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Catching the Unicorn: an overview of the Chinese high-value startups 'system

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前言

根据中国政府，独角兽企业的定义可归纳为四点:

一）市场上创立的时间短（小于 10 年）

二）企业估值超过 10 亿美元

三）只获得过私募投资，且未上 市

四）在中国境内注册，具有法人资格的企业。

当前，中国经济已由高速增长阶段转向高质量发展阶段。为了建设创新型国家这种企业无疑是一个关键因素， 其实独角兽企业新兴科技驱动经济的活力， 反映了行业的发展趋势和中国或一个中国地区的创新实力。另外， 独角兽企业不局限于自己成长，还能推动上下游相关产业的发展和融合， 提高就业率。根据国际研究独角兽企业 的机构 CB Insights 发布的《全球独角兽企业榜单》，美国和中国分别位居第一和第二。 本博士论文的主题就是介绍并详细描述目前中国的情况，如何中国初创企业的发展是真么快的。 实际上，中国初创企业背后，有产业政府， 很多的政府补贴和收费低廉的银行信贷。特别是，我来讨论关于风险投资，即创业生态系统中至关重要的金融工具。 通过风险投资，也成为创业投资， 公司或者基金可以投入大量资金被认为具有高增长潜力已经表现出高增长的创业公司。 根据许多研究，充满活力的风险投资市场是兴旺环境的必要条件。

以习近平思想为指导，中央政府在地方政府的帮助下正在实施有助于改善企业环境的政策，以实现这种新的经济发展形式。 他们希望加快建立有助于经济发展的基础设施，让市场自由支配资源，更好地发挥政府作用，了解企业创新能力的关键要素和相关问题，巩固正确的政策， 增强企业家的信心，为实现高水平科技自立自强，促进经济稳定增长和高适量发展提供很大的支持。 他们还希望建立一种将企业整合到科技创新决策过程中的机制，引导企业加强对关键核心技术的研究，增加金融支持，如风险投资基金，以促进创新，增加工业，大学，研究机构和中小大型企业之间的合作， 提高公司的国际化和创新水平。一些骨干企业将成为国家科技发展的战略力量，许多中小企业将成为重要的创新来源，创造一个更加平等和公平的环境。

我们可以将本博士论文分成两个部分:

第一步）首先，我对独角兽企业背后的政治形势进行了背景分析，然后，我创建了一个表格， 其中包括位于中国的 173 家独角兽企业。该表格写出了公司的名称， 成立日期，省市，行业，基金金额，募集资金的轮次，选定的投资者价值。在创建这个表格之前，我必须首先决定信任哪个来源。 实际上， 有很多来源已经开发了光宇这类公司的数据。 很多时候，这组数据根本不相似。为了避免了混淆，我决定了将 CB Insights 作为我的主要来

源。 我是用过的另外两个来源，Crunchbase 和 Failory，都是从属于的。最后我们对结果进行了分析。 得出的结论是:

- 大多数独角兽公司都是在 2011 年之后成立的， 但是第一个独角兽公司是在 1995 年成立的。
- 大多数独角兽公司位于北京和上海，但这类公司也有相当一部分注册在广东，浙江，江苏和四川。此外，这些公司在每个省份的定位并不相同。 事实上，在广东模式种下，独角兽企业遍布全省而在浙江模式下独角兽企业集中在一个城市。这一事实导致了许多内部差异。
- 独角兽企业分布在各种这样的行业。在国家层面上，最突出的部门是工业部门，但消费者和零售部门以及科技企业部门也很重要，而最有价值的独角兽企业属于媒体部门。地方层面的部门分布非常不同: 北京最重要的部门就是消费者和零售部门,而在上海, 广东, 浙江 和江苏 独角兽企业更集中在工业部门。此外, 企业在领土上的分布方式并不是相同的。
- 平均而言， 一家中国独角兽企业的基金金额为 7.90 亿美元而其募集资金的轮次几乎为 7 轮。每个独角兽企业的领地的平均基金金额和墨迹基金的轮次差异很大。此外，不同的部门也有不同的平均值。在同一省份也可能有很大差异。例如，一家广东独角兽企业的平均基金金额为 7.16 亿美元而其平均集资金的轮次为 5.7 轮，但一家深圳独角兽企业的平均基金金额为 11.45 亿美元而其平均集资金的轮次为 6 轮. 一家广州独角兽企业的平均基金金额却为 4.8 亿美元而其平均集资金的轮次为 5.6 轮。
- 中国独角兽企业的最重要投资者是风险投资和私人股权投资， 其次是公司，投资管理和投资行业。这些投资者大多数来自中国，但是数据显示， 许多最重要的投资者来自美国。 中国互联网企业三巨头简称 BAT （百度 Baidu， 阿里巴巴 Alibaba，腾讯 Tencent 首字母缩写）也是很重要的投资者，但中央政府已决定严厉制裁他们的垄断行为。 实际上，即使他们在这个系统上投入大量资金，也没有给中小企业留下任何空间。 中美之间日益紧张的关系也使中国失去了许多的美国投资。
- 与世界其他国家一样，在中国独角兽企业的真正价值很难决定。 这主要是因为这类公司的股权结构非常复杂，传统的评估其他公司的方法不能发挥作用。 造成这类公司评估困难的其他原因是宏观经济的快速变化和不够成熟的独角兽企业本身的商业模式。 归根结底，一家企业在股市场上的表现主要取决与该企业的盈利和现金流实力。如果它的商业模式不够成熟的，那么企业的价值就会下降。

第二步）在本章中，我试图形容创造这么多独角兽企业的背景。在第一部分中，我讨论了在创建真么多独角兽企业背后的财务结构。首先我解释了中国股市结构。中国股市可分成三类: 主板市场，二版市场和三板市场。主板市场是最重要的股市，但企业在主板第一西

公开发行股票并上市应遵守非常严格的标准，所以对于创业公司来说很难进入这类市场。反而二板市场和三板市场是专门为帮助这类公司更容易地找到必要的资。然后我说明了风险投资体系和创建企业的过程。如上所述，风险投资对于建立一个健康初创企业的系统至关重要。 我描述了风险投资程序的各个阶段， 即筹款阶段，投资阶段和退出策略阶段。对风险投资资本家退出策略阶段是最重要的。这是因为风险投资资本家通过退出事件回收资金。 我还展示了风险投资私人股权投资之间区别: 风险投资投资的公司比私人股权投资多得多，但是私人股权的投资投资更大。 我还介绍了其他有助于创建企业的实体以及私营公司的发展。 之后，我研究了中国风险投资和私人股权投资环境的特点。其中，最重要的特点是: 一）在中国风险投资和私人股权投资之间没有区别， 二）中国风险投资资本家偏爱 IPO 退出策略，三）政府在风险投资市场中的重要作用， 四） 政府对百度，A 里巴巴和腾讯公司及其风险投资的制裁正在重塑投资格局。 中国风险投资市场目前正处于危机时期。 冠状病毒疫情，中国经济放缓以及中美地缘政治紧张局势加剧， 多是对中国风险投资市场造成负面影响的因素。

在第二部分中， 我讨论了独角兽企业背后的政治背景。我解释了创业生态系统(Entrepreneurial Ecosystem), 一个创新的观念。这可以被描述为一组元素，以模种方式进行协助，从而在特定的领域内实现创业。仅靠政府是不能造成一个创业生态系统，但是它可以通过正确的政策来帮助其产生。之后，我特别强调了科技园的概念以及如何利用它来改进创业企业的系统。 第一个科技园是在美国成立的。 它由大学，企业和研究中心组成，得到了政府的支持。 在中国， 立于北京的中关村是第一个科技园。 它遵循了这种模式 并很快在许多其他省份被效仿。科技园的设计也是为了提供高质量的生活水平。这样，它们也将对当地的专业工作力量具有吸引力。 最近政府还考虑了这些科技园对环境的影响。

最后， 我得出的结论是，即使中国采用了许多西方的金融和经济工具，它已经将它们整合在一个新的系统中。中国创建的独角兽企业生态是非常复杂的，与美国的生态并不同。政府，特别地方政府， 直接参与了这类公司的创建和发展。通过 个人关系和共同价值观的系统，他们创造了一个独特的现实。 在这个现实中私人与公众以和谐的方式紧密相连。

总而言之， 我很感谢有机会进一步研究这个非常有趣的话题。 我希望这篇论文能为中国体系的这一重要特征提供一个影响很大的内幕。

Chapter 1

1.1 Unicorns in China

The term Unicorn in finance usually refers to a privately held startup whose value in less than ten years managed to surpass $1 billion[1]. It was first popularized by the founder of "*Cowboy Venture"* Aileen Lee that in November 2013[2] published the article " *Welcome to the Unicorn Club: Learning from Billion Dollar Startups*"[3]. Unicorns quickly became a very important subject for the entrepreneurial literature since growth is the main concern of entrepreneurship, and understanding how a new firm can achieve hypergrowth thanks to this phenomenon is becoming crucial[4]. This kind of enterprise is also considered to be a focal point for the police-makers thanks to the fact that high-growth companies have been associated with job creation and GDP growth. The media attention that this type of firm tends to attract it is also quite alluring for government officials.[5]

In a country like China, where the local economy have started to show signs of decline after years of booming and it's now dealing with a very complicate restructuring, Unicorn enterprises are playing an even more prominent role. As the growth power of a new economy, these new type of companies are in charge of guiding the technology revolution and the industrial format and

[1] Chen James, April 29, 2023, "Unicorn: What It Means in Investing, With Examples 2023", https://www.investopedia.com/terms/u/unicorn.asp, Investopedia, consulted 10/1/2023.
[2] Yonghong Jiang (2019). Supporting Policy of Breeding Unicorn Enterprise in Shaanxi Province.
[3] Lee Aileen, November 2, 2013, "Welcome to the Unicorn Club: Learning from Billion-dollar Startup", https://techcrunch.com/2013/11/02/welcome-to-the-unicorn-club/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAEBOEeslfpdtM0ViXbGq1yW8JrbUZqUOUmc7GwUysS4ky_Nzky1hLO7tRkJMr8l5mvyPXyPSdgw1bEu3dy8_yqzpXFOLCiuOXpwCSGa4hegyESDivYr02FOOgzLCbj260AYOk6vCADbxX2pXUpYW7FecdWb9-wG2yyslCf0KShqm, TechCrunch, consulted in 10/01/2023
[4] Penrose, E. T. (1959). The theory of the growth of the firm. New York: Sharpe.
[5] Wennekers, S., and R. Thurik. 1999. Linking entrepreneurship and economic growth. Small Business Economics 13 (1):27–56.

model upgrade[6]. For these reasons, every level of the Chinese government is involved in helping and facilitate their development, as we can see in a document redacted by the Chinese Ministry of Science and Technology (科学技术部) and the Ministry of Finance (财政部): 企业技术创新能力提升行动方案（2022—2023 年）(*The 2022-2023 Action Plan for Improving the Technological Capabilities of Enterprises*). This plan is also to be intended as a part of a bigger government effort concerning the entire Science and Technological system, the "科技体制改革三年攻坚方案" (*Three Years Plan for the Reform of the Science and Technological System*).

From this document we can also see the new trends that are emerging in China to further improve this reality and make the country even more competitive:

> "以习近平新时代中国特色社会主义思想为指导，全面贯彻党的十九大和十九届历次全会精神，完整、准确、全面贯彻新发展理念，加快构建新发展格局，充分发挥市场在资源配置中的决定性作用，更好发挥政府作用，聚焦企业创新能力关键环节，突出问题导向，强化精准施策，加大激励力度，优化创新服务，提振发展信心，引导支持各类企业将科技创新作为核心竞争力，为实现高水平科技自立自强、促进经济稳定增长和高质量发展提供有力支撑。到 2023 年底，一批惠企创新政策落地见效，创新要素加速向企业集聚，各类企业依靠科技创新引领高质量发展取得积极成效，一批骨干企业成为国家战略科技力量，一大批中小企业成为创新重要发源地，形成更加公平公正的创新环境。[7]"

> "We shall follow Xi Jinpin thoughts about Socialism with Chinese characteristics for the new era and fully implement the spirit of the 19th Pary Congress and the various plenums of its Central Committee, and wholly realize the new concept of development in an accurate and comprehensive way . Accelerate the construction of new development structures, give the market free reign to allocate the resources, elaborate a better role for the government, focus on the key elements of enterprises' innovation capabilities, highlight the problems, consolidate accurate policies, strengthened the incentives, optimize innovative services, boost confidence in the development. Guide and support every kind of

[6] Yonghong Jiang, 2019, Supporting Policy of Breeding Unicorn Enterprise in Shaanxi Province.
[7] Chinese Ministry of Science and Technology(科技部) & Chinese Ministry of Finance (财政部), "科技体制改革三年攻坚方案" (*Three Years Plan for the Reform of the Science and Technological System*) August 5, 2023, https://www.gov.cn/zhengce/zhengceku/2022-08/15/content_5705464.htm, consulted 10/1/2023.

enterprise in making technological innovation into their core competitive factor. Provide strong support to the one that achieve an high level of science and technology self-reliance and promote a stable economic growth and high-quality development. By the end of 2023, a set of innovative policies designed to benefit the enterprises will take effect and thanks to them enterprises will be able to accelerate the gathering of innovative factors of production, various company will rely on technological innovation to achieve high-quality development and will obtain positive results. Some backbone enterprises will become the national strategic Science and Development force, many small and medium enterprises (SMEs) will become important sources of innovation, creating a more equal and fairer environment.

From these lines we can see the full commitment of the Chinese government to create a new economic model based on innovation that will be formed by a national strategic force of backbone companies and by many SMEs. In the same document there is also detailed the nature of this action plan, divided in ten crucial point:

1. **Promote innovative policies that benefit enterprises**: increase the reduction of R&D expenses and tax incentives for high-tech enterprises. Accelerate the implementation of the new reforms already measured in Zhongguangcun. Improve State Owned Enterprises (SOEs) and create a better environment for private enterprises. Use as a valuation method for officials 'promotion the capacity of the local supervisor to implement those policies.
2. **Establish a mechanism to integrate the enterprises in the decision-making process about scientific and technological innovation:** create a forum system for the entrepreneurs to consult on technological innovation, organize regularly communication and conduct inquiry and consultation. Build a network of think-tanks. Intensify the promotion and implementation of national plans. Pay more attention to the needs and opinions of the enterprises of key industries to develop a more precise annual guide for the National Science and Technological Plan (国家科技计划). Increase the proportion of science and technological experts in key projects closely related to industrial development.
3. **Lead enterprises to intensify research on key and core technologies (关键核心技术)**: develop a directory about the key areas that national enterprises should concentrate on. Enterprises should be encouraged to take the lead and explore new way for the government and social capital to cooperate. Support digital economy (数字经济) enterprises and

platform economy (平台经济) enterprises to strengthen hard/technology(硬科技) innovation。The Central State Owned Enterprises and Private Owned enterprises leaders in the technological sector must be supported and encouraged to collaborate with each other. Strengthen the evaluation criteria, the level of conformity and the optimization of the National Engineering Research center (国家工程技术研究中心).

4. **Support Basic Cutting-Edge Research**: implement tax incentives for the enterprises that invest in basic research. Optimize the administration of the National Nature Science Foundation of China joint found for Enterprises' innovation and development and encourage cooperation with the enterprises. Support companies to participate in the construction of laboratories through research cooperation, co-construction of platforms and achievements sharing. Accelerate the reconstruction of National Key Laboratories (全国重点实验室) in accordance with the new standards. Develop Pilot project to build technological parks (科技园) for future industries and facilitate the cultivation of enterprises specialize in cutting-edge research.
5. **Promote SMEs as important sources of innovation**: in the context of the 14th Five-Year Plan (十四五) set up special project for SMEs. Support the transfer and transformation of technological achievements through the National Found for Technology Transfer and Commercialization (国家科技成果转化引导基金) to improve the level of technology innovation. Support the development of "little giant"（小巨人) enterprises and "Single-item champions" enterprises (单项冠军企业). Improve the "Hackerspace-Incubator-Accelerator-Tech Park" incubation chain and promote the "investment + incubation" model.
6. **Increase the S&T talents in enterprises:** optimize strategic guidance and services for entrepreneurs and encourage them to recruit more S&T talents and postdocs. Promote S&T talents in SOEs.
7. **Increase financial support such as venture capital funds to promote innovation:** Establish coordination mechanism for the financial support of technological innovation. Encourage angel investments (天使投资) and venture capital (风险投资), implement tax policies for venture capital and lead their investments towards early stage-companies (投

早), small companies (投小) and hard-tech companies (投硬科技). Use in an efficient way relending and special bonds. Promote new financial S&T products such as enterprise innovation score-based loans. Implement insurance for R&D insurance, intellectual property insurance and others. Local government should build S&T enterprises information platform.

8. **Making the Technological resources more accessible:** increase the accessibility to national major scientific infrastructures, scientific instruments and basic patent information. Support local government to supply public data resources. Encourage innovative cities, national independent innovative zones, national agricultural high-tech zones, national high-tech development zones and national AI innovation and development pilot zones to increase cooperation with enterprises and release more information.
9. **Increase the cooperation between industry, universities, research institutions, users and small, medium and large-sized enterprises:** support universities, enterprises and research institutes to build new R&D institutions. Promote the transformation of S&T achievements into practical applications. Integrate innovation platforms and promote cooperation between upstream and downstream enterprises in the production chain. Promote competition among enterprises.
10. **Increase internationalization and innovation:** promote various internationalization method such as cooperation between enterprises in the National High-Tech development zones and National technological park in the Belt and Road Initiative countries.

This plan perfectly shows the complexity and stratification of the Chinese system. The combine efforts of both the Ministry of Science and Technology and the Ministry of Finance highlights how crucial is to achieve results in this field, in which Unicorns enterprises represents the pinnacle. The seventh point is particular important for this work: Venture capital and Private Equity (VCPE) are essential for the creation of an healthy startup environment[8] and the peculiarity of the Chinese VCPE system will have to be explore deeply.

[8] McNeill, D. (2016), Governing a city of unicorns: technology capital and the urban politics of San Francisco. *Urban geography*, *37*(4), 494-513.

Overall, we can say that China is already a startup friendly country, and it's now the second largest one in terms of Unicorn enterprises, just behind the US[9]. According to an article by Teng Bingsheng, Professor of Strategic Management at CKGSB (Cheung Kong Graduate School of Business), from 2015 to 2022 the average annual growth rate of Unicorn companies in China was 45%, higher than the one in the US (32%). Professor Teng has also presented five main reasons behind the Chinese Unicorns impressive growth:

1. China is the only country outside the US with the ability of developing all-round high technological capabilities and it's now became a "technology-driven development" country.
2. The life science sector is rapidly changing and average life expectancy is expected to increase. Sustainable energy resources are also increasingly being developed for commercial use.
3. Changes in the global economy and capital environment.
4. The development of China's Macro Environment through national plans, dual circulation strategy and consumption upgrading has facilitate investments.
5. The building of new infrastructures and the formulation of polices on finance and taxation to facilitate the creation of an enterprise-friendly environment in many industries[10].

All of these factors contributed in the creation of a very unique financial and economic landscape, characterized by many peculiar features. In this thesis, I will examine all of this factors while giving them a more concrete edge. To do so, I have chosen to examine all of the existing Unicorns in China nowadays one by one. I will then analyze the results while trying to decipher the motivations behind them. Nonetheless, before going one with the actual analysis, I must first defined in a more complete way what I'm going to considered as a Chinese Unicorn.

[9] CB Insights, The Complete List of Unicorn Companies, September, 2023 https://www.cbinsights.com/research-unicorn-companies, consulted 10/1/2023.

[10] Teng Bingsheng, October 27, 2022, "China's Tech-based Unicorn Companies are popular for Investment", https://english.ckgsb.edu.cn/knowledge/article/chinas-tech-based-unicorn-companies-are-popular-for-investment/ , CKGSB Knowledge, consulted 10/1/2023.

