startups and prefer cash compensation because they feel unfairly treated in equity compensation. See e.g., Hong Jiang, 'Talking about Departing Employees' Stock Options' (*Zhihu* 15 June 2016) <<https://zhuanlan.zhihu.com/p/21356315>> accessed 9 November 2019; 'Founders Don't Be Stinky, Partners Be Careful' (*Android China* 24 February 2017) <<http://www.androidchina.net/6541.html>> accessed 9 November 2019. Legal commentators also noted the recent rise of stock options disputes and suggested that it would be a serious problem if more tech workers realized their rights. Fushuai Zhao, 'Stock Options Often Hard to Cash In, Mainland's "Two-Innovation Policy" Likely Stumbled' [*guquan qiquan pinfa duixian nan, dalu "shuang chuang" kong yuzu*] (*Phoenix Weekly* 26 July 2015) <<http://www.ifengweekly.com/detil.php?id=2888> > accessed 9 November 2019.

intentionally or inadvertently. Besides China, many startup ecosystems around the world are rising, such as “Silicon Island” (i.e., Taiwan), “Startup Nation” (i.e., Israel), and “Silicon Plateau” (i.e., Bengaluru in India). How do the startup ecosystems differ from Silicon Valley and from each other, especially in comparative law perspective? Although existing scholarship, mostly written by non-legal scholars, has sketched the basic contours of some of the promising systems, it often overlooks the legal infrastructure of human capital.¹²² Existing literature on the role of law in generating and protecting human capital for the innovation economy has virtually exclusively focused on comparing different states within the United States. The international perspective of this article may provide fresh insights that are hidden from a purely U.S. lens.

¹²² Terence Tsai and Borshuan Cheng, *The Silicon Dragon: High-tech Industry in Taiwan* (Edward Elgar 2006); Dan Senor and Saul Singer, *Start-up Nation: The Story of Israel's Economic Miracle* (Twelve 2011); AnnaLee Saxenian, ‘Bangalore: The Silicon Valley of Asia?’ (2001) Stanford Centre for International Development Working Paper No. 91 < <https://kingcenter.stanford.edu/sites/default/files/publications/91wp.pdf> > accessed 9 November 2019. None of the work discusses any legal arrangements for promoting human capital in the tech ecosystem.