1.2. Definition

An official description of what can be considered a Chinese Unicorn can be found in an article published on May 2017 by the "People's Daily", the official newspaper of the Central Committee of the Chinese Communist party. It this editorial titled "科技部正式发布 2017 独角兽榜单：谁是新的大赢家" (*The official list of unicorns enterprises published in 2017 by the ministry of science and technology: who are the new winners?*), we can find a list of standards that an unicorn enterprise must possess:

> "据悉，该榜单定义的中国独角兽企业标准有：一是在中国境内注册，具有法人资格的企业;二是成立时间不超过十年(2006 年及之后成立);三是获得过私募投资，且尚未上市;四是符合前三个条件，且企业估值超过 10 亿美元的称为独角兽;五是符合前三个条件，且企业估值超过 100 亿美元的称为超级独角兽。[11]"

> "According to the reports, an enterprise must respects the following standards to be considered a unicorn: 1) must be registered in China with legal personality; 2) from the time of its establishment should not have passed more than ten years, so that means that will be considered only enterprises founded in 2006 and behind; 3) it must have obtained private equity financing and not have been listed on the market yet; 4) behind being aligned with the previous conditions, a unicorn enterprise must also surpass $1B in value; 5) Behind being aligned with the previous conditions, if an enterprise surpass $10B in value, it will be considered a Super Unicorn"

These points, while generally being in line with the previous definition, add a level of complexity to this research, since they not only introduce the concept of Super Unicorn enterprises, a sub-category of the Unicorn enterprises, but, most importantly, they present two limitations. The first one is a legal one and can be seen as quite intuitive and easy to integrate with the more generic definition, but the second one is rather challenging, since it's a time limitation concerning the companies' foundation year, and there are many example of Unicorns that have been established before 2006[12].

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[11] Wang Jing & Yan Feng, 2017, 科技部正式发布 2017 独角兽榜单谁是新的大赢家 (The official list of unicorns enterprises published in 2017 by the ministry of science and technology: who are the new winners?), http://it.people.com.cn/n1/2018/0324/c1009-29886916.html, people.cn, consulted 10/1/2023.

[12] CB Insights, The Complete List of Unicorn Companies, September, 2023 https://www.cbinsights.com/research-unicorn-companies, consulted 10/1/2023.

Furthermore, In a paper by Jiang Yonghong, "*Supporting Policy of Breeding Unicorn Enterprise in Shaanxi Province*"[13], I've found another list of characteristics that a Unicorn must possess. The list, made by the Torch Center of the Ministry of Science and Technology in 2016, highlights four key elements:

- A Chinese Unicorn should be an enterprise registered in China with legal personality.
- The establishment time should not be more than ten years.
- The enterprise should not have been listed yet.
- Its value must exceed $1 billion.

As we can see, these four points do not include the time limitation. Since I have not found this limitation in any other sources that I have used for this work (like CB Insight, TUNGEE, Failory, CKGSB, …) I am going to consider just the ten years limit and not the one concerning the foundation year. As for the concept of Super Unicorn I'm going to expand the previous definition using the terms of Decacorn and Hectocorn which, according to CB Insights, can be respectively defined as Unicorns valued at over $10 billion and Unicorns valued at over $100 billion[14].

1.3 Unicorns Table description

One of the most important goals of this work is to analyze the Unicorn phenomenon in a more concrete, realistic way. To achieve this important result, I needed to analyze this trend in all of its complexity, using real data, confronting real enterprises, collecting and schematizing all the important information that we have about these realities in a coherent and accessible way. In the end I have decided to create a table that will serve as a guide for my research, comprehensive of all the elements necessary to understand the current situation.

First, I had to determine what kind of information were crucial for my analysis:

[13] Yonghong Jiang (2019). Supporting Policy of Breeding Unicorn Enterprise in Shaanxi Province.
[14] CB Insights, The Complete List of Unicorn Companies, September, 2023 https://www.cbinsights.com/research-unicorn-companies, consulted 10/1/2023.

1. **Company Name and foundation year**: to identify the company and to see how the phenomenon has changed during the years, if the majority of these enterprises had been founded in the same period of time or not.
2. **Province/City**: to see the distribution on the Chinese territory of this phenomenon.
3. **Sectors**: to highlight the distribution in the different sectors.
4. **Founding/ Founding rounds:** to see the founding amount that the enterprises have managed to rise in how many rounds. To understand if there is a difference in terms of geography or industrial sector.
5. **Select investors:** to highlight the most important investors group in China, if they are public or private, if they are local or foreigner.
6. **Value**: To see the real value of this company nowadays.

After this selection, I had to choose the correct sources from which gain this data. This was the most difficult part, since there are many sources about this topic, each of them with a different set of data. Sometimes the information reported are quite similar, most of the time the differences are striking. To overcome this problem I have decided to establish a main source as the most important reference for this table: the CB Insight Unicorn list, considered to be the definitive list for Unicorn companies[15]. According to its own site, CB Insights is a market intelligence platform founded in 2009 that analyzes data points on venture capital, startups, patents, partnerships and tech news[16]. In case of not coinciding information, this table will presents only the one from CB Insights, precisely the September 2023 list.

I've also integrated in this table the data found in two other platform:

1. **Failory**: an internet company for startup founders specialized in analyzing startup[17].
2. **Crunchbase**: a leading provider of information about public and private enterprises, from early-stage star-up to the Fortune 1000[18].

[15] Gornall, W., and I. A. Strebulaev. 2017. Squaring venture capital valuations with reality. no. w23895. Cambridge, MA: National Bureau of Economic Research.
[16] CB Insights, https://www.cbinsights.com/who-we-serve/function/corporate-strategy/, consulted in 10/01/2023
[17] Failory, https://www.failory.com/, consulted in 10/01/2023.
[18] Crunchbase, https://www.crunchbase.com/, consulted in 10/01/2023.

1.4 Unicorns Table

Company (foundation year)	Province/ City	Sector	Founding/ Founding rounds	Selected investors	Value
1) Bytedance (2012)	Beijing/ Beijing	Content creation, data mining, Internet	$7,440.00M over 13 rounds	Sequoia Capital China, SIG Asia Investments, Sina Weibo, SoftBank Group	$225.00B
2) Xiaohongshu (2013)	Shanghai/ Shanghai	E-Commerce, Mobile Apps, Social	$917.50M over 9 rounds	GGV Capital, ZhenFund, Tencent	$20.00B
3) Yuanfudao (2012)	Beijing/ Beijing	E-Learning, EdTech, Tutoring	$4,044.20M over 11 rounds	Tencent Holdings, Warbug Pincus, IDG Capital	$15.50B
4) DJI Innovations (2006)	Guangdong / Shenzhen	Aerospace, Electronics, Drones, Manufacturing, Wireless	$1,135.00M over 6 rounds	Accel Partners, Sequoia Capital	$15.00B
5) Yuanqi Senlin (2016)	Beijing/ Beijing	Food and Beverage	$721.31M Over 7 rounds	Sequoia Capital China, Longfor Capital, Gaorong Capital	$15.00B

6) Bitmain Technologies (2013)	Beijing/ Beijing	Application Specific Integrated Circuit (ASIC), Bitcoin, Electronics, Manufacturing, Semiconductor	$450.00M over 2 rounds	Coatue Management, Sequoia Capital China, IDG Capital	$12.00B
7) ZongMu Technology (2013)	Shanghai/ Shanghai	Automotive, Autonomous Vehicles, Robotics	$367.83M over 9 rounds	LTW Capital, Legend Capital, Qualcomm Ventures	$11.40B
8) Chehaoduo (2015)	Beijing/ Beijing	Automotive, E-Commerce, Online Auctions	$4,304M over 13 rounds	Sequoia Capital China, GX Capital	$10.00B
9) HEYTEA (2012)	Guangdong / Shenzhen	Food and Beverage, Tea	$579.23M over 7 rounds	Sequoia Capital China, Tencent Investment, BA Capital	$9.28B
10) Xingsheng Selected (2009)	Hunan/ Changsha	E-Commerce, Food and Beverage, Retail, Shopping	$5,040.00M over 9 rounds	KKR, Tencent Holdings, Sequoia Capital China	$12.00B
11) Wedoctor (2010)	Zhejiang/ Hangzhou	Health Care, Medical	$1,936.00M over 10 rounds	Tencent, Morningside Group	$7.00B

12) Ziroom (2011)	Beijing/ Beijing	Real Estate, Rental, Rental Property	$2,121.00M over 3 rounds	Sequoia Capital China, Warburg Pincus, General Catalyst	$6.60B
13) SVOLT (2018)	Jiangsu/ Changzhou	Battery, Electric Vehicle, Energy Storage, Manufacturing	$3,207.00M over 4 rounds	IDG Capital, Bank Of China Group Investment, SDIC CMC Investment Management	$6.51B
14) Royole Corporation (2012)	Guangdong / Shenzhen	Electronics, Manufacturing, Mobile Devices	$1,414.00M over 16 rounds	Warmsun Holding, IDG Capital Partners	$6.00B
15) Easyhome (1999)	Beijing/ Beijing	Furniture, Home Renovation, Retail	$2,085.20M over 2 rounds	Alibaba Group, Boyu Capital, Borui Capital	$5.78B
16) Lianjia (2001)	Beijing/ Beijing	Home Decor, Property Management, Real Estate	$1,701.26M over 6 rounds	Tencent, Baidu, Huasheng Capital	$5.77B
17) Hello TransTech (2016)	Shanghai/ Shanghai	Apps, Last Mile Transportation, Ride Sharing, Travel	$2,701M over 15 rounds	Ant Financial Services Group, GGV Capital	$5.00B

18) Horizon Robotics (2015)	Beijing/ Beijing	Artificial Intelligence, Autonomous Vehicles, Machine Learning, Robotics	$3,200.00M over 15 rounds	Hillhouse Capital Management, Linear Venture, Morningside Venture Capital	$5.00B
19) Chipone (2008)	Beijing/ Beijing	Electronics, Mobile, Product Design	$1,023.88M over 7 rounds	China Grand Prosperity Investment, Silk Road Huacheng, Oriza Equity Investment	$4.73B
20) UBTECH Robotics (2012)	Guangdong / Shenzhen	Artificial Intelligence, Industrial Engineering, Machine Learning, Robotics	$1,048.00M over 10 rounds	CDH Investments, Goldstone Investments, Qiming Venture Partners	$4.58B
21) VIPkid (2013)	Beijing/ Beijing	E-Learning, Education, Online Portals, Primary Education	$975.49M over 8 rounds	Sequoia Capital China, Tencent Holdings, Sinovation Ventures	$4.50B
22) WeRide (2017)	Guagdong/ Guangzhou	Artificial Intelligence, Autonomous Vehicles,	$1,309M over 11 rounds	Atop Capital, IDInvest Partners, Qiming	$4.40B

		Computer, Software		Venture Partners	
23) Miaoshou Doctor (2015)	Beijing/ Beijing	Health Care, Medical sector	$971.14M over 8 rounds	Sequoia Capital China, Qiming Venture Partners, Tencent Holdings	$4.25B
24) MEGVII (2011)	Beijing/ Beijing	Artificial Intelligence, Facial Recognition, Image Recognition, Machine Learning, Robotics, Software	$1,358.00M OVER 8 rounds	Ant Financial Services Group, Russia-China Investment Fund, Foxconn Technology Company	$4.00B
25) Hozon Auto (2014)	Shanghai/ Shanghai	Automotive, Electric Vehicle, Manufacturing	$4,525M in 12 rounds	HD Capital, Qihoo 360 Technology, China Fortune Land Development	$3.95B
26) Medlinker (2014)	Sichuan/ Chengdu	Health Care, Medical sector	$764.74M over 6 rounds	China Health Industry Investment Fund,	$3.92

				China Renaissance, Sequoia Capital China	
27) Abogen Biosciences (2019)	Jiangsu/ Suzhou	Biotechnology, Genetics	$1,134M over 5 rounds	Hillhouse Capital Management, SoftBank Group, Qiming Venture Partners	$3.70B
28) Dadi Cinema (2006)	Guangdong / Shenzhen	Digital Entertainment, Film, Media and Entertainment, Theatre	$154.00M over 1 round	Alibaba Pictures Group	$3.24
29) Zuoyebang (2014)	Beijing/ Beijing	Apps, Artificial Intelligence, E-Learning, EdTech, Education, Search Engine, Tutoring	$3,435M over 8 rounds	Sequoia Capital China, Xiang He Capital, GGV Capital	$3.00B
30) SouChe Holding (2012)	Zhejiang/ Hangzhou	Automotive, FinTech, Leasing	$1,282.21M over 8 rounds	Morningside Ventures, Warburg Pincus, CreditEase Fintech	$3.00B

				Investment Fund	
31) KK group (2014)	Guangdong / Dongguan	Apps, E-Commerce, Marketplace, Online Portal	$614.44M over 7 rounds	Matrix Partners China, Bright Venture Capital, Shenzhen Capital Group	$3.00B
32) Yixia (2011)	Beijing/ Beijing	Apps, File Sharing, Mobile	$775.00M over 7 rounds	Sequoia Capital China, Sina Weibo, Kleiner Perkins Caufield & Byers, Redpoint Ventures	$3.00B
33) Meicai (2014)	Beijing/ Beijing	Agriculture, E-Commerce, Food and Beverage	$1,452M in 8 rounds	Tiger Global Management, Blue Lake Capital, ZhenFund	$2.80B
34) Byton (2016)	Jiangsu/ Nanjing	Automotive, Autonomous Vehicles, Electric Vehicle	$1,208M over 7 rounds	FAW Group, Tencent Holdings, Tus Holdings	$2.50B
35) Star Charge (2014)	Jiangsu/ Changzhou	Automotive, Electric Vehicle, Electronics	$125.58M in	Shunwei Capital Partners, China Media Group,	$2.41B

			2 rounds	Guangzhou Huiyin Aofeng Equity Investment Fund	
36) Biren Technology (2019)	Shanghai/ Shanghai	Hardware, Information Technology, Software	$296.22M over 6 rounds	V FUND, IDG Capital, Green Pine Capital Partners	$2.32B
37) G7 Networks (2006)	Beijing/ Beijing	Fleet Management, Information Technology, Logistics, Transportation	$710.00M in 10 rounds	Eastern Bell Capital 32, SDIC CMC Investment Management, Trustbridge Partners	$2.20B
38) Huaqin Telecom Technology (2005)	Shanghai/ Shanghai	Communication Hardware, Mobile devices	missing	Zhangjiang Haocheng Venture Capital, Walden International, Intel Capital	$2.19B
39) YITU Technology (2012)	Shanghai/ Shanghai	Apps, Artificial Intelligence, Finance, Health Care, Machine Learning	$385.12M over 10 rounds	Sequoia Capital China, Banyan Capital	$2.17B

40) ROX motor (2021)	Shanghai/ Shanghai	Automotive, Electric Vehicle, Manufacturing	$ 1,425 M over 7 rounds	Sequoia Capital China, IDG Capital, Qiming Venture Partners	$2.00B
41) Xinchao Media (2007)	Sichuan/ Chengdu	Advertising Platforms, Brand Marketing, Digital Marketing, Information Technology	$1,329.69M over 8 rounds	JD.com, Baidu, Vision Plus Capital	$2.00B
42) Guoquan Shihui (2017)	Shanghai/ Shanghai	Food and Beverage	$423.44M over 6 rounds	Tiantu Capital, CMB International Capital, Vision Knight Capital	$2.00B
43) Tubatu.com (2008)	Guangdong / Shenzhen	Consulting, Furniture, Home Decor, Interior Design,	$216.48M over 4 rounds	Sequoia Capital China, Matrix Partners China, 58.com	$2.00B
44) Kujiale (2011)	Zhejiang/ Hangzhou	Home Decor, Interior Design	$312.00M over 8 rounds	GGV Capital, IDG Capital, Linear Venture	$2.00B
45) Geek+ (2015)	Beijing/ Beijing	Industrial Automation, Logistics,		Volcanics Ventures, Vertex	$2.00B

		Robotics, Warehousing	$533.61M over 11 rounds	Ventures China, Warburg Pincus	
46) XtalPi (2014)	Guangdong / Shenzhen	Artificial Intelligence, Biotechnology, Pharmaceutical	$783.81M over 8 rounds	Tencent Holdings, 5Y Capital, Sequoia Capital China	$2.00B
47) Beisen (2002)	Beijing/ Beijing	Consulting, Recruiting	$421.18M over 8 rounds	Matrix Partners China, Sequoia Capital China, Genesis Capital	$2.00B
48) Mafengwo (2010)	Beijing/ Beijing	Public Transportation, Transportation, Travel	$488.00M over 6 rounds	Qiming Venture Partners, Capital Today, General Atlantic	$2.00B
49) HuiMin (2013)	Beijing/ Beijing	B2B, Communities, E-Commerce, Retail, Shopping	$519.63M over 4 rounds	Zheshang Venture Capital, GP Capital, Western Capital Management	$2.00B
50) Keep (2014)	Beijing/ Beijing	Finance, Security		Bertelsmann Asia Investments,	$2.00B

			$614.49M over 3 rounds	GGV Capital, Morningside Venture Capital	
51) Black Sesame Technologies (2016)	Shanghai/ Shanghai	Artificial Intelligence, Automotive, Machine Learning	$615.00M over 9 rounds	Northern Light Venture Capital, Xiaomi, FutureX Capital	$2.00B
52) Xingyun Group (2015)	Guangdong / Shenzhen	B2B, Cosmetics, E-Commerce, Logistics, Supply Chain Management	$953.50M over 5 rounds	Matrix Partners China, Eastern Bell Capital, Hongtai Capital Holdings	$2.00B
53) 4Paradigm (2015)	Beijing/ Beijing	Artificial Intelligence, Information Services, Machine Learning, Software	$930.00M over 11 rounds	Sequoia Capital China, China Construction Bank, Bank of China	$2.00B
54) eDaili (2015)	Shanghai/ Shanghai	Financial Services, FinTech, Insurance	$1.00M over 7 rounds	K2VC, Lightspeed China Partners, Sky9 Capital	$1.90

55) ENOVATE (2015)	Shanghai/ Shanghai	Automotive, Energy, Mobile	$1.333M over 10 round	Automobile Industry Guidance Fund	$1.85
56) AIWAYS (2017)	Shanghai/ Shanghai	Artificial Intelligence, Automotive, Electric Vehicle, Manufacturing	$330.93M over 6 rounds	Jiangsu Shagang Steel Group, Shanghai Puyin Industry, Funa Yuanchuang Technology	$1.78B
57) Apus Group (2014)	Beijing/ Beijing	Mobile Apps	$116.3M over 3 rounds	Redpoint Ventures, QiMing Venture Partners, Chengwei Capital	$1.73B
58) Jusfoun Big Data (2010)	Beijing/ Beijing	Enterprise Tech	$137.13M over 9 rounds	Boxin Capital, DT Capital Partners, IDG Capital	$1.62B
59) Zhubaijie (2006)	Chongqing/ Chongqing	E-Commerce, Freelance, Information Technology, Professional Services	$429.60M in 4 rounds	Cybernaut Growth Fund, IDG Capital	$1.61
60) Cao Cao mobility (2015)	Zhejiang/ Hangzhou	Energy, Mobile Apps,		People Electrical	$1.60

		Ride Sharing, Transportation	$968.86M over 4 rounds	Appliance Group China, Zhongrong International Trust	
61) GalaxySpace (2016)	Beijing/ Beijing	Satellite Communication	missing	Shunwei Capital Partners, 5Y Capital, Legend Capital	$1.58B
62) Xianshenghuo (2016)	Sichuan/ Chengdu	Food and Beverage, Food Delivery	$ 92.61 M over 5 rounds	Guiyang Venture Capital, Longfor Capital, CAOGENZHI BEN GROUP	$1.57
63) Baiwang (2015)	Beijing/ Beijing	Business Information Systems, Business Intelligence, Financial Exchanges, Financial Services, FinTech	$224.35M over 6 rounds	Guozhong Venture Capital Management, Shenzhen Capital Group, Oriental Fortune Capital	$1.55B
64) Wenheyou (2013)	Hunan/ Changsha	Food and Beverage, Restaurants	$92.44M over	Sequoia Capital China,	$1.55B

			4 rounds	Warburg Pincus, IDG Capital	
65) Ximalaya FM (2012)	Shanghai/ Shanghai	Internet Radio, Mobile	$70.59M over 7 rounds	China Creation Ventures, Sierra Ventures, Xingwang Investment Management	$1.52B
66) Carzone (1995)	Jiangsu/ Nanjing	Automotive, E-Commerce	$946.49M over 8 rounds	Alibaba Group, Co-Stone Venture Capital, Buhuo Venture Capital	$1.52B
67) JOLLY Information Technology (2008)	Zhejiang/ Hangzhou	Baby fashion, E-Commerce, Electronics, Fashion, Internet	$100.12M over 5 rounds	Legend Capital, CDH Investments, Sequoia Capital China	$1.50B
68) YunQuNa (2015)	Shanghai/ Shanghai	E-Commerce, Freight Service, Insurance, Logistics, Shipping, Transportation	$342.37M over 9 rounds	Source Code Capital, Coatue Management, DCM Ventures	$1.50
69) Changingedu (2014)	Shanghai/ Shanghai	E-Learning, EdTech,		Trustbridge Partners,	$1.50B

		Mobile	$188.00M over 6 rounds	IDG Capital, Sequoia Capital China	
70) Yijiupi (2014)	Beijing/ Beijing	B2B, E-Commerce, Food and Beverage, Supply Chain Management, Wine And Spirits	$547.27M over 8 rounds	Source Code Capital, Meituan Dianping, Tencent Holdings	$1.50B
71) DT Dream (2015)	Zhejiang/ Hangzhou	Big Data, Cloud Computing, Cloud Data Services, Software	$260.35M over 3 rounds	Alibaba Group, China Everbright Investment Management, Yinxinggu Capital	$1.50
72) XiaoZhu (2012)	Beijing/ Beijing	Real Estate, Rental	$500.00M over 8 rounds	Morningside Ventures, Capital Today, JOY Capital	$1.50B
73) Mofang living (2009)	Shanghai/ Shanghai	Property Management, Real Estate, Rental Property	$710.00M over 5 rounds	Warburg Pincus, Aviation Industry Corporation of China	$1.50
74) Tujia (2011)	Beijing/ Beijing	Apps, Customer Service, Tourism,	$763.70M over 6 rounds	GGV Capital, QiMing	$1.50

		Travel		Venture Partners	
75) Yipin Shengxian (2017)	Anhui/ Hefei	Consumer Goods, Food and Beverage	$658.49M over 4 rounds	Eastern Bell Capital, Capital Today, Longzhu Capital	$1.49
76) Shukun Technology (2017)	Beijing/ Beijing	Artificial Intelligence, Health Care, Health Diagnostics, Machine Learning	$247.65M over 6 rounds	Marathon Venture Partners, Huagai Capital, China Creation Ventures	$1.46
77) Coocaa (2006)	Guangdong / Shenzhen	Electronics, E-Commerce	$226.60M over 5 rounds	Baidu, Tencent Holdings	$1.45
78) Juma Peisong (2011)	Sichuan/ Chengdu	Logistics	$281.38M over 5 rounds	Ding Xiang Capital, New Hope Fund, Sino-Ocean Capital	$1.45
79) Ouyeel (2015)	Shanghai/ Shanghai	Advanced Materials, Industrial Manufacturing,	$433.72M over 2 rounds	Taigang Venture Capital	$1.45

		Trading Platform			
80) Valgen Medtech (2015)	Zhejiang/ Hangzhou	Health Care, Health Diagnostics	$133.00M over 2 round	Sequoia Capital China, China Life Investment Holding Company, Qiming Venture Partners	$1.43
81) Hive Box (2015)	Guangdong / Shenzhen	E-Commerce, Logistics, Packaging Services	$1,2400.00M over 6 rounds	Eastern Bell Capital, SF Holding Co, STO Express	$1.40
82) Koudai (2010)	Beijing/ Beijing	E-Commerce, Fashion, Mobile, Shopping	$362.00M over 4 rounds	New Enterprise Associates, Tiger Global Management, Tencent	$1.40
83) Yidian Zixun (2012)	Beijing/ Beijing	Media and Entertainment, News,	$526.50M over 10 rounds	Phoenix New Media, Tianjin Haihe Industry Fund	$1.40
84) Yaoshibang (2015)	Guangdong / Guangzhou	B2B, Pharmaceutical, Trading Platform	$497.19M over 7 rounds	Green Pine Capital Partners, Ivy Capital, DCM Ventures	$1.35

85) DeepBlue Technology (2014)	Shanghai/ Shanghai	Artificial Intelligence, Information Technology, Machine Learning, Retail Technology, Software	$79.28M over 7 rounds	DESUN Capital, Yunfeng Capital, Meridian Capital	$1.35
86) Jaguar Microsystems (2020)	Guangdong / Shenzhen	Cloud Computing, Data Center, Information Technology, Semiconductor, Software	5 founding rounds	Tencent Holdings, Glory Ventures, Shenzhen Capital Group	$1.34
87) Tongdun Technology (2013)	Zhejiang/ Hangzhou	FinTech, Network Security, Software	$361.44M over 7 rounds	Advantech Capital, Temasek Holdings Ltd., Tiantu Capital Co.	$1.32B
88) Unisound (2012)	Beijing/ Beijing	Cloud Data Services, Natural Language Processing, Speech Recognition	$339.11M over 9 rounds	Qiming Venture Partners, China Internet Investment Fund, Qualcomm Ventures	$1.31

89) Talking Data (2013)	Beijing/ Beijing	Analytics, Big Data, Mobile	$310.00M over 6 rounds	N5 Capital, CR Capital Mgmt, JD Digits	$1.30B
90) Manner (2015)	Shanghai/ Shanghai	Coffee, Food and Beverage, Supply Chain Management	$11.54M over 5 rounds	Coatue Management, H Capital, Capital Today	$1.30
91) Huisuanzhang (2015)	Beijing/ Beijing	Accounting, Financial Services, FinTech, Professional Services	$227.34M over 9 rounds	IDG Capital, Gaocheng Capital, Chuanrong Capital	$1.28
92) WTOIP (2013)	Guangdong / Guangzhou	Business Development, Financial Services, Property Management	$306.98M over 7 rounds	Dark Horse Technology Group, Hopu Investment Management, Kefa Capital	$1.27
93) JMGO (2011)	Guangdong / Shenzhen	Digital Entertainment, Electronics, Hardware, Manufacturing, Project Management	$377.40M over 10 rounds	IDG Capital, Yuanda Venture Investment, Primitive Forest Holdings Group	$1.26

94) Kuaikan manhua (2014)	Beijing/ Beijing	Art, Comics, Digital Media, E-Commerce, Marketplace, Media and Entertainment	$595.00M over 6 rounds	Sequoia Capital China, CMC Capital Partners, Tencent Holdings	$1.25
95) Shulan Health (2013)	Zhejiang/ Hangzhou	Health Care, Medical sector, Rehabilitation	$85.69M over 6 rounds	Qiming Venture Partners	$1.24
96) Enflame (2018)	Shanghai/ Shanghai	Artificial Intelligence, Machine Learning, Semiconductor, Software	$744.31M over 9 rounds	Tencent Holdings, Delta Capital, Redpoint Ventures China	$1.24
97) Yiguo (2005)	Shanghai/ Changning	E-Commerce, Grocery, Online Portals, Retail	$800.00M over 5 rounds	Alibaba Group, KKR, Goldman Sachs	$1.20
98) Pipa Coding (2017)	Beijing/ Beijing	E-Learning, EdTech, Tutoring	$267.73M Over 5 rounds	Source Code Capital, XVC Venture Capital, Hillhouse Capital Management	$1.20
99) Aibee (2017)	Beijing/ Beijing	Artificial Intelligence, Information Technology, Machine	$175.31M over 7 rounds	Sequoia Capital China, Lenovo Capital and Incubator,	$1.20

		Learning, Robotics		Group GSR Ventures	
100) SmartMore (2019)	Guangdong / Shenzhen	Artificial Intelligence, Machine Learning, Software	$300.00M over 4 rounds	IDG Capital, ZhenFund, Sequoia Capital China	$1.20
101) Mininglamp Technology (2014)	Beijing/ Beijing	Artificial Intelligence, Big Data, Machine Learning, Software	$1,002.69M over 8 rounds	Russia-China Investment Fund, Tencent Holdings, Sequoia Capital China	$1.19
102) Luoji Siwei (2012)	Beijing/ Beijing	Broadcasting, Mobile Apps	$188.15M over 5 rounds	Sequoia Capital China, Qiming Venture Partners, Tencent Holdings	$1.18
103) Yimidida (2015)	Shanghai/ Shanghai	Cloud Data Logistics, Productivity Tools, Supply Chain Management	$553.61M over 8 rounds	Source Code Capital, Global Logistic Properties, K2VC	$1.17
104) Tuhu (2011)	Shanghai/ Shanghai	Automotive, E-Commerce, Service Industry	$580.45M over 10 rounds	Qiming Venture Partners, Yaxia Automobile,	$1.16

				Far East Horizon	
105) TELD (2014)	Shandong/ Qingdao	Automotive, Electric Vehicle, Energy, Transportation	$193.24M over 2 rounds	China Reform Fund, Gaopeng Capital, Jinhui Xingye	$1.12
106) Juanpi (2012)	Hubei/ Wuhan	E-Commerce, Fashion, Shopping	$136.05M over 3 rounds	Tiantu Capital, SAIF Partners China, Newsion Venture Capital	$1.10
107) Qingting FM (2011)	Shanghai/ Shanghai	Internet Radio, iOS, Mobile	$163.70M over 8 rounds	China Culture Industrial Investment Fund, We Capital, China Minsheng Investment Group	$1.10
108) Gaussian Robotics (2013)	Shanghai/ Shanghai	Artificial Intelligence, Robotics	$287.83M in 5 rounds	BlueRun Ventures, Grand Flight Investment, Meituan Dianping	$1.10B
109) Nxin (2015)	Beijing/ Beijing	Agriculture	$53.05M over	Beijing Juneng Hesheng Industry Investment	$1.08

			4 rounds	Fund, Beijing Shuju Xinrong Fund	
110) 56PINGTAI (2013)	Shanghai/ Shanghai	Logistics	$187.82M over 6 rounds	QF Capital, QC Capital, Unicom Innovation Venture Capital	$1.08
111) UISEE Technology (2016)	Beijing/ Beijing	Autonomous Vehicles, Machine Learning, Robotics	$154.3M over 7 rounds	Shenzhen Capital Group, Robert Bosch Venture Capital, SeptWolves Ventures	$1.08
112) Jiuxian (2009)	Beijing/ Beijing	E-Commerce Platforms, Food and Beverage, Sales, Wine And Spirits	$249.21M over 7 rounds	Sequoia Capital China, Rich Land Capital, Merrysunny Wealth	$1.05
113) Leap Motor (2015)	Zhejiang/ Hangzhou	Automotive, Electric Vehicle, Energy, Manufacturing	$1,761.19M over 9 rounds	Sequoia Capital China, Gopher Asset Management, Shanghai Electric Group	$1.01

114) Xiaoice (2020)	Beijing/ Beijing	Artificial Intelligence, Machine Learning, Virtual Assistant	$138.4M over 5 rounds	NetEase Capital, Northern Light Venture Capital, Microsoft	$1.00B
115) Xiaoe Tech (2015)	Guangdong / Shenzhen	Digital Media, EdTech, Education sector, Marketing, Software	$138.82M over 4 rounds	GGV Capital, Hillhouse Capital Management, IDG Capital	$1.00B
116) WeBull (2016)	Hunan/ Changsha	Finance, Financial Services, FinTech, Information Technology, Venture Capital	$230.31M over 6 rounds	Bojiang Capital, Hongdao Capital, Mobai Capital	$1.00B
117) Banma Technologies Network (2015)	Shanghai/ Shanghai	Automotive, Autonomous Vehicles	$696.76M over 5 rounds	Yunfeng Capital, SDIC Innovation Investment Management, Shang Qi Capital	$1.00B
118) 1KMXC (2014)	Zhejiang/ Hangzhou	Artificial Intelligence, Machine		Goldman Sachs Asset Management,	$1.00B

		Learning, Robotics, Service Industry	$98.96M over 10 rounds	SDP Investment, Alibaba Group	
119) Haomo.AI (2019)	Beijing/ Beijing	Artificial Intelligence, Automotive, Consulting, Information Technology	$203.91M over 5 rounds	Qualcomm Ventures, Nine Intelligence Capital, Hillhouse Capital Management	$1.00B
120) JimuBox (2013)	Beijing/ Beijing	Financial Services, FinTech, Lending, Micro Lending	$131.00M over 3 rounds	Matrix Partners China, Ventech China, Shunwei Capital Partners	$1.00B
121) Hosjoy (2009)	Jiangsu/ Nanjing	E-Commerce	$138.53M over 5 rounds	U.S.-China Green Fund, Founder H Fund, Richland Equities	$1.00B
122) Tezign (2015)	Shanghai/ Shanghai	Animation, Graphic Design, Marketing, Software	$110.00M over 7 rounds	Sequoia Capital China, Linear Venture, Hearst Ventures	$1.00B

123) Momenta (2016)	Beijing/ Beijing	Artificial Intelligence, Autonomous Vehicles, Mapping Services, Software	$1,283M over 10 rounds	Sinovation Ventures, Tencent Holdings, Sequoia Capital China	$1.00B
124) YH Global (1997)	Guangdong / Shenzhen	Automotive, Freight Service, Logistics, Supply Chain Management, Transportation	$182.05M over 1 round	Co-Energy Finance, Grandland	$1.00B
125) KnowBox (2014)	Beijing/ Beijing	Apps, Children, EdTech, Education, Mobile	$306.16M over 6 rounds	TAL Education Group, Legend Star, Alibaba Group	$1.00B
126) HuJiang (2001)	Shanghai/ Shanghai	EdTech, Education	$223.29M over 5 rounds	China Minsheng Investment, Baidu, Wanxin Media	$1.00B
127) BeiBei (2011)	Zhejiang/ Hangzhou	E-Commerce, Fashion, Shopping	$224.40M over 3 rounds	Banyan Capital, New Horizon Capital, IDG Capital Partners	$1.00B

128) Keenon Robotics (2010)	Shanghai/ Shanghai	Industrial Automation, Robotics	$228.79M over 7 rounds	Yunqi Partners, SoftBank Group, iVision Ventures	$1.00B
129) Hyperchain (2016)	Zhejiang/ Hangzhou	Auto Insurance, Insurance, Retail, Wholesale	$249.00M over 6 rounds	Yinhong Equity Investment Fund, E Fund, Ideal International	$1.00B
130) Mobvoi (2012)	Beijing/ Beijing	Artificial Intelligence, Mobile,	$259.64M over 7 rounds	Sequoia Capital China, SIG Asia Investments, ZhenFund	$1.00B
131) Intellifusion (2014)	Guangdong / Shenzhen	Artificial Intelligence, Computer Vision, Facial Recognition, Software	$287.85M over 11 rounds	BOC International, TopoScend Capital, Hongxiu VC	$1.00B
132) Fiture (2019)	Sichuan/ Chengdu	Artificial Intelligence, Fitness, Robotics, Sport sector	$391.00M over 4 rounds	Bertelsmann Asia Investments, Sequoia Capital China, NIO Capital	$1.00B

133) FXiaoKe (2011)	Beijing/ Beijing	CRM, Software, Supply Chain Management	$338.00M over 13 rounds	IDG Capital, Northern Light Venture Capital, DCM Ventures	$1.00B
134) Zhihaiguo (2018)	Chongqing/ Chongqing	Food and Beverage, Food Processing	$3,206.53M over 5 rounds	Xingwang Investment Management, China Capital Investment Group, Matrix Partners China	1.00B
135) XForcePlus (2015)	Shanghai/ Shanghai	Cloud Computing, Enterprise Software, Information Technology, Software	$200.00 M over 6 rounds	Eastern Bell Capital, Danhua Capital, MSA Capital	$1.00B
136) Maimai (2013)	Beijing/ Beijing	Apps, Enterprise Software, Messaging	$300.00M over 4 rounds	Morningside Venture Capital, IDG Capital, DCM Ventures	$1.00B
137) iCarbonx (2015)	Guangdong / Shenzhen	Artificial Intelligence, Biotechnology, Health Care, Machine Learning	$199.00M over 2 rounds	Tencent, Vcanbio	$1.00B

138) iTutorGroup (1998)	Shanghai/ Shanghai	Software, E-Learning, Education, Language Learning	$315.00M over 4 rounds	QiMing Venture Partners, Temasek Holdings, Silverlink Capital	$1.00B
139) Womai (2009)	Beijing/ Beijing	E-Commerce, Retail, Shopping	$320.00M over 4 rounds	SAIF Partners China, Baidu, IDG Capital	$1.00B
140) Zhaogang (2012)	Shanghai/ Shanghai	Advanced Materials, Industrial Manufacturing, Trading Platform	$361.25M over 9 rounds	K2 Ventures, Matrix Partners China, IDG Capital	$1.00B
141) Wacai (2009)	Zhejiang/ Hangzhou	Finance, Financial Services, Information Technology, Mobile Apps	$368.60M over 8 rounds	Qiming Venture Partners, China Broadband Capital, CDH Investments	$1.00B
142) Yunxuetang (2011)	Jiangsu/ Suzhou	Corporate Training, Professional Services, Software	$397.28M over 9 rounds	Matrix Partners China, Sequoia Capital China, Hundreds Capital	$1.00B

143) SITECH DEV (2017)	Guizhou/ Guiyang	Automotive, Logistics	missing 3 rounds	China Prosperity Capital	$1.00B
144) EcoFlow (2017)	Guangdong / Shenzhen	Clean Energy, Electronics, Energy sector, Solar	$110.59M over 5 rounds	Delian Capital, China International Capital Corporation, Sequoia Capital China	$1.00B
145) LinkSure Network (2013)	Shanghai/ Shanghai	Mobile	$52.00M over 3 rounds	Haitong Kaiyuan Investment, Northern Light Venture Capital, and Undisclosed Investors	$1.00B
146) China Cloud (2020)	Jiangsu/ Wuxi	Cloud Computing, Cloud Data Services, Consulting sector, Enterprise Software, Web Design	$522.80M over 11 rounds	V Star Capital, GF Xinde Investment Management Co., Haitong Leading Capital Management	$1.00B
147) Poizon (2015)	Shanghai/ Shanghai	E-Commerce, Fashion, Information	missing	DST Global, Sequoia	$1.00B

		Technology, Retail	3 rounds	Capital China, Gaorong Capital	
148) LinkDoc Technology (2014)	Beijing/ Beijing	Big Data, Security	$253.02M over 6 rounds	China Investment Corporation, New Enterprise Associates	$1.00B
149) TERMINUS Technology (2015)	Beijing/ Beijing	Advertising Platforms, B2B, Digital Marketing Sector	$629.58M over 6 rounds	China Everbright Limited, IDG Capital, iFLYTEK	$1.00B
150) Huike Group (2010)	Beijing/ Beijing	E-Commerce, E-Learning, Education Sector	$63.00M over 4 rounds	Fosun RZ Capital, Oceanwide Holdings, Shenzhen Qianhe Capital Management Co.	$1.00B
151) Dxy.cn (2000)	Zhejiang/ Hangzhou	Health Care, Life Science, Health sector, Pharmaceutical, Social Media, Software	$672.00M over 5 rounds	Tencent Holdings, DCM Ventures	$1.00B

152) DianRong (2012)	Shanghai/ Shanghai	Finance, Financial Services, FinTech	$649.00M over 9 rounds	Standard Chartered, FinSight Ventures, Affirma Capital	$1.00B
153) FlashEx (2014)	Beijing/ Beijing	Delivery Service, Logistics	$339.00M over 8 rounds	Prometheus Capital, Matrix Partners China, JD Capital Management	$1.00B
154) 58 Daojia (2014)	Beijing/ Beijing	Local Business Service Industry	$300.00M over 2 rounds	KKR, Alibaba Group, Ping An Insurance	$1.00B
155) Moka (2015)	Beijing/ Beijing	Artificial Intelligence, Human Resources, Information Technology, Machine Learning, Staffing Agency	$142.27M over 7 rounds	GGV Capital, GSR Ventures, FreesFund	$1.00B
156) Zhuan Zhuan (2015)	Beijing/ Beijing	E-Commerce	$990.00M over 5 rounds	58.com, Tencent Holdings	$1.00B
157) Youxia Motors	Shanghai/	Automotive,	$1,3260 M over	China Environmental	

(2014)	Shanghai	Electric vehicle	3 rounds	Protection Industry, China Fortune Ocean	$3.35
158) Gokin Solar (2019)	Guangdong / Zhuhai	Renewable Energy, Manifacturing	616.17 M over 4 rounds	IDG Capital, Puluo Capital, Midea Capital	$2.88
159) ChaBaiDao (2008)	Sichuan/ Chengdu	Food and Beverage	140.26M Over 1 round	Tomato Capital	$2.52
160) Cgtz (2014)	Zhejiang/ Hangzhou	Fintech	$535.86M over 4 rounds	Shunwei Capital Partners, China Media Group, Guangzhou Huiyin Aofeng Equity Investment Fund	$2.41
161) Iluvatar Corex (2015)	Shanghai/ Shanghai	Information Services, Information Technology, Software	185.52M over 5 rounds	Centurium Capital, Cedarlake Capital, Unicom Innovation Venture Capital	$1.55
162) Bordrin Motors (2016)	Shanghai/ Shanghai	Automotive/ Electric vehicle	361.00M over 4 round	China Grand Prosperity	$1.48

				Investment, CSC Group	
163) Huasun (2020)	Anhui/ Xuancheng	Battery/ Energy Sector	$353.1M over 4 rounds	Hongtai Capital Holdings, Jintou Zhiyuan	$1.46
164) Fox Ess (2019)	Zhejiang/ Wenzhou	Energy Management/ Energy storage	$141.58M over 2 rounds	Sparkedge Capital, Guotai Ruichengde Asset Management	$1.40
165) TUNGEE (2016)	Guangdong / Guangzhou	Artificial intelligence, Machine learning	$171.05M over 6 rounds	UNITY VENTURES, Qiming Venture Partners, GGV Capital	$1.30
166) Greater Bay Technology (2020)	Guangdong / Guangzhou	Battery	$157.15M over 3 rounds	Tencent Holdings, Utrust Venture Capital, GF Xinde Investment Management Co.	$1.26
167) B&C Chemical (2010)	Jiangsu/ Pizhou	Chemical industry	$176.91M over 8 rounds	Suzhou International Development Venture	$1.02

				Capital Holding, GP Capital	
168) Percent (2009)	Beijing/ Beijing	AI	$12M over 3 rounds	IDG Capital	$1.00
169) Lamabang (2011)	Guangdong / Shenzhen	E- commerce	$120.00 M over 4 rounds	5Y Capital, Matrix Partners China, K2VC	$1.00
170) Mia.com (2011)	Beijing/ Beijing	Consumer & Retail	$231.6M over 5 rounds	Sequoia Capital China, ZhenFund, K2 Ventures	$1.00
171) Caidya (2016)	Shanghai/ Shanghai	Healthcare & Life Sciences	$244.1M over 5 rounds	Qiming Venture Partners, Vivo Capital, Sequoia Capital China	$1.00
172) HAYDON (2020)	Shanghai/ Shanghai	Consumer & Retail	$100M over 2 rounds	Tencent Holdings, Hillhouse Capital Management	$1.00
173) Zhipu.Ai (2019)	Beijing/ Beijing	AI/ industrial	missing	Qiming Venture Partners, Legend Capital, Jiangmen	$1.00

				Venture Capital	

Table 1 The 173 Unicorn Companies present in China. Source: CB Insights Unicorn List (October 2023).

1.5 Table analysis

In the previous chapter I have categorized all of the 173 Unicorns that, according to CB Insights, are located in China. Now I will present the results following the specifications used in table 1.1: Foundation Year, Province/City, Founding amount/Founding Rounds, Selected Investors, value.

- **Foundation year:** The so called "year one" of our Unicorn timeline can be placed in 1995, the foundation year of the oldest Unicorn in China. From the data, we can already deduce that overall the history of Chinese startups have been quite uneven during these years:

Foundation year	**N° Unicorns**
1995	1
1996	0
1997	1
1998	1
1999	1
2000	1
2001	2
2002	1
2003	0
2004	0
2005	2
2006	5
2007	1
2008	4
2009	7
2010	7
2011	14
2012	16
2013	15
2014	23
2015	31
2016	13
2017	9
2018	3
2019	8
2020	6
2021	1

- **Province/ City**: from the data we can clearly see that the unicorn phenomenon is not equally distributed on the Chinese territory. The easter regions have a clear advantage over the others, especially the two direct-administrated municipality of Beijing and Shanghai. It is also important to notice how Unicorns can develop in different cities of the same province.

Beijing	
Beijing	64

Shanghai	
Shanghai	42

Guangdong	
Shenzhen	19
Guangzhou	5
Dongguan	1
Zhuhai	1

Zhejiang	
Hangzhou	16
Wenzhou	1

Jiangsu	
Nanjing	3
Changzhou	2
Suzhou	2
Pizhou	1
Wuxi	1

Sichuan	
Chengdu	6

Hunan	
Changsha	3

Anhui	
Hefei	1
Xuancheng	1

Chongqing	
Chongqing	2

Guizhou	
Guiyang	1

Hubei	
Wuhan	1

- **Sectors**: on a national scale, we can see that the Chinese Unicorns activities are very diversify and embrace a variety of sectors. In the table 1.1, I have tried to describe the core business of these enterprises in a more complete way with the intention of showing their complexity and range. Here I will present them in a more straightforward way to make the analysis more clear and comprehensible. I have adopted the terms and the classifications used by the CB Insights list to keep my analysis coherent with my main source.

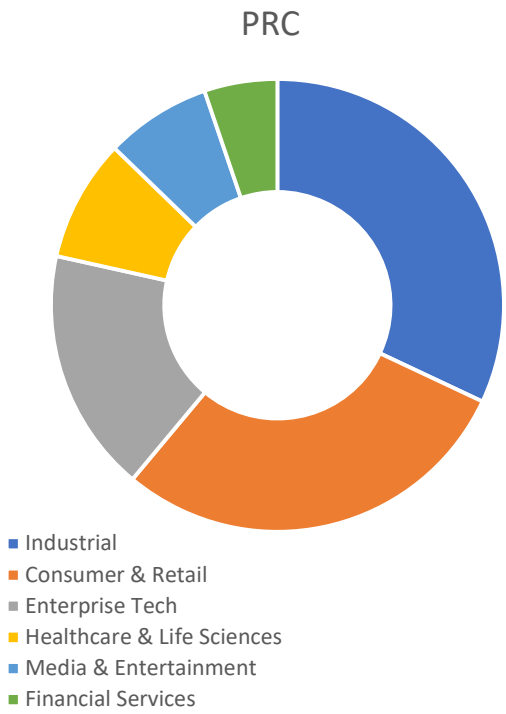

Figure 1.1 Chinese Unicorn Companies industry distribution. Source: CB Insights Unicorns List (October 2023).

As we can see, the Industrial sector and the Consumer & Retail sectors is the predominant one, followed by Enterprise Tech, Healthcare & Life Sciences, Media and Entertainment and Financial Services. This is also in line with the 2022-2023 年全球独角兽企业分析报告 *(Report of the 2022-2023 Global Unicorn Enterprises Analysis*) by iTjuzi.com[19], a company founded in 2013 in Beijing, a leading data service provider in China[20]. According

[19] Itjuzi.com, "2022-2023 年全球独角兽企业分析报告 *(Report of the 2022-2023 Global Unicorn Enterprises Analysis*)".
[20] Itjuzi.com, https://www.itjuzi.com/, consulted in 11/15/2023.

to them, the majority of the Chinese Unicorns occupied the advanced manufacture field, as the rest of the Asian countries Unicorns. It is also important to notice that the most successful Unicorns, i.e. Bytedance and Xiaohongshu, belong to the Media sector.

This graphic represents the Unicorn situation only on a national level. To highlight the regional diversification, I have created a specific set of graphics for each important area:

Figure 1.2 Beijing Unicorn Companies industry distribution. Source: CB Insights Unicorns List (October 2023).

Beijing: we can see that the Consume and Retail sector is the most important one, followed by Enterprise Tech, Industrial, Financial Services, Media and Healthcare and Life Sciences. Overall, the Unicorns'industries here are quite diversify. We must also remember that, although the Media sector is one of the smallest, it comprehends the global colossus Bytedance.

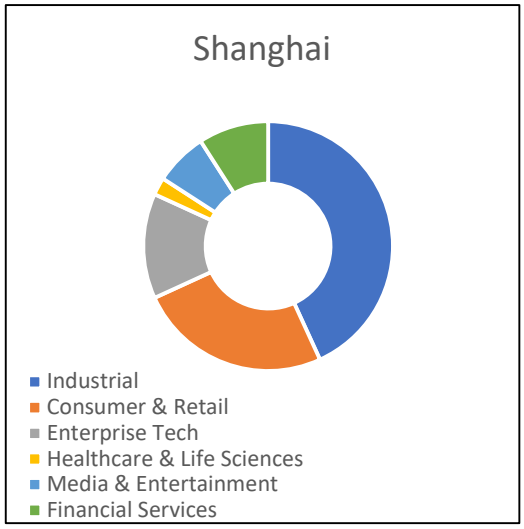

Figure 1.3 Shanghai Unicorn Companies industry distribution. Source: CB Insights Unicorns List (October 2023).

Shanghai: here the Industrial sector dominates the graphic. Shanghai is a strong manufactural power and its industry is more concentrated in one sector, thus, it tends to be less diversify, although it's still very strong in Consumer/Retail and Enterprise Tech sector. It is also important to notice that, similarly to Beijing, it's most important Unicorn, Xiaohongshu, belongs to the Media sector.

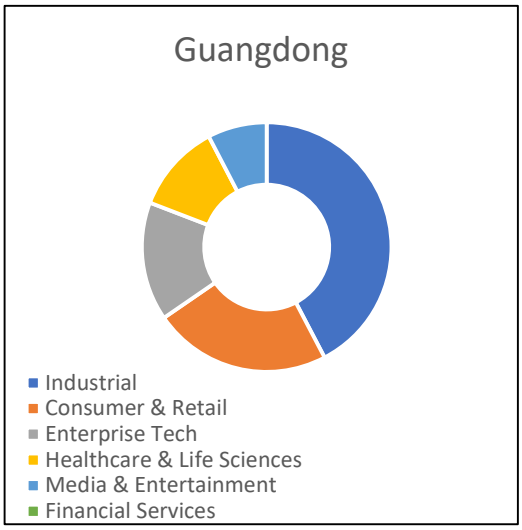

Figure 1.4 Guangdong Unicorn Companies industry distribution. Source: CB Insights Unicorns List (October 2023).

Guangdong: The dominant sector is still represented by the industrial one, while the Financial sector is completely non-existent. Compared to the first two regions, Guangdong has less Unicorns, and this leads to less diversification. Contrary to the previous situations, we can see that these enterprises are more equally spread on the territory and, even thou there is a clear predominance of the Shenzhen area, there are also important concentration of them in three other municipalities.

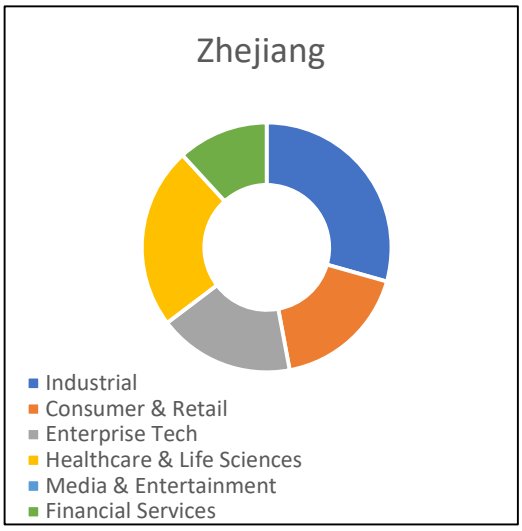

Figure 1.5 Zhejiang Unicorn Companies industry distribution. Source: CB Insights Unicorns List (October 2023).

Zhejiang: Industrial is the main sector again, but we can see that here the Healthcare sector is the second most important one. Enterprise Tech and Consumer/Retail are still quite relevant sectors, while there isn't any Media Unicorn. For what concern the Unicorns distribution on the territory, the Zhejiang province is more in line with the one-city model instead of the Guangdong one.

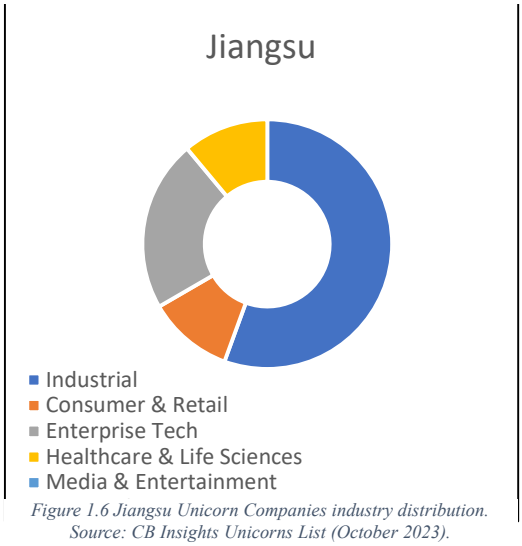

Figure 1.6 Jiangsu Unicorn Companies industry distribution. Source: CB Insights Unicorns List (October 2023).

Jiangsu: the local industry is dominated in a very decisive way by the industrial sector, while regional Unicorns in the Financial and Media sectors are yet to appear. Jiangsu is also characterized by the fact that the majority of its Unicorns are not concentrated in one single city, but they are spread all over its territory. It's similar to the Guangdong model, but the distribution tendency is even more prominent.

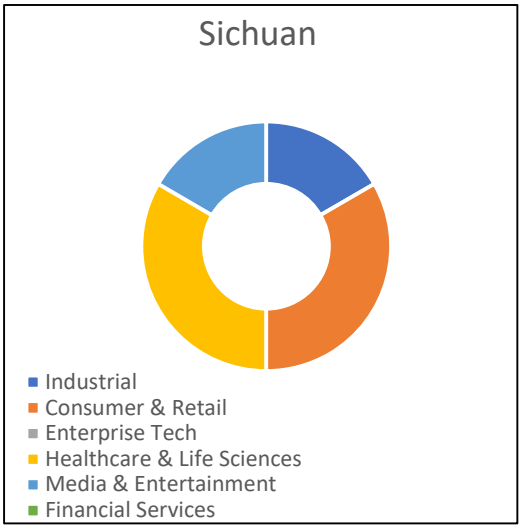

Figure 1.7 Sichuan Unicorn Companies industry distribution. Source: CB Insights Unicorns List (October 2023).

Sichuan: Healthcare and Consumer/Retail have the same number of Unicorns, so they both occupied the first position. The second position also belongs to two sectors, the Industrial one and the Media one. All of these enterprises are concentrated in Chengdu, so this province is more in line with the Zhejiang's model than the Guangdong's one.

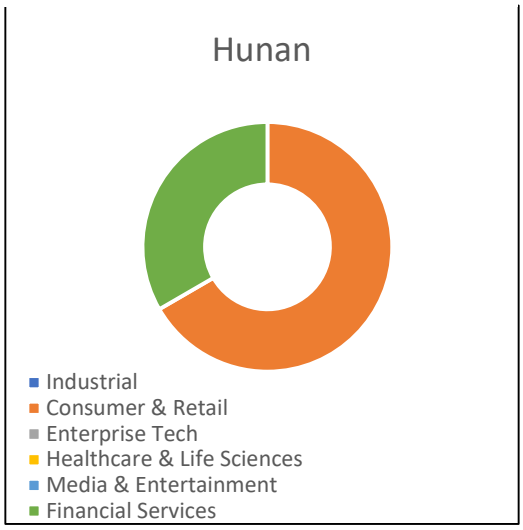

Figure 1.8 Hunan Unicorn Companies industry distribution. Source: CB Insights Unicorns List (October 2023).

Hunan: the local Unicorn industry is concentrated in just two sectors: Consumer/Retail and Financial services. All of its Unicorns are concentrated in the city of Changsha.

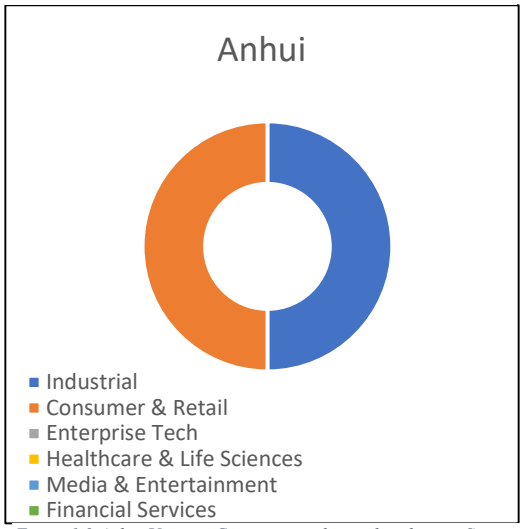

Figure 1.9 Anhui Unicorn Companies industry distribution. Source: CB Insights Unicorns List (October 2023).

Anhui: the province presents just two Unicorns, one in the industrial sector and the other one in the Consumer and Retail one. Unlike the Hunan province, Anhui's Unicorns are located in two different cities: Hefei and Xuancheng.

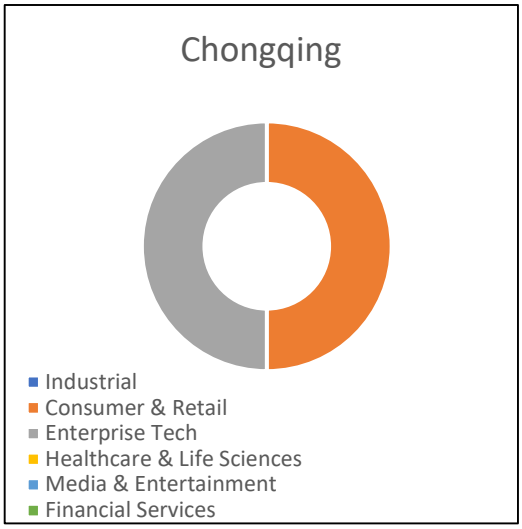

Figure 1.10 Chongqing Unicorn Companies industry distribution. Source: CB Insights Unicorns List (October 2023).

Chongqing: the third and last direct-administrated municipality presented in this list (Tianjing does not have any Unicorn) has also just two Unicorns: one in the Enterprise Tech field and the other one in the Consumer and Retail field.

The other areas, **Guizhou** and **Hubei**, present just one Unicorn each, respectively in the Industrial sector and in the Consumer and Retail sector.

- **Founding/ Founding rounds**: From the data we can clearly see a difference in the average founding amount that a startup can raise in the different territories and in the different sectors. The national average is:

PRC average founding amount = $790.505 M

This national average has been calculated without including six enterprises whose data have not been reported by CB Insights (Huaqin Telecom Technology, Galaxy Space, Jaguar Microsystem, Sitech Dev, Poizon and Zhipu.Ai).

The average founding amounts of each territory are:

Average founding amount per territories	
Beijing*	$862.9477M
Shanghai*	$554.8826M
Guangdong* (Shenzhen) (Guangzhou)	$716.1978M ($1,145.907M) ($488.274M)

Zhejiang	$558. 3094M
Jiangsu	$872.9544M
Sichuan	$499.9467M
Hunan	$1,787.583M
Anhui	$505.795M
Chongqing	$1,818.065M

Figure 2.1 The average founding amount per territories. The territories with incomplete data Unicorns have been marked with an asterisk. Sources: CB Insights Unicorn list (October 2023).

Hubei's only Unicorn has received $136.05M while we do not have any data for the Guizhou's one, Sitech Dev. The other territories that have Unicorns with incomplete data have been marked by an asterisk: Beijing average does not include Zhipu.AI and Galaxy Space, Shanghai's one does not include Huaqin Telecom Technology and Poizon while Guangdong does not include Jaguar Microsystem. Regarding Guangdong, I have also choose to add the average of Shenzhen and Guangzhou under the provincial average, since the specific conformation of the Unicorns' environment in this region has resulted in important internal variations.

According to the table above, there are five territories whose average founding amount is below the national one. These territories are: Shanghai, Guangdong (even if Shenzhen average is much higher), Zhejiang, Sichuan and Anhui. The presence of Shanghai in this group is quite interesting, since it is China second most important Unicorn center. The highest average instead is represented by Chongqing, while Sichuan's average is the lowest.

The average founding amounts of each sector are:

Average founding amount per sectors	
Media & Entertainment	$986.5485M
Consumer & Retail*	$1,008.43M
Industrial*	$812.1837M
Enterprise Tech*	$345.496M
Healthcare & Life Sciences	$595.122M

Financial Services	$530.4856M

Figure 2.2 The average founding amount per sectors. The sectors with incomplete data Unicorns have been marked with an asterisk. Sources: CB Insights Unicorn list (October 2023).

In this table, similarly to what I have done in the previous table, I have marked the sectors characterized by incomplete data Unicorns with an asterisk. The Consumer and Retail sector does not include Poizon, the Industrial sector does not include Galaxy Space, Jaguar Microsystem and Sitech Dev. Enterprise Tech does not include Zhipu.AI and Huaqin Telecom Technology.

The highest average is represented by the Consumer & Retail sector, the lowest by the Enterprise Tech. The Media sector represents the second highest average and includes the Unicorn with the highest founding amount, Bytedance ($7,440M). Without this amount, the Media average would be significantly lower ($414.2408M). The difference among the sectors can partially explain why some territories average is higher than others: four of the five territories previously identified as below national level have the industrial sector as their main one instead of the Consumer and Retail. Hunan's Unicorns for example, whose founding amount average is the second highest in the previous table, mostly belong to the Consumer and Retail sector. Nonetheless, it's also important to notice that Shenzhen, while having an average much higher than the national one, has Unicorns mainly in the industrial field.

For what concern the founding rounds instead, we can also notice some important variations. The national average is:

PRC average founding rounds: 6.358824

This average have been calculated without including three enterprises Huaqin Telecom Technology, Galaxy Space and Zhipu.AI.

The average founding rounds of each territory are:

Average founding rounds per territories	
Beijing*	6.803279
Shanghai*	6.707317
Guangdong (Shenzhen) (Guangzhou)	5.69231 (6) (5.66667)
Zhejiang	5.88235
Jiangsu	6.55556
Sichuan	4.14286
Hunan	6.33333
Anhui	4
Chongqing	4.5

Figure 2.3 The average founding rounds per territories. The territories with incomplete data Unicorns have been marked with an asterisk. Sources: CB Insights Unicorn list (October 2023).

Hubei's Unicorn, Juanpi, received its amount of founding over three rounds, and Guizhou's one, Sitech Dev, also received its amount over three rounds. Shanghai does not include Huaqin Telecom Technology data and Beijing does not include Galaxy Space and Zhipu.Ai. Shanghai, Beijing and Jiangsu's averages are all above the national one, but not by much. Beijing is also the highest average presents on the table, while the lowest is Anhui's. Guangdong and its two municipalities of Shenzhen and Guangzhou are all under the national level, but it is interesting to notice that the highest among these three numbers is the Shenzhen's average.

The average founding rounds of each sector are:

Average founding amount per sector	
Media & Entertainment	6.76923
Consumer & Retail	5.46
Industrial*	6.96078
Enterprise Tech*	6.93103
Healthcare & Life Sciences	5.53333

Financial Services	7

Figure 2.4 The average founding amount per sectors. The sectors with incomplete data Unicorns have been marked with an asterisk. Sources: CB Insights Unicorn list (October 2023).

Industrial does not include Galaxy Space, while Enterprise Tech does not include Zhipu.Ai and Huaqin Telecom Technology. Financial services 'average is absolutely the highest, while Healthcare & Life Sciences is the lowest. Only Healthcare and Consumer and Retail are under the national level, while Industrial and Enterprise Tech have a very similar media. These numbers can also partially explain the territorial differences, for example Shenzhen's Unicorns higher average can be explain with they being prevalent from the Industrial sector.

- **Selected investors**: the 243 selected investors reported in the 1.1 Table presents some important general characteristics.

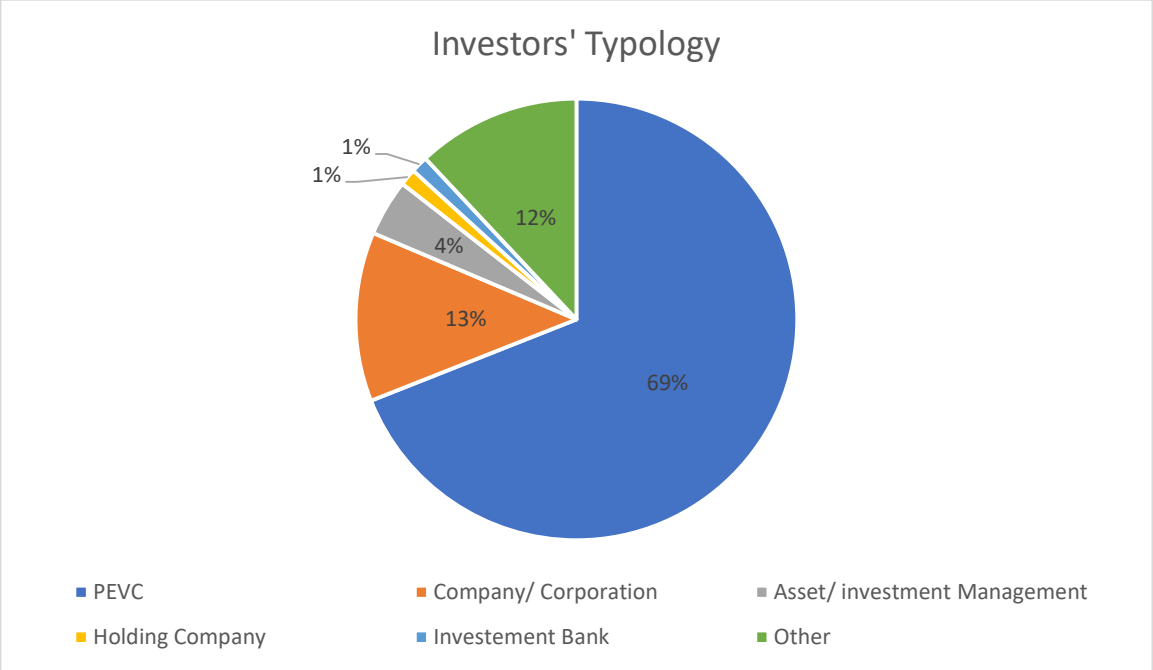

Figure 3.1 Investors' Typology. Source: CB Insights Unicorns List (October 2023).

The majority of the investors belongs to the PEVC category. This category is made by Private Equity, Venture Capital and Corporate Venture Capital. Usually Venture Capital and Private Equity are classified as different types of company but in China the borders

between these two are more blurred[21]. Corporate Venture Capital are a special type of Venture Capital that strategically invest in startup on behalf of their parent company[22]. Overall, this category comprises 100 Venture Capitals, 47 Private Equities, 20 Corporate Venture Capitals according to the definition by CB Insights. It also important to point out that an important number of these investors have not been categorized by CB Insights. These elements together with the less common investors types have been placed in the "Other" sector of this graphic, thus meaning that maybe there can be even more VCs, PEs or Corporate Venture Capital.

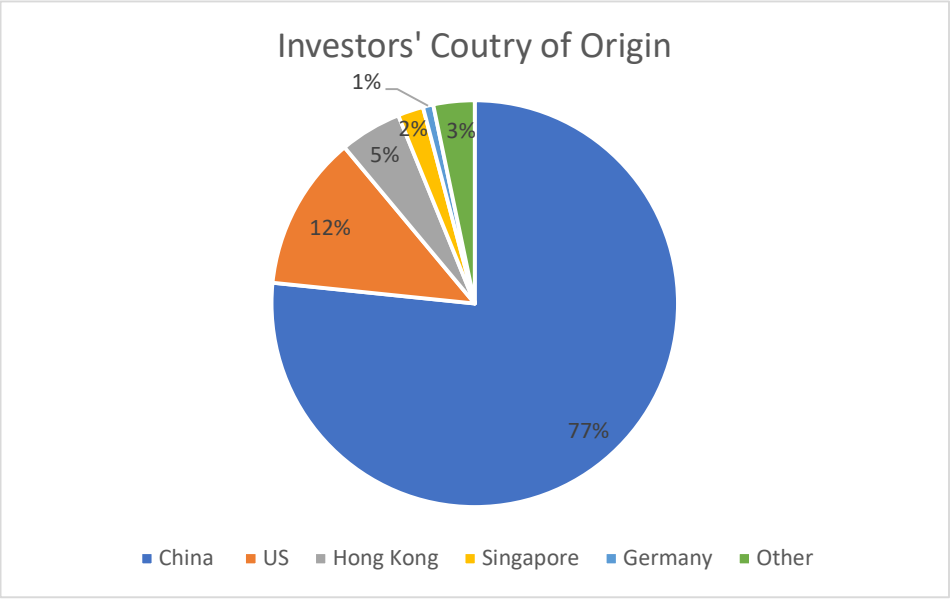

Figure 3.2 Investors' Country of Origin. Source: CB Insights Unicorns List (October 2023)

The largest part of these Investors are domestic ones, but the graphic evidence also a notable foreign presence, with a total amount of 51 investors from outside China. More than half of these investors, 30, are American.

[21] Zhaojun, H., & Xuan, T. (2018). Handbook of China's Financial System Chapter 15: China's Venture Capital Market.
[22] Ibidem.

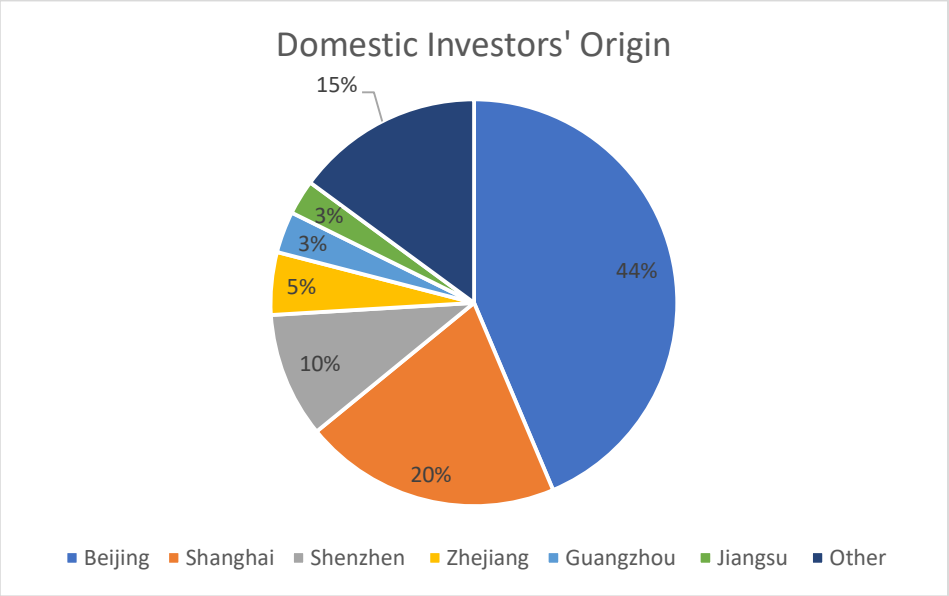

Figure 3.3 Domestic Investors' Origin. Source; CB Insights Unicorns List (October 2023).

As expected , Beijing is the most important place in terms of domestic investors number, followed by Shanghai. Contrary to the previous section, the cities of Shenzhen and Guangzhou are presented individually instead of being first united with the other cities in their province, since there is no need to take into consideration the general situation of their territory before analyzing them singularly.

The majority of them have invested in just one or two Unicorns, but there are also a small number of them that have played a formidable role in the creation of many Chinese Unicorns. In order of importance, these investors are:

Investors	**N° Unicorns They have invested in**
Sequoia Capital China	38
Tencent	24
IDG Capital	23
Qiming Venture Partner	18
Matrix Partner China	10
GGV Capital	9
Alibaba	8

Warbug Picus	6
Morningside	6
Hillhouse Capital Management	6
Zhenfund	5
Baidu	5

Sequoia Capital China, recently renamed Hongshan, was born as a branch of Silicon Valley giant Sequoia Venture Capital. Due to the recent geopolitical tension between US and China and the necessity of increasing the efficiency of the local operations, Hongshan has split from the Parent Company, becoming an independent partnership with its own independent brand[23]. Hongshan, now with a $56bn[24]fund to deploy, is one of the major investor in China and the firm has already greatly contributed in the creation of numerous local startup, including the most valued Unicorn in the world, Bytedance, and it's considered to be the most successful effort by a Silicon Valley entity to capitalize on the Chinese Tech boom[25] . Unfortunately, many of the companies they have invested in, including Bytedance, have fallen under heavily scrutiny lately due to their tights with the Chinese Government, and the company itself is now in trouble with the Congress[26]. Hongshan is now trying to expand behind the boards of China, and it's trying to establish a global footprint[27].

[23] Bryan Mena, June 6, 2023, "US venture capital titan Sequoia to split off China business amid tension with Beijing" https://edition.cnn.com/2023/06/06/business/sequoia-split-partnerships-china/index.html, CNN Business, consulted in 11/15/2023.
[24] Sarah McBride, November 9, 2023, "Sequoia China Rebranding Is High-Stakes Leadership Test" https://www.bloomberg.com/news/articles/2023-11-09/sequoia-china-rebranding-is-high-stakes-leadership-test , Bloomberg, consulted in 11/15/ 2023.
[25] October 18, 2023,https://www.ft.com/content/b8d70626-b949-4a1b-969f-58896eb2ef71, Financial Times, consulted in 11/ 15/2023.
[26] Ibidem
[27] October 12, 2023, "Neil Shen plots global expansion for Sequoia's China spin-off" https://www.ft.com/content/6e3b6905-0b0f-4215-80a4-4082cb899966, Financial Times, consulted in 11/15/2023.

Tencent is a world-leading internet and technology company founded in Shenzhen[28]. Its most important businesses field are messaging services, gaming and media entertainment. Tencent most well-known product is arguably the holistic app WeChat, but it is also the largest video games publisher in the world and can boast very popular franchises such as Fortnite[29]. Tencent investment strategy is to increase its presence in its core gaming and entertainment/communication industries and to expand in non-core sectors such as fintech, enterprise services, e-commerce, artificial intelligence, healthcare and education. The company tends to invest in relatively early-stage companies and maintains close relationships with VC and PE such as Hongshan and Hillhouse[30]. Tencent mainly uses its own balance sheet or venture capital funds to invest, but it can also adopts external funds. It is also known that in some occasions the founder of the company, Ma Huateng, uses his own funds to invest, to keep the amount out of the firm's balance sheet[31].

IDG Capital is a Private Equity powerhouse that has been pioneering venture capital business in China since 1993[32]. Recently is retailoring is strategy to better suit the new consumption-driven economy shift that has occurred in the country, focusing on long-term project including tourism and healthcare, where the demands is growing[33]. IDG Capital is part of the U.S. Based Global Network of Private Equity and Venture Capital Firms[34].

Qiming Venture Partners is a top-tier Chinese Venture Capital firm that invests in Technology and Consumer (T&C) and Healthcare industries. Their portfolio Company includes Tech giant such as Xiaomi, Meituan and Bilibili.

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[28] Tencent, https://www.tencent.com/en-us/about.html, consulted in 11/15/2023.
[29] Zoe Kleinman, August, 7, 2020, https://www.bbc.com/news/technology-53696743, BBC, consulted in 11/15/2023.
[30] Morgan Creek, May, 6 2021, https://www.cmcmarkets.com/en/opto/inside-tencents-venture-capital-investments, OPTO, consulted in 11/15/2023
[31] Yves Helven, June 13, 2018, "How Alibaba and Tencent redesigned Venture Capital", https://www.globalfleet.com/fr/autonomous-technology-and-innovation/asia-pacific/analysis/how-alibaba-and-tencent-redesigned?a=YHE11&curl=1, Global fleet, consulted in 11/15/2023.
[32] IDG Capital, https://en.idgcapital.com/about-us, consulted in 11/15/2023.
[33] Zhang Yangpeng, March 18, 2018, "IDG Capital targets China's consumption shift in real estate investment strategy", https://www.scmp.com/business/money/markets-investing/article/2137723/idg-capital-targets-chinas-consumption-shift-real, South Morning China, consulted in 11/15/2023.
[34] IDG Capital, http://www.idgvusa.com/, consulted in 11/15/2023.

Matrix Partners China is a leading Venture Capital now managing over 50 Billion RMB[35]. The firm represents the Chinese unit of the Silicon Valley based Matrix Partner company and now, as all the others American Companies, is being carefully monitored by the US government. Matrix Partners is trying to expand its business in the space technology field[36].

GGV Capital, also a Silicon Valley based Venture Capital, is currently following the example set by Sequoia Capital and it is now undergoing a restructuring to create two independent business unit[37]: one with a focus on Asia and the other on the US operations. The Asia Unit, whose Headquarter is currently in Singapore, has stakes in many prominent Chinese Tech Company, including Bytedance[38].

The last three years for **Alibaba**, one of the biggest Chinese tech company in the world, have been particularly rough. In November 2020 an initial IPO, the world largest on record, from Alibaba fintech affiliate Ant Group has been called off at the last minutes due to the ill-timed public critique made by the founder of the Company, Jack Ma, against the country financial regulations. Beijing immediately stroke back, forcing Alibaba to comply to the national financial system and undergoing an internal restructuring. The drama spread like wildfire and later that month 27 major Tech Companies, including Tencent, Bytedance and Maituan, have been summoned by the authorities for their monopolistic practices, unfair competition and counteroffering. An antitrust investigation into Alibaba was lunched shortly after and the company was fined 18.2 billion RMB. It was just the beginning of the Big Tech Crackdown, that in 32 mouths would have wipe out trillions in value. Big Tech mergers and acquisition crashed down while the firms started to disinvest to decrease their balance sheets. In January 2023 Ant group and other companies declared to have completed business ratification and in July 2023 the authorities

[35]Matrix Partners, https://www.matrixpartners.com.cn/en/about, consulted in 11/15/2023.
[36]Aria Alamalhodaei, March 2, 2023, "As tensions build, Silicon Valley's Chinese affiliates invest in sensitive space tech", https://techcrunch.com/2023/03/02/china-semiconductor-restrictions-investments/, Techcrunch, consulted in 11/15/2023.
[37] GGV, https://www.ggvc.com/asia-team/, consulted in 11/15/2023.
[38] September 21, 2023, "Venture firm GGV Capital to split off China business after US pressure" https://www.ft.com/content/4052e549-4d1e-49a9-adcc-ca66731a427e, Financial Times, consulted in 11/15/2023.

decided to end the war against the Chinese Big Tech with one last fine to Alibaba worth the value of 7 billion RMB.[39] Since then Alibaba has yet to be restored to its former glory[40]. As for the investment strategy, Alibaba mainly uses its own balance sheet or its own venture capital funds, but can also invests in external funds. The company preferred local Tech Entrepreneurs and spend 85% of resources in Asia[41].

The US based Private equity group **Warbug Picus**[42] have invested heavily in Chinese enterprises in recent years, but now, considering the rising international tensions, has started to reconsider its strategy[43]. Nonetheless, the company continues to target new economy real-estate in China and remains interested in investing in asset-level, technology-enabled or technology-driven real estate opportunities in the region[44].

Morningside is a Boston-based Venture Capital. In 1992 they made their first investment in China and from them they have started to build a very solid portfolio of Chinese tech and internet companies like Xiaomi and Kuiashou[45].

The Chinese Asset/Investment management company **Hillhouse Capital Management** has previously became such a well-known investor thanks to its ability to channel foreign capital into China's most promising firm, but now, with the rising tensions between China and the West, this strategy has to be drastically redesigned. With the retreat

[39]Lilian Zhang, July 15, 2023,"Explainer: A timeline of China's 32-month Big Tech crackdown that killed the world's largest IPO and wiped out trillions in value", https://www.scmp.com/tech/big-tech/article/3227753/timeline-chinas-32-month-big-tech-crackdown-killed-worlds-largest-ipo-and-wiped-out-trillions-value, South Morning China, Consulted in 11/15/2023.

[40] Jane Zhang, Abhishek Vishnoi, Jeanny Yu And Zheping Huang, June 20, 2023, "Jack Ma's Lieutenants Return to Oversee Tough Alibaba Reboot" https://time.com/6288353/alibaba-eddie-wu-joseph-tsai/, Time, consulted in 11/15/2023.

[41] Yves Helven, June 13, 2018, "How Alibaba and Tencent redesigned Venture Capital", https://www.globalfleet.com/fr/autonomous-technology-and-innovation/asia-pacific/analysis/how-alibaba-and-tencent-redesigned?a=YHE11&curl=1, Global fleet, consulted in 11/15/2023.

[42]Warbug Pincus, https://warburgpincus.com/firm/, Consulted in 11/15/2023.

[43] Agustus 10, 2023, "US investors face uncertain future in China after tech ban" https://www.ft.com/content/8de1cd77-fe94-45d5-aa23-09faf7f89f15, Financial Times, consulted in 11/15/2023.

[44] Pimfha Chan, June 30, 2023, "Warburg Pincus bullish on new economy real estate in China", https://asia.nikkei.com/Spotlight/DealStreetAsia/Warburg-Pincus-bullish-on-new-economy-real-estate-in-China, Nikkei Asia, consulted in 11/15/2023.

[45] Morningside, https://morningside.com/yesterday, consulted in 11/15/2023.

of US limited partners, they are now trying to target new RMB funds and reaching agreement even with local governments[46].

Zhenfund is a Chinese Venture Capital whose aim is to promote innovation among young people in China. In 2011 they haves started a partnership with Sequoia Capital China that allowed them to harness more resources for their portfolio companies[47].

Baidu, China most important internet search business, is showing signs of reprise after the Big Tech company crackdown. The company is still engage in an internal reconstruction and the conflict with the United States is a sore point for the Chinese High-tech, but the firm has improves is economic position[48]. Lately the company has been one of the most active investor in the AI space[49].

From all of these investors, we can see two very important elements:

1. The deterioration of the relationships between the US and China is reshaping the entire Chinese VCPE ecosystem.
2. The Big Tech Companies, especially BAT (Baidu, Alibaba and Tencent), play a crucial role in the startup incubation process. Thus, the Big Tech crackdown has effected not only the internet companies field, but also the entire VCPE system[50].

We will discuss in more depth these arguments in the following chapter.

[46] Agustis, 30, 2023, "Hillhouse targets new renminbi fund as dollar interest in China dries up" https://www.ft.com/content/8cb4a6ad-9719-40dc-8e8e-d9d31fc8a99b, Financial Times, consulted in 11/15/2023.
[47] CB Insights, https://www.cbinsights.com/investor/zhenfund, consulted in 11/15/2023.
[48] Chang Che, May 19, 2023, "China's Tech Giants Signal the First Steps in a Bumpy Recovery" https://www.nytimes.com/2023/05/19/technology/alibaba-baidu-tencent-q1-earnings.html, New York Times, consulted in 11/15/2023.
[49] Saheli Roy Choudhury, February 19, 2023, " Two of the top five most active corporate VCs last year were Chinese" https://www.cnbc.com/2019/02/19/baidu-ventures-one-of-the-most-active-corporate-venture-capital-firms.html, CNBC, consulted in 11/15/2023.
[50] Wei Sheng, July 30, 2023, "VC Roundup | How big China tech uses investments to build empires" https://technode.com/2020/07/30/vc-roundup-how-big-china-tech-uses-investments-to-build-empires/, Technode, consulted in 11/15/2023.

- **Value**: if the valuation of a company is an already difficult matter to deal with, the evaluation of a startup is even harder. Many investors have tried and failed to catching their own unicorns, following their guts, trusting their experience. Very few of them managed to place the right bet. The correct way to evaluate an high-growth company remains a mystery and, as Gornall and Strebulaev [51]have pointed out in their recent work, this is mainly due to the incredibly complicated financial structure of this type of firm. The most common used evaluation metric for a VC, the post-money evaluation system, is in fact completely uncapable of identifying correctly the real value of an high-value company for this exact reason, since is calculated by multiplying the per share price obtained in the most recent founding rounds by the number of common shares. The problem lays in the fact that, unlike public companies which generally speaking possess only one class of equity, the common one, a Unicorn company created a new class of equity every time it rises money. Each of these shares, being completely different from the products commonly traded on the financial markets such as debt or common stock, not only have different cash-flows and control rights from company to company, but also from founding rounds to founding rounds. These types of equity, together with issued and unissued stock options, in the post-money evaluation are only considered based on the number of common shares they are converted into. In doing so, many analysts completely neglect the vital importance of contractual cash flows terms. With the establishment of a fairer method to correct evaluated Unicorn companies that takes into account all of these factors, Gornall and Strebulaev have proved that the majority of the investments made by VCs have no fundamental at all in any reality and the companies that they championed can be overvalued up to 100%[52]. Analyzing 135 US based Unicorns, they discovered that nearly half of them were overvalued, including some high profile companies such as Dropbox, SpaceX and even Uber. This overvaluation tendency is not an American exclusive, but it rather seems like a global phenomenon. Even in China, home of the most valued Hectocorn in the World, Bytedance, and nine Decacorns, this is a well-known problematic.

[51] Gornall, W., & Strebulaev, I. A. (2020). Squaring venture capital valuations with reality. *Journal of Financial Economics*, *135*(1), 120-143.
[52] Ibidem.

According to Meicheng Ai[53], there are also other reasons that we have to considered when we are talking about overvaluation:

1. The changing macro environmental conditions, with raising international tensions that negatively impacts the global economy, destabilizing it.
2. Before been listed Unicorns experience many financing rounds that increase their value significantly in the primary market, but when the moment of going public arrives, the foundations of the companies are not strong enough to support excessive share prices. Investors find out that the firm's performances are not as impressive as they seemed and the growth not spectacular as expected.
3. Many companies' business models are not mature enough to sustain the prime market level of disclosure and scrutiny.

In the end, the performance of a company in the A-share market depends mostly on the company's earnings and cash flows strength. Without these elements, the value of a company simply drops.

But not every Unicorns seems to be a bubble ready to burst. A rare look inside the financial and profitability figures of Bytedance revels us that the Chinese giant has expanded its revenues to more than $85B, its Operating Profit to more than $20B and its EBITDA came in at around $25B. Furthermore, in 2023 Q1 the company had an operation profit of nearly $6B[54]. This is a proof of the fact that, even if not every Unicorn's horn is as sharp as it looks, this new entrepreneurship model has a real and concrete value.

[53] Ai, M. (2020). Research on the method of predicting the overvaluation of unicorn enterprises in China. *Academic Journal of Business & Management*, *2*(1), 14-24.

[54] Salvador Rodriguez, October 3, 2023, "Rare Look Inside TikTok Parent's Finances Shows Slowing Revenue Growth", https://www.wsj.com/business/tiktok-parent-bytedance-turns-operating-profit-sees-revenue-slow-bb270bc8, The Wall Street Journal, consulted in 11/15/2023.

Chapter 2

Financial context

2.1 Brief analysis of the Chinese Stock Market

The Chinese stock market is a crucial element in the country's economic growth , especially for its role in financing the high tech sector[55]. Thus, to better comprehend the mechanism behind the creation of a Unicorn company, first we need to better comprehend the basis from where this type of firm can rise. The domestic Chinese stock market was established in 1990 with the creation of two independent domestic stock exchanges: the Shanghai Stock Exchange (SSE) and the Shenzhen Stock Exchange(SZSE)[56]. Each one of these stock markets has two trading boards, the Main-board Market and a Second-board market, respectively the STAR Market and the ChiNext Market. SZSE also greatly benefits from its strategic position in the Greater Bay Area (GBA) that makes it particularly attractive for manufacturing companies, the majority type of the firms listed on its Main Board. Many of these companies are also state-owned or partially state-owned[57]. Nowadays, SSE total market capitalization is $6.6 trillion, while the SZSE's one is $4.38 trillion, making the Chinese stock market the second largest in the world, trailing only the US stock market[58]. Four broad categories of products are traded in the exchanges: Stock, Fixed income securities/bond, funds, derivates. There are two types of stocks: the A-share and the B-share. The A-share are denominated in in RMB and issued to domestic investors or qualified foreign institutional investors. The B-share are quoted in US or HK dollars and issued to offshore investors or to domestic investors with foreign currency accounts[59].

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[55] Huld Arendse, September 24, 2021, "China's Stock Markets – An Introductory Guide for Foreign Investors", https://www.china-briefing.com/news/chinas-stock-markets-an-introductory-guide-for-foreign-investors/ China Briefing, consulted in 12/01/2023.

[56] Zhaojun, H., & Xuan, T. (2018). Handbook of China's Financial System Chapter 15: China's Venture Capital Market.

[57] Huld Arendse, September 24, 2021, "China's Stock Markets – An Introductory Guide for Foreign Investors", https://www.china-briefing.com/news/chinas-stock-markets-an-introductory-guide-for-foreign-investors/ China Briefing, consulted in 12/01/2023.

[58] Statista, Largest stock exchange operators worldwide as of September 2023, by market capitalization of listed companies, October, 2023 https://www.statista.com/statistics/270126/largest-stock-exchange-operators-by-market-capitalization-of-listed-companies/, consulted in 12/01/2023.

[59] Zhaojun, H., & Xuan, T. (2018). Handbook of China's Financial System Chapter 15: China's Venture Capital Market.

Both SSE and SZSE are nonprofit organizations controlled by the Chinese security regulation commission (CSRC) that, in turn, is subordinated to the State Council. CSRC has founded 36 regulatory bureau over the country. Furthermore, the securities industry is administrated by the Securities Association of China (SAC). Finally, the Security laws regulated the issuance and trading of stocks in China. Out of the many significant reforms that in these 30 years have reshaping the Chinese stock market two are particular important for this research:

- The establishment of the **Growth Enterprise Market Board** (**GEM Board**) or **ChiNext**, the **Science and Technology Innovation Board** or **STAR Market** and the **Beijing Stock Exchange (BSE)**. These reforms were deemed necessary to increase the listing opportunities for high-tech innovative companies that were not able to meet the standards in the main board but had high potential.
- The new Initial public offering (IPO) mechanism approved on February 2023[60].

To explain the impact of the ChiNext and the STAR China reforms we should first understand the complexity of the A-share market and comprehend the motivation behind the creation of more boards inside the same stock exchange structure. The A-share market is in fact composed by three different sections, each of them with their own functions:

1. The **Main-board Market** or **First-board Market** (主板市场)
2. The **Second-board Market** (二板市场)
3. The **Third-board Market** (三板市场)

The **First-board Market** is the primary market for stock trading. Before the 2023 reform, it was characterized by the intricacy and difficulty involving the enlisting process, both for the complexity of the procedure itself and for the very strict requirements that the company had to meet. The previous IPO mechanism in fact was administration-based, which means that every company's IPO had to be approved by the CSRC. First, a sponsor or underwriter, such as a securities firm, had to take responsibility for the underwriting process. Then, the IPO application

[60] Huld Arendse, February 22, 2023, "China Fully Implements New IPO Rules – Understanding the Registration-Based Mechanism for Public Listings (Updated)", https://www.china-briefing.com/news/chinas-ipo-reforms-registration-based-mechanism/, China Briefing, consulted in 12/01/2023.

had to be submitted to the to the CSRC that, in order to decide whether approve the application or not, was also allowed to consult the local government where the company's headquarter was located. Both the issuing firm and the sponsor were obligated to publish the prospectus and the recommendation letter on the CSRC website. Following an accurate examination of the firm's quality and the sponsor's qualifications, the CSRC had to approve or reject the IPO application. The Commission had the authority to terminate the application if the issuing company was not able to meet the standards requested or if the company or its sponsor had false records or were found guilty of making misleading statements in the prospectus or recommendation letter. The set of requirements imposed by the CSRC included information disclosure, operation, accounting quality and usage of proceeds raised from stock issuance. Particular important was the very high standards concerning earnings and cash flows. For example, the firm's accumulated earnings had to exceed RMB 30 million and its earnings had to be positive for the past three consecutive years. The company also either had to have accumulated a total cash flows of RMB 50 million or more or to have built up a cumulative operating income of more than RMB 300 million. The minimum capital stock had also to be no less than RMB 30 million before the IPO.

The **Second-board Market** is similar in concept to the US Nasdaq. It is a type of board specifically created to provide additional opportunities to publicly issue stocks and raise funds for all the kinds of firms that are not able to meet the rigid standards of the Main-board. Thus, the enlisting system is obviously seen as the key to make these new boards properly fit their function At first, the regulators have decided to stick to the administration-based form of enlisting, designing a very similar system to the Main one but with much less severe requirements. Then, they take a far more drastic root. In August 2020, with the IPO reform for this type of Secon-tier Market, the IPO system of ChiNext and STAR China was shifted from administration-based to registration-based, marking the beginning of an historical structural shift inside the Chinese Stock-market.

- **ChiNext**: Thanks to this limited IPO reform the Secon-tier Market subordinated to the SZSE has gowned significantly in the last three years and has become one of the world's biggest IPO market. It is composed by 100 specialized sector and it's home to many companies from "strategic emerging" industries that have showed good profitability even during the Covid era. The fact that is so connected to these new technologies and is so

China focus allow is Index, the ChiNext Index, comprising 100 of the largest and most liquid A-shares listed on the ChiNext Market, to be quite independent from the other major country's regional and global indices[61]. It is important to address the fact that there was also another tier between the First-board Market and the Second-board Market in the SZSE, the SME board. This board was created in 2004 to help small companies raising funds, but in 2009 with the creation of the ChiNext market for startups, its role was drastically reduced. The SME board was no longer seen as a good choice for the mainland technology firms and in 2021 the CSRC approved its merger with the SZSE. This operation helped to optimize the trading structure of SZSE[62]. Many of the companies listed here migrated to the Main-board.

- **STAR Market**: It was created just four years ago, in 2019, during the high of the trade-war between China and the US. This is the third attempt by the Chinese government to create a stock exchange capable of competing with the US Nasdaq. The first two attempt, the ChiNext and the "New Third Board" that we are going to analyze lately, has not been able to dethrone the US colossus and it seems that this new initiative has not managed to materialize as a real opponent for the Nasdaq too [63]. Nonetheless, this type of market is still a way to for Beijing to support the high-tech sector and a place for firms to raise at least a portion of their funds. Furthermore, the STAR Market, after a complicate start[64], has outperformed other Markets in China[65]. It is interesting to notice that the STAR Market has in percentage more private companies than the leading Stock Exchanges and this is probably because of the registered-based IPO system. According to the SSE site, the STAR

[61]UOB Asset Management, Investment Perspective | 5 things you should know about the ChiNext Market , October 20, 2022, https://www.uobam.com.sg/insights/chinext-market.page?path=data/uobam/chinext-market, consulted in 12/01/2023.
[62]Ren Daniel, 6 February, 2021, "China Securities Regulatory Commission approves merger of Shenzhen exchange's main board, SME board", https://www.scmp.com/business/companies/article/3120796/china-securities-regulatory-commission-approves-merger-shenzhen, South China Morning Post, consulted in 12/01/2023.
[63] Kolakowski Mark, July22, 2019, "What is China's STAR Market?",https://www.investopedia.com/what-is-china-s-star-market-4693703, Investopedia, consulted in 12/01/2023.
[64] China's STAR Market Is Falling to Earth,https://www.wsj.com/articles/chinas-star-market-is-falling-to-earth-11571732956, The Wall Street Journal, consulted in 12/01/2023.
[65] Trustee Chair Team, January 24, 2022, "Two Years In, How Does the STAR Market Measure Up?", https://www.csis.org/blogs/trustee-china-hand/two-years-how-does-star-market-measure, CSIS, consulted in 12/01/2023.

Market has been a pivot zone for the registration system and it will continue to promote institutional innovation in other areas such as mergers and acquisitions[66].

Established in 2001, the **Third-board Market** was conceived as an alternative for both firms unqualified to be listed in the Main-board and those delisted from it. It was an over-the-counter market characterized by low-quality stock and little liquidity. In 2006 a new system was created in Zhongguancun Science Park in Beijing, the "New Third-board Market" (新三板) or "New over-the-counter Market ". Its operating bodies was the National Equities Exchange and Quotation NEEQ, whose listed firms were not limited to high-tech firms from the area, but comprehended all the unlisted firms in China. Since was not possible to issue public stock (so there was no IPO possibility), its information disclosure requirements were way more lenient, and could have been seen as incomplete. The lack of liquidity also remained one of the main obstacle for the affirmation of this Market[67]. It was mostly seen as a starting point for weaker companies to obtain funds before having the possibilities of entering the Chinese Main-boards or other overseas Markets[68], but in reality even this role was left mostly unfulfilled[69]. After the dramatic hit sustained by the SMEs category in recent years by the Covid-19 lockdown, the rising commodities prices and the unpredictable economy rebounds, The government and especially Xi Jinping himself decided that was necessary to give to the sector a much-needed injections of founds. Thus, the NEEQ was going to be redesigned. On November 2021, from the ashes of the old Third-board Market, **the Beijing Stock Exchange (BSE)** emerged. Created for SMEs and focuses on innovation-oriented companies, it can be seen as a reformed version of the NEEQ[70]. Unfortunately, In September 2023 a set of 19 point guidelines was released by the CSRC to revive the already struggling new Market. In the next three to five years, we should see the new bourse improve significantly in terms of

[66]Shanghai Stock Exchange, Securities Time| Focusing on the Fourth Anniversary of the STAR Market| The Vibrant STAR Market Yields Fruitful Outcomes as a Pilot Zone of Registration System, July 21, 2023, http://english.sse.com.cn/news/newsrelease/voice/c/5724405.shtml, Consulted in 12/01/2023.
[67] Zhaojun, H., & Xuan, T. (2018). Handbook of China's Financial System Chapter 15: China's Venture Capital Market.
[68]Huld Arendse, November 18, 2021, "The New Beijing Stock Exchange for SMEs – What You Need to Know", https://www.china-briefing.com/news/beijing-stock-exchange-for-smes-what-we-know/, China Briefing, consulted in 10/01/2023.
[69] Zhaojun, H., & Xuan, T. (2018). Handbook of China's Financial System Chapter 15: China's Venture Capital Market.
[70] Huld Arendse, November 18, 2021, "The New Beijing Stock Exchange for SMEs – What You Need to Know", https://www.china-briefing.com/news/beijing-stock-exchange-for-smes-what-we-know/, China Briefing, consulted in 10/01/2023.

scale, efficiency and liquidity. This reforms should also help the BSE to eventually became an hub for innovation[71].

The other big reform that I have previously highlighted, the new Initial Public Offering Mechanism approved in February 2023, is also going to drastically changed the game in the Chinese financial market. The shift from an administration-based system to a registration-based has been prepared by the CSRC since 2013, and it was carefully designed to avoid more relaxed listing standards that may have cause serious troubles on the Main-board. After the pilot-programs implemented in the two Secondary-boards, ten years later the CSRC initial proposition, the time has finally came to extend this new system to all the other Markets. The old procedure, as we have already seen, was long and complicate. It could have taken months or even years to be completed. The commission was also responsible for setting the company's share value. Thanks to the new system, the Stock Exchanges themselves will be in charge of checking if the firm is conform to their stock issuance criteria and information disclosure requirements using the information that the company has presented during its application process. Thus, the procedure will be much shorter and leaner. To better suit the different financial environment of the different Chinese Stock Exchanges each of their inner board must find the most suitable way to implement this new reform, setting their own requirements and profit thresholds for firms to list. The CSRC's impact has been redefined and now it can be described as a supervisory role, solely responsible for the final approval of the IPO. The Market itself will determine the share price. Even with all of these novelties, it is not so probable that this new rules will help to rise the listing numbers, mostly because the thresholds for financial indicators and market capitalization have risen. The biggest impact will be probable felt in the transparency aspect of the single company and of the overall system. The high disclosure requirements and the other rules connected to the new registration-based IPO will in fact highlight for the firms the importance of having a solid accounting system, a well-designed internal control system and an adequate compliance management system from the very beginning, while on the other hand the standards, procedures, content, processes and results

[71] Zhang Shidong, September 4, 2023, "Beijing Stock Exchange reforms will boost appeal, valuations of companies listed on China's smallest bourse, say analysts",https://www.scmp.com/business/china-business/article/3233316/beijing-stock-exchange-reforms-will-boost-appeal-valuations-companies-listed-chinas-smallest-bourse, South China Morning Post, consulted in 12/01/2023.

of reviews and registration will be made accessible to everyone, and this will greatly help the investors to make better decisions[72].

Overall, the Chinese Stock Market is characterized by a large presence of individual investors[73], also called retail investors, that are non-professionals investors who usually can deploy a smaller sum than their institutional counterparts. This type of Market participants usually does not have the knowledge or the expertise to take the correct decision and it is said that they can undermine the market's capability of allocate the resources in an efficient way[74]. Other important traits of these Stock Exchanges are their high turnover ratios, and high volatility. Another typical elements connected to the fact of being an emerging markets is the high-synchronicity of its stocks.

2.2 Ventur Capital, Private Equity and the many steps to create an established company

A vibrant Stock Market is essential for an healthy Venture Capital Market, that, in turn, is necessary source of funds for early-stage high-technologies companies[75]. The players of this market, the Venture Capitalists, have been created specifically to address the huge problem linked to this new type of highly innovative companies, which required an enormous amount of founds but have an incredible low possibility of success. The Venture Capitalist is willing to back firms that would have not been supported by anyone else, following the rule of its own game, a very unconventional, high-risk but also potentially high-return one[76]. Its modus operandi is quite inefficient, but there as we have seen in the previous chapter, there is not a single, riskless way to play. There is also an important misconception to dismantle, the belief that Venture Capital are essential for founding basic innovation. Indeed, the governmental and corporative expenditure in this field is way bigger and far more crucial then the VCs' one. Venture Capitalists are vital for the

[72] Huld Arendse, February 22, 2023, "China Fully Implements New IPO Rules – Understanding the Registration-Based Mechanism for Public Listings (Updated)", https://www.china-briefing.com/news/chinas-ipo-reforms-registration-based-mechanism/, China Briefing, consulted in 12/01/2023.
[73] Zhaojun, H., & Xuan, T. (2018). Handbook of China's Financial System Chapter 15: China's Venture Capital Market.
[74] Hayes Adam, January 12, 2024, "Retail Investor: Definition, What They Do, and Market Impact", https://www.investopedia.com/terms/r/retailinvestor.asp, Investopedia, consulted in 1/18/2024.
[75] Lin, L. (2017). Venture capital exits and the structure of stock markets in China. *Asian Journal of Comparative Law*, *12*(1), 1-40.
[76] Corea, F., Bertinetti, G., & Cervellati, E. M. (2021). Hacking the venture industry: An Early-stage Startups Investment framework for data-driven investors. *Machine Learning with Applications*, *5*, 100062.

commercialization of this idea. Their money will be used to build the infrastructures necessary to make the business grow, to cover expense investments such as manufacturing, marketing and sales, to keep the balance sheet healthy and providing fixed asset and working capital[77]. Venture Capital agreements imply a relative short-term prospective. Its only concern is to raise enough money for the selected firm to develop util it reaches an adequate size and reputation. This life-cycle can be divided in three different stages[78]:

1. **Fund-raising →** the capital used to raise the fund is provided by the **Limited Partners (LP)**. In theory, everybody can be an LP but typically this category is represented by High-Net-Worth-Individual (a person who owns liquid assets valued at $1milion[79]), wealthy families, pensions funds, sovereign wealth funds[80], financial firms and university endowments. All of this entities concede to the VC just a small percentage of their total wealth and during the lifetime of this type of high-risk investment they expect a return of between 25% and 35% per year[81]. Usually a standard fund is backed by 10-20 LPs, but it depends on the size of the fund and on how much money must be raised. This fund will not be responsible for just one project, but for an entire portfolio, a bundle of different companies put together to maximize the chance of success. The number of these firms can vary greatly, from 20-40 companies to 50-100+[82]. The limited partners are silent/ passive investors. The **General Partners (GP)** instead are the one in charge of the managing of the Venture Capital. They decide the company to adds to the portfolio and usually takes or receives a board seat of the firm they have chosen to invest in[83].
2. **Investment →** Venture Capitalists do not invest in good people, nor in good idea. They invest in good industries, that means industries more competitively forgiving that the

[77] Zider Bob, November-December, 1998, "How Venture Capital Works", https://hbr.org/1998/11/how-venture-capital-works, Harvard Business Review, consulted in 12/01/2023.
[78] Gompers, P. A., & Lerner, J. (2004). *The venture capital cycle*. MIT press.
[79] Curry Benjamin and Michael Addams, September 6, 2023, "HNWI: High-Net-Worth Individuals", https://www.forbes.com/advisor/investing/financial-advisor/high-net-worth-individual-hnwi/#:~:text=A%20Financial%20Advisor-,What%20Are%20High%2DNet%2DWorth%20Individuals%3F,at%20%241%20million%20or%20more, Forbes Advisor, consulted in 12/01/2023.
[80] Peak Capital, What Is a LP in Venture Capital?, https://peak.capital/what-is-an-lp-in-venture-capital/, consulted in 12/01/2023.
[81] Zider Bob, November-December, 1998, "How Venture Capital Works", https://hbr.org/1998/11/how-venture-capital-works, Harvard Business Review, consulted in 12/01/2023.
[82] https://www.toptal.com/finance/venture-capital-consultants/venture-capital-portfolio-strategy
[83] Peak Capital, What Is a LP in Venture Capital?, https://peak.capital/what-is-an-lp-in-venture-capital/, consulted in 12/01/2023.

market as a whole[84]. This explain quite well why VCs' investments tend to move together across different market and industries that will likely achieve good results in a short periods of time. After having identify a fitting industry, it's also important to find a company with an high-quality management system that can ensure to deliver the growth promised. Overall, we can say that there are mainly three types of Venture Capital strategies: the "Add Value" strategy, the "Source Better" strategy and the "Invest Better" strategy. In the "Add Value" types of situation the VC herself helps to increase the value of the company through the improvement of their operations, like recruitment, marketing, partnership, sale, operations and board support. "Source Better" strategy implied instead to find better sources from which find the companies. This is usually done by improving the network of relationships. Finally, the "Investing Better" topic is simply a matter of choose wisely, maybe using a better system[85].

3. **Exit→** Since a VC's invests in firms that are characterized by a lack of the cash flows and profitability necessary to pay interests or dividends, the largest part of the VC' s returns comes in the form of capital gains. Thus, choosing the correct exit strategies is vital. The timing is also crucial. According to Dounglas J. Cumming, a VC decides to exit a project when the Projected Marginal Value Added (PMVA) resulting from its "Add Value" strategy, at any given point in time, becomes less than the Projected Marginal Cost (PMC) of these efforts. He defines efforts as every activities that will create value for the portfolio company, cost as all the direct and overhead cost necessary to create value as well as the opportunity costs linked to alternative deployments of capital. The "projected" term is used to indicate the fact that the VC must take into consideration not only the presents costs and efforts, but also the future costs and efforts. Finally, "point in time" refers instead to when the VC reassesses its commitment to an investment. The projected marginal cost of maintaining the investment is called the maintenance cost. When the correct time comes, there can be five different exit strategies[86]:

[84] Zider Bob, November-December, 1998, "How Venture Capital Works", https://hbr.org/1998/11/how-venture-capital-works, Harvard Business Review, consulted in 12/01/2023.
[85] Arnold Paul, February 14, 2029, "There are only three Venture Capital Strategies ", https://www.forbes.com/sites/valleyvoices/2019/02/14/there-are-only-three-vc-strategies/, Forbes, consulted in 12/01/2023.
[86] Douglas J Cumming and Jeffrey G MacIntosh, 'Venture-Capital Exits in Canada and the United States' (2003) 53 University of Toronto Law Journal 101, 106.

- **IPO,** when a large part of the portfolio company is sold in the stock market. This exit strategy is characterized by the largest degree of information asymmetry between the company and its new owner. This problem can be partially resolved by the VC ownership retention, that is the practice of not selling immediately the VC's share. This method is seen as a sign of quality by the market and it proves that the VC will continue to monitor the management of the firm even in the post-IPO period. The VC's reputation itself is also a key factor during the pricing process[87]. The pricing is in fact quite an interesting element of this exit strategy, since buyers in IPO mostly rely on intermediaries to determine the correct price of a new issue. In an acquisition exit, a secondary sale or a buyback there will be a direct access to the company's information and a degree of sophistication similar to the one retain by these intermediaries.
- **Acquisition**, when the portfolio company is sold to a third party through an acquisition of share, mergers or acquisition of the company's assets. The new owner is typically a strategic acquirer from the moment that is in the same line of business
- **Secondary Sale**, when only the VC's shares is sold to a third party, usually a strategic acquirer as in the Acquisition case, but without the same level of bargaining power. This can lead to a lesser level of information disclosure and a more problematic value assertion of the firm.
- **Buyback**, when the VC's shares is acquired by the company herself. The problem of information asymmetry is greatly attenuated, but the lack of the skills necessary to evaluate itself can still be very problematic for the company.
- **Write-Off**, when the VC simply walks away from the investment. This exit strategy usually involved the failure of the company the VC has invested in[88].

The other major player in the startup system is the Private Equite, another type of Equity investors similar to the Venture Capital in concept, but with a complete different role in the overall

[87] Megginson & Weiss, Id.; Timothy H. Lin and Richard L. Smith. Insider Reputation and Selling Decisions: The Unwinding of Venture Capital Investments During Equity IPOs, 4 J. CORP. FIN. 241 (1998).
[88] Douglas J Cumming and Jeffrey G MacIntosh, 'Venture-Capital Exits in Canada and the United States' (2003) 53 University of Toronto Law Journal 101, 106.

development of a new enterprise[89]. The main difference concerned four fundamental aspect of their investment policy:

1. Stage of the company → VC prefers early-stage companies that are not profitable yet, while PE targets established companies looking to expand or restructure.
2. Size of Investment → PEs usually invest an amount much larger than the one deploy by VCs. An investment made by a PE involves millions or even billions of dollars, while the VC tends to invest hundreds of thousand or several millions of dollars. PE's portfolio is also much smaller than the VC's one, since a PE does not have to off-set the same level of risk derived from being involved with early-stage companies.
3. Holding Period → PE's investment timeline tends to be longer than the VC's one.
4. Investment structure → PE prefers the buyout investment method, while VC would rather have an equity stake in the company.

These two very different equity investors are the most important that we can find on the road to became a well-established enterprise, but they are not the only ones. Each phase of this path is characterized by different founding needs and different risk profiles, thus, each one requires different entities with different abilities and financial power. These phases are three:

1. Early-stage → in this phase an enterprise can be a seed, a company still in the process of researching and developing the initial idea[90], or a startup. The founding needs are still pretty low, but the risk profile is quite high. In this stage, the seed companies will be helped by Business angels, a private individual usually with a high net-worth and a lot of business experience[91], immediate family and friends, their own savings and even Venture Capital. When this seed company becomes a startup, it will still be a target for the Venture Capital and Business Angel investments, but it will also became attractive for subsidies, grants and Bank Quasi Equity types of investments. Quasi Equity is a source of finance based on the projected cash flows of the business and its future performance and it is used when share

[89] Hopper Glenn, March 21, 2023, "Private Equity VS. Venture Capital: Which is Right for Your Company?,"https://www.forbes.com/sites/forbesfinancecouncil/2023/03/21/private-equity-vs-venture-capital-which-is-right-for-your-startup/, Forbes, consulted in 12/01/2023.
[90] Puhakka, M., Jungman, H., & Seppänen, M. (2007). Investing in open source software companies: Deal making from a venture capitalist's perspective. In Handbook of Research on Open Source Software: Technological, Economic, and Social Perspectives (pp. 532-540). IGI Global.
[91] European Commission, Business Angels, https://single-market-economy.ec.europa.eu/access-finance/policy-areas/business-angels_en, consulted in 12/01/2023.

capital or debt financing are not possible. It is called in this way since it shares some traits with the equity method[92]. It ranks between equity and debt, having an higher risk than a debt and a lower risk than a common equity[93].

2. Expansion and Growth → in this phase the company has become a second stage company, i.e. a firm that has already moved beyond the startup level and still wants to growth[94]. In this phase the risk profile is medium and so are the founding needs. Venture Capital, Subsidies and Grants are still very important, but we see also Bank subordinated and mezzanine loans.
3. Later Stage → in this final stage, the risk profile is very low, while the founding needs are very high. Banks and Stock Market founding methods will enter the game since the company is mature enough, and so will do Private Equity companies. Venture capitalists will also still be interested in founding the company.

That being said, in recent years the Unicorn companies' life cycle, and in general the life of a private-owned company has proved to be quite different from this simple scheme. The incredible growth of the Unicorn market is in itself a testimony of the fact that nowadays companies can reach very high levels without going public. This can be done mainly thanks to infusion of capitals from private sources, usually with many founding rounds spread over many years. This phenomenon since 2012 has become incredible popular and now it is also known as Private Initial Public Offering (PIPO). This mechanism is now considered as one of the main forces behind the creation of a Unicorn[95]. There are many factors that lead a private firm to remain private and seem connected to the way the company is managed. Private investors indeed appear to be more capable than the public equity holders to craft a better governance structure and can reduce agency and

[92] Social Business Wales, Quasi Equity, https://businesswales.gov.wales/socialbusinesswales/quasi-equity, consulted in 12/01/2023.
[93] European Investment Bank, Quasi-equity finance for SMEs A fi-compass model financial instrument, March 2022, https://www.fi-compass.eu/sites/default/files/publications/Quasi-equity%20finance%20for%20SMEs%20-%20A%20fi-compass%20model%20financial%20instrument_1.pdf, consulted in 12/01/2023.
[94] Wyant Dan, March 28, 2017, "Not all entrepreneurs are the alike: the four phases of second stage", https://edwardlowe.org/not-all-entrepreneurs-are-alike-the-4-phases-of-second-stage/#:~:text=By%20second%20stage%2C%20we%20mean,work%20horses%20of%20job%20creation, Edward Lowe Foundation, consulted in 12/01/2023.
[95] Brown, K. C., & Wiles, K. W. (2020). The growing blessing of unicorns: The changing nature of the market for privately funded companies. *Journal of Applied Corporate Finance*, *32*(3), 52-72.

free cash flows related problems [96]. In this way, firms can grow without the suffering of being subjugated to short-term performance checks and experience a more reasonable and sensible development. Keith C. Brown and Kenneth W. Wiles analyzed this new PIPO-driven financial scheme and confront it with its IPO-driven counterpart. The timeframe of this new model is noticeable longer, covering a period of 10 years or more. The old IPO-driven system was far shorter, usually 3-5 years.

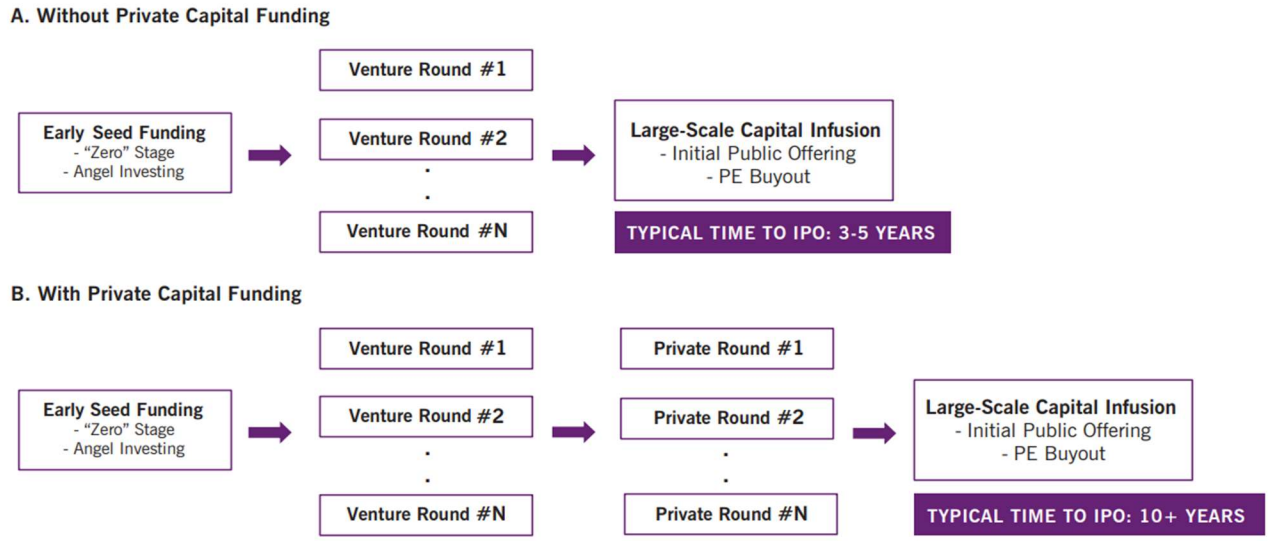

Figure 4.1 A startup life-cycle with and without PIPO. Source: Brown, K. C., & Wiles, K. W. (2020). The growing blessing of unicorns: The changing nature of the market for privately funded companies. Journal of Applied Corporate Finance, 32(3), 52-72.

The transformation in Unicorn can be seen as a clear sign that the firm is ready to undergoing an organizational transformations and, according to a recent study, a firm, after the achievement of this prestigious status, stays in this position for approximately 2 years[97].

2.3 Ventur Capital and Private Equity in China.

The Pandemic era, the slowdown of the Chinese economy, the fear driven from the high-tech sector crackdown, and, most importantly, the rising geopolitical tensions between China and

[96] 2 Karen H. Wruck, 2008, "Private Equity, Corporate Governance, and the Reinvention of the Market for Corporate Control," Journal of Applied Corporate Finance 20, no. 3: 8-21

[97] Brown, K. C., & Wiles, K. W. (2020). The growing blessing of unicorns: The changing nature of the market for privately funded companies. *Journal of Applied Corporate Finance*, *32*(3), 52-72.

US are all factors that have taken their toll on the Chinese Venture Capital Market[98]. The bleeding of foreign capitals, in particular of US capitals, has been severe, even if attenuated by the growth of yuan-denominated funds and mid-sized funds, and according to the Pitchbook report of the first half of 2023, Chinese VCs investment amounted to only $26 billion, a decline of the 31.4% from the previous year. Furthermore, the size of the investments has also shrunk, with the value of the mega-deals, meaning by $100 million or larger, being on track to reach is lowest level since 2015. Nonetheless, the Chinese Venture Capital Market is still the second largest one in the world and in the last decade has been characterized by a stellar growth rate, although it seems to not have reached yet its maturity, as it can be testify by the fact that there is not a clear differentiation between the VCs and PEs since their strategy is in most cases quite similar and in their investment portfolios includes every categories of companies, from early-stages to later ones[99].

The history of VCs in China started in the 80' as an attempt by Beijing to revitalize the high-tech industry. These first type of VCs, backed mainly by the government, were completely inadequate, mostly because the non-existing experience of the owners and the lack of exit channels. The Chinese government in 1998 redesigned its own strategy and endorsed the "Proposal N°1", a set of propositions that reshaped the Chinese VCs' world and proposed to establish a plan to create a "Chinese Nasdaq" to resolve the problem related to the absence of exit channels. Unfortunately, the plan raised a lot of expectations that the government was unable to fulfill and so, after the 2000-2001 boom of domestic VCs, the internal market soon cooled down, leaving the foreign VCs to take the lion's share. In 2005 Beijing finally implemented the split-share structure reform in order to increase the privatization of the stock market. This drastic move allowed domestic VCs to exit through IPO in mainland China and it proved to be a real game changer for the entire industry. The flourishing of the domestic VCs market accelerated with the establishment in 2009 of the ChiNext Board. Unfortunately the momentum ended and after a serious of external and internal economic worsening conditions the CSRC implemented an IPO suspension, valid from November 2, 2012 to January 17, 2014. This move, made necessary by a bearish A-share stock exchange,

[98] Cheng Evelyn, September 18, 2023, "China VC deals plunge, on track for worst pace in more than seven years", https://www.cnbc.com/2023/09/18/china-vc-deals-plunge-on-track-for-worst-pace-in-more-than-seven-years.html, CNBC, consulted in 12/01/2023.
[99] Zhaojun, H., & Xuan, T. (2018). Handbook of China's Financial System Chapter 15: China's Venture Capital Market.

condemned the domestic VCs' market to plunge drastically. With the end of the IPO-suspension period and the improvement of the global economy China VC firms could finally breath again. The 2015 was a great year for the Chinese VC firms and marked the start of a second boom that see them as the main protagonists all around. Marketers for both GPs and LPs increase significantly their level of sophistication, while many experienced Chinese found managers returned home from overseas to fund their own domestic VC firm. Beijing also applied a stricter set of regulations to improve the overall system. The launch of the STAR Market in 2019 was also a very crucial event, since it became the most important IPO-exit channel for Chinese VC-backed companies. Nowadays, the domestic VC market, as we have already seen, has entered another period of crisis, even if there are some interesting evolutions that are taking place, in particular regarding the law concerning the investment ability of large and public institutions like pension funds and banks. The participation of this kind of large and sophisticated investors, who has already proven in many countries to be a game-changing experience, has been planned by the government since 2015, but is yet to be fully allowed. Xi's administration has already made huge progresses in this field. In particular a law has passed that makes possible for the pension funds owned by the local governments to invest in equities up to the 30% of their net assets[100], but due to organizational problems the law is still in need of being fully implemented. Furthermore, the National Social Security Fund, that is the pension fund held by the central government, is instead being allowed to invest in equity up to 40% of all its investments, but just in publicly-listed companies or equity investment funds[101]. The insurance sector could also represents another important new source of capitals for VC firms: in 2014 the China Insurance Regulatory Commission allowed insurance companies to invest 2% of their total assets in VC funds[102]. This rules, further updated in 2018[103], are a clear sign of how the government intends to create a new VCs' founding system.

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[100] State Council of the People's Republic of China (国务院), "国务院关于印发基本养老保险基金投资管理办法的通知" (*notification from the State Council regarding the methods the pension funds must use to manage investments*) August 23, 2015, http://www.gov.cn/zhengce/content/2015-08/23/content_10115.htm, consulted in 12/01/2023.

[101] http://www.ssf.gov.cn/portal/zcfg/ nbgzzd/webinfo/2021/12/1640743447258463.htm

[102] China Banking and Insurance Regulatory Commission (中国保监会), "中国保监会关于保险资金投资创业投资基金有关事项的通知" (*Notification from the China Banking and Insurance Regulatory Commission regarding Insurance Funds Investing in Enterprises*) December 12, 2014, http://www.gov.cn/zhengce/2016-05/24/content_5076218.htm, consulted in 12/01/2023.

[103] State Council of the People's Republic of China (国务院), "中国保险监督管理委员会" (decree form the China insurance Regulatory Commision) January 24, 2018, http://www.gov.cn/gongbao/content/2018/content_5288834.htm, consulted in 12/10/2023.

These important regulation changes are all connected to the Limited Partner market structure that, as we have seen, is crucial for the correct development of the VC firms. The situation has already drastically changed from the beginning, and now is quite complex and different from the US's counterpart, who instead is characterized by a far larger presence of important institutional investors such as pension funds and university endowments that, has we have already seen, in China are not allowed to invest in this type of equity yet. The most important class of LPs is the "wealthy families and individuals", who accounts for almost the 60% of all the total market. According to the Chinese regulation, this category is composed by the so-called "qualified investors" that as institutions must possess a net assets of at least 10 million RMB and as individuals must have financial assets of 3 million RMB or an annual income of 500,000 RMB in the last three years[104]. It is important to notice that the prominence of this category is cyclical and follows the trends of the market[105]. The second most relevant category is represented by the "VC/PE investment institutions" while the third position is occupied by the enterprises and their Corporate Venture Capital. This last category of investors is key for the Chinese startups' world, especially the so-called BAT system, even if the government is trying to change its role[106]. All of the other classes account for less than 10%.

Chinese investors are characterized by not being particularly patience towards their investments, even if there has been some progress. In 2009 the median incubation period, that is the amount of months between the date of the initial investment and the exit date, was just 26 months. Furthermore, many deals have been stroked in regions characterized by an even shorter incubation periods. In 2010 the situation was already better, with a 38 months incubation period. The growing trend of this period seems to have peaked in 2016 with 55 months and in 2018 was already much shorter, being only 44 months in total[107]. Even the Chinese Unicorns usually have a

[104] Ibidem.
[105] Chen, J. (2023). Venture capital research in China: Data and institutional details. *Journal of Corporate Finance*, *81*, 102239.
[106] Li Yang, March 18, 2021, "The Changing Role of China's Corporate Venture Capitalists: From Monopolization to Decentralization", https://sites.law.berkeley.edu/thenetwork/2021/03/18/the-changing-role-of-chinas-corporate-venture-capitalists-from-monopolization-to-decentralization/, Berkeley Law, consulted in 12/01/2023.
[107]Zhaojun, H., & Xuan, T. (2018). Handbook of China's Financial System Chapter 15: China's Venture Capital Market.

much shorter lifespan, just 7.6 years against the 10.2 years of their US counterparts[108]. This urgency could be due to several reason:

1. The lack of good exit alternatives and the prevalence of the IPO exit-strategy.
2. The changing conditions in the economic environment that will make it harder to sell later.
3. The different composition of the LPs. Wealthy families and individuals usually do not possess the same level of sophistication of larger and better structured investor companies.

The IPO exit is by far the most used exit-strategy of the Chinese VCs' ecosystem. There are five economic, cultural and legal reasons behind this preference:

1. IPO-exit tends to give higher returns and it has been proved that the initial returns and overvaluations have no influence over the post-IPO stock performance in the long run.
2. The M&As require regulatory approvals, making this exit strategy much less appealing in the Chinese system than in the US one, where this method is much more used than IPO. Besides, the approval process takes a quite long period of time, provoking employee brain drain and the variation in the acquisition price. The local governments are also infamous for their tendency to disrupt these types of transitions, especially if a SOE is involved. The very strict regulations concerning the involvement of a foreign company in a M&A are also not desirable.
3. The very tight control that the Chinese government exercise over debt financing. A very conservative policy makes very difficult the practice of financing with debt VCs and M&A deals.
4. Cultural aspects are also to take into consideration. Usually a Chinese entrepreneur is very attached to its own company, especially when the company involved is a VC-backed start-up with a very concentered shareholding structure. In a M&A deal situation this mindset is even more problematic since the acquired company is usually transformed in a wholly-owned subsidiary or in a separate division. Trying to reconciliate the previous corporate culture with the one of the new owner can be a really challenging and time-consuming ordeal.

[108] Brown, K. C., & Wiles, K. W. (2020). The growing blessing of unicorns: The changing nature of the market for privately funded companies. *Journal of Applied Corporate Finance*, *32*(3), 52-72.

5. Institutional infrastructures for M&As in China are really underdeveloped and getting direct information from a non-listed company is very difficult. Due to the very short life of the Chinese VCs' ecosystem there is also a visible lack of sophisticated financial intermediaries.

Nonetheless, the M&A exit strategy is growing. The IPO suspension period in 2013 and the volatility of the stock market in recent years are all factors that have certainly helped in increasing the popularity of the M&A deals as a valuable alternative. According to Deloitte, the Chinese investors are also increasingly more willing to adopt this new exit method[109]. Another problem is the lack of an established dual-class share structure like the one presents in mature VCs' market. this structure is characterized by two types of shares: one that allows only one vote per share and it is usually offered to public investors and the other one that allows multiple votes per share and it is instead issued to the founders. This *modus operandi* is particularly appreciated since enables the entrepreneurs to maintain control over their firm even after the listing process. This system was approved in China only in 2019 and it still so stringent that in June 2023 only 8 enterprises has been able to be listed with it[110].

One of the other major characteristic of the Chinese VCs' market is the presence of the Governmental Venture Capitals (GVCs). The Chinese government in fact accounts for about 50% of all the funds raised and 40% of all the deals closed from 1999 to 2018. This type of VCs tend to invest more in local, manufacturing and early stage start-ups, a trend that came from the necessity of following the governmental guideline. They are way more present in less developed area, such as the Western regions, far away from Beijing, meaning that the entire GVCs' structure is quite decentralize. As a further proof of this fact, 84% of GVCs are controlled by local governments, who have more binding requirements and are much more active than the central government. Unfortunately, GVCs are not always so easy to identify. Many governments in fact prefer to act as LPs instead of directly getting involved with state-owned VCs, so lots of VC firms

[109] Deloitte, More Experienced Buyers Higher Return Expectations, 2014, https://www2.deloitte.com/content/dam/Deloitte/xe/Documents/About-Deloitte/me_csg_2014-china-outbound.pdf, consulted in 12/01/2023.

[110] Kang, S. Y. (2023). Exploring China's Dual-Class Equity Structure: Investor Protection Measures and Policy Implications. *Peking University School of Transnational Law Research Paper*.

can be mistaken for private-owned firms. Another challenge that we have to address when we try to identify GVCs is the tendency by the governments of using SOEs or multi-layers shell companies to deploy money. Thus, a GVC can be misidentified as a Corporate Venture Capital. One of the key aspect of the GVCs, a feature that makes them particularly valuable for the VCs' market, is the fact that although they performances tend to be far less spectacular than the other VC firms, they tend to be counter-cyclical, meaning that, contrary to the other VCs' behavior, they will raise more money and increase their investments during market's downturn, smoothing its cyclicality[111]. Nonetheless, the relationship between the government and the private sector is layered and complex. Government LPs largely surpass private LPs, and their GPs also account for almost a third of all the Chinese GPs. On average, private GPs do not like very much Government LPs, since they do not tend to bring only capitals, but also many obligations. The interferences in the decision-making process that the private firms will have to deal with if they accept this type of LPs is considered to be unsustainable, and the uncertainty of the policy combined with the lack of professionality that characterized GLPs are also, to a lesser extent, seen as unattractive features. However, as I have previously said, the relationship between public and private is much more complicated and in fact different types of government are associated with different degree of acceptance[112]. Local governments, with their tax benefits and regulatory approvals, are seen as necessary for the development of any early-stage firms[113], while central and provincial government LPs are highly disliked, especially by the most successful private GPs. GGPs instead are naturally more in line with GLPs and received from them far more funds than their private counter-part.

Another important characteristic of the Chinese VCs' market is the presence of the Corporate Venture Capitals, in particular the ones connected to the famous BAT system (Baidu, Alibaba and Tencent). Usually this title refers to subsidiary of an industrial firm or to a fund that has been jointly set up by a parent firm and a VC firm. A CVC's scope is much wider than the one of a traditional VC company. In fact they are not only concerned with financial returns, but their investment goals comprehend also obtaining new techniques, new products, new talents and

[111] Li, J. (2022). Government as an Equity Investor: Evidence from Chinese Government Venture Capital through Cycles. *Available at SSRN*.
[112] Colonnelli, E., Li, B., & Liu, E. (2024). Investing with the government: A field experiment in China. *Journal of Political Economy*, *132*(1), 248-294.
[113] Bai, C.-E., C.-T. Hsieh, Z. M. Song, and X. Wang (2020b): "Special Deals from Special Investors: The Rise of State-Connected Private Owners in China," Tech. rep., National Bureau of Economic Research.

establishing new connections with emerging industries[114]. Nonetheless, as we have said, the very important role that the BAT companies occupied in this scenario brings us to another element that characterized the entire Chinese start-ups system: when a company accepts capital from a giant, the company will automatically enter into its ecosystem, losing the possibility of receiving money from all the other different firms[115]. They will be also integrated into its backer user base, data and tools, while it will be completely shout out from the other big tech networks. This is also shown in the payment systems, where the companies belonging to the Tencent ecosystem are incapable of accepting Alibaba's Alipay on their e-commerce platform and *vice versa*. According to an article from the Economist in 2020 80% of the firms that have reached $5bn have accepted BAT investments[116]. That being said, this was before the Big Tech crackdown. Now after a decade of protagonism in the VCs' market, this system is being redesigned. CVCs can be divided in two main branches: the traditional enterprises CVCs and the Tech CVCs. The first group's CVC entities have as core business the manufacturing related sectors, while we can divided the second group into two separate classes, the older tech giants, the one that we have previously discussed, i.e. the powerful BAT triumvirates, and the newer Tech giants, more focused on mobile devices like Bilibili, Bytedance and Xiaomi. Both of this classes were the target of the Tech crackdown. On January 2022, Bytedance has decided to disbanded its own CVC called strategic investment department, while also decided to withdrew from many investments. Tencent has also begun to disinvest in many companies. The Tech giants 'system has been seen by the government as an abuse of the companies' dominant market position, an unregulated and dangerous obstacle to the correct development of the market. Now, Beijing is trying to favor the establishment of more SMEs and the correct development of a now regulated CVCs' market[117].

[114] Zhaojun, H., & Xuan, T. (2018). Handbook of China's Financial System Chapter 15: China's Venture Capital Market.

[115] Wei Sheng, July 30, 2020, "VC Roundup | How big China tech uses Investments to Build Empires", https://technode.com/2020/07/30/vc-roundup-how-big-china-tech-uses-investments-to-build-empires/, Technode, consulted in 12/01/2023.

[116] August 2nd, 2018, "Alibaba and Tencent have become China's most formidable investors", https://www.economist.com/business/2018/08/02/alibaba-and-tencent-have-become-chinas-most-formidable-investors, The Economist, consulted in 12/01/2023.

[117] Zheng Jasmine and Zhou Ward, February 15, 2022, "INSIGHTS | Chinese corporate venture capital: A golden decade and a looming fall", https://technode.com/2022/02/15/chinese-corporate-venture-capital-a-golden-decade-and-a-looming-fall/ , Technode, consulted in 12/01/2023.

Policy context

2.4 Entrepreneurial ecosystem and innovative policy.

A strong financial context, that as we have seen is incredible relevant in the development of an healthy startup system, is not the only aspect necessary for creating an Unicorn-friendly environment. Another essential element in the crafting of a new innovative economy is the presence of what is now defined as Entrepreneurial Ecosystem (EE), an innovative concept considered to be a driven force for the economic growth[118]. According to the definition crafted by Stam, an EE is:

> "A set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship within a particular territory[119]"

The territorial characteristics of each area are key aspects of any EE since they give to this system its own particular features. Every EE in fact is a unique ecosystem composed by a unique set of aspects and elements that are jointed together in a very specific way[120]. For this reason, there is no a clear way to obtain this type of structure and the causes of its formation are almost impossible to identify as it appears to be a phenomenon generated by casual forces not entirely in our control[121]. Thus, it should not surprise us if is still not clear the role that the government can have in the crafting process of an EE. According to Stam and Van de Ven, the government can shape the context in which a EE could emerged and operated[122], even if the system itself remains a self-organized system built from the bottom-up[123]. Brown and Mason also highlighted the

[118] Acs, Z. J., Estrin, S., Mickiewicz, T., & Szerb, L. (2017). Institutions, entrepreneurship and growth: the role of national entrepreneurial ecosystems. *Available at SSRN 2912453*.
[119] Stam, E. (2015). Entrepreneurial ecosystems and regional policy: a sympathetic critique. *European planning studies*, *23*(9), 1759-1769.
[120] Fredin, S., & Lidén, A. (2020). Entrepreneurial ecosystems: towards a systemic approach to entrepreneurship?. *Geografisk Tidsskrift-Danish Journal of Geography*, *120*(2), 87-97.
[121] Isenberg, D. J. (2010). How to start an entrepreneurial revolution. *Harvard business review*, *88*(6), 40-50.
[122] Stam, E., & Van de Ven, A. (2021). Entrepreneurial ecosystem elements. Small Business Economics, 56(2), 809–832.
[123] Poon, T. S. C., Wu, C. H., & Liu, M. C. (2023). Developing entrepreneurial ecosystem: a case of unicorns in China and its innovation policy implications. *Asian Journal of Technology Innovation*, 1-17.

complex nature of the "nested geography" of a EE[124], where a EE can be embedded within another, each one operating at a different spatial level. According to this approach, In China we can see a national level EE interacting with many regional-level EE, such as the Zhongguancun Technological Park in Beijing. To properly understand the importance of this system for this work, it is essential to underline that the majority of the Chinese Unicorns is indeed located in Science and Technological Industrial Parks[125].

The political, institutional and economic context that lead to the creation of the EE zones in China originated from a governmental effort to promote high-tech industrialization and innovation. In 1999 the State Council started to revitalize the Chinese domestic economy focusing firstly on the SOEs and the public sector[126]. In the same year, the government established also a fund, called the Innovation Fund or Innofund, designed specifically to provide grants or loans to high-tech SMEs in early-stage of development. This fund alone has grown from $30 million in 1999 to 760.4 million in 2012[127], testifying the increasing importance of this policy tool for Beijing that since the second half of 1990 has started to promote a market-led type of innovation in China and wanted to support idea with good market potential. The famous BAT trio was also established in the same period of time and it was fundamental for the development of the Chinese start-up system not just for the funds and capitals that, as we have already seen, they largely provided, but also for the infrastructures that they have built. Tencent connected China through its new instant messaging app QQ and its other social network platforms, Alibaba became famous as an online retailer and Baidu created the definitive Chinese search engine platform. In a country where a huge domestic market was on the rise[128], where the US companies such as Amazon, Google and Facebook were not allowed to enter, these companies thrived[129]. In 2006 the government designed a medium and

[124] Brown, R., & Mason, C. (2017). Looking inside the spiky bits: A critical review and conceptualization of entrepreneurial ecosystems. Small Business Economics, 49(1), 11–30.
[125] Poon, T. S. C., Wu, C. H., & Liu, M. C. (2023). Developing entrepreneurial ecosystem: a case of unicorns in China and its innovation policy implications. *Asian Journal of Technology Innovation*, 1-17.
[126] OECD, Review of innovation policy: China, 2008,. https://www.oecd-ilibrary.org/science-andtechnology/oecd-reviews-of-innovation-policy-china-2008_9789264039827-en
[127] ESCAP, Evolution of science, technology and innovation policies for sustainable development: The experiences of China, Japan, the Republic of Korea and Singapore. Economic and Social Commission for Asia and the Pacific, United Nations, 2018.
[128] Goodman, D. (2008). The New rich in China (pp. 15–34). Routledge.
[129] Chen, T. J. (2021). The nature of Chinese enterprises. PowerPoint Presentation at the Strategic Conflict in the New World Order Seminar, 2011 Negotiation Management, Political and Economic Forum, March 13. Department of Management, National Taiwan University (In Chinese).

long term strategic plan to boost the high-tech capabilities of the country and turn China into an innovation-oriented economy[130]. In 2015 the State Council committed even more to its idea of reforming the system and its mechanisms, emphasizing the importance of the indigenous element in the innovation process. Meanwhile, starting from the 2000, China became a very popular destination for flows of both capitals and people. Many Chinese previously immigrated decided to come back, attracted by the Government grants and subsidies provided by the Technological Parks. New entrepreneurial mindset and set of behaviors emerged, tailored on the Chinese cultural values such as the willing to succeed, aptitude for problem solving, ability in the crafting of networks (guanxi) and an high tolerance for failures[131]. This last bit is quite critical, since a survey conducted in 2018 revealed that 70% of Unicorns funders have already tried to establish a company before their current business and in the end their determination was a key component of their success[132]. To promote the entrepreneurship and innovation in the country the local governments and the State Council have implemented more than 400 support measures[133]. One important milestone was the issuing in 2017 of the Guidelines on Tax Incentives for Mass Entrepreneurship and Innovation. This new provisions halved the corporate tax income for micro-businesses and raised in a significant way the tax threshold from an annual taxable income of less than RMB$300 thousand to less than RMB$3 million. In 2019, after a revision, these guidelines also provided 89 preferential tax measures for start-ups and additional policies designed to help small business raising funds. The financial subsidies spiked while the taxes were lowered. Furthermore, the government also try to encourage the adoption by the companies of a new approach towards management while trying to implement new talent attraction policies[134]. Xi Jinping himself in 2019 stressed the importance of creating a favorable environment for the development of the private sector, seen as a source of innovation, highlighting the necessity of creating the vital conditions for the development of EEs[135].

[130] State Council, National medium and long science and technology development plan 2006- 2020, 2006, http://www.MOST.Gov.CN/ztdz/gjzcqqgy/zcqgygynr/index.htm
[131] Ahlstrom, D., & Ding, Z. (2014). Entrepreneurship in China: An overview. International Small Business Journal, 32(6), 610–618.
[132] Gao, J., & Guo, Y. (2020). The New Chinese Unicorns: Seizing opportunity in China's burgeoning economy. PWC, 1-12.
[133] Li, P., Hongwei, W., & Jing, Z. (2018). China's S&T reform and TFP over past four decades of reform and opening-up. China Economist, 13(1), 84–111.
[134] Deloitte China. (2019). Rising innovations in China: China innovation ecosystem development report 2019, 1–66.
[135] Ibidem.

In the end, the development of these ecosystems in China can be divided into three different stages[136]:

1) The initial stage, where we have seen the government actively promoting technology-based innovation and helping in the formation of early entrepreneurs with their new business models. All of this while a huge domestic market and affordable internet services guaranteed the basis for the development of EEs.
2) The networking of entrepreneurs, the huge flow of financial and human resources, the presence of qualified leaders and organizations that can help as supports for these companies became key elements in the creation of the right environment.
3) Mass entrepreneurship and innovation, supported by the government, lead to the creation of a huge number of start-ups, some of them so successful that were able to turn into Unicorns.

It is important to notice that the government never really directly promoted innovative business-models, as it preferred to contribute to the economic development of the country through the creation of physical infrastructures, but thanks to this innovation policy that let many EE's elements emerged and interacted with one another inside the institutional context many bold entrepreneurs menaged to developed their own business-model's innovations[137].

2.5 Science Parks: history and evolution.

The first Technological or Science Park in the world was the Research Triangle Park (RTP) established in 1951 in North Carolina, located in the Raleigh-Durham-Chapel Hill area. It was anchored to the Durham's Duke University of North Carolina and the North Carolina State University of Raleigh. Although private, it was connected to a near federal research laboratory and receive state-based incentives[138]. Since then this model of science park has been widely accepted as very important tools in the development of high tech enterprises and industrial clusters[139]. It

[136] Poon, T. S. C., Wu, C. H., & Liu, M. C. (2023). Developing entrepreneurial ecosystem: a case of unicorns in China and its innovation policy implications. *Asian Journal of Technology Innovation*, 1-17.
[137] Ibidem.
[138] Walcott, S. M. (2021). Science Parks and High-Tech Zones. *The Oxford Handbook of China Innovation*, 337.
[139] Lamperti, F., Mavilia, R., & Castellini, S. (2017). The role of Science Parks: a puzzle of growth, innovation and R&D investments. *The Journal of Technology Transfer*, *42*, 158-183.

established one virtual location for physical locations and innovative clusters, something that is really crucial for emerging economy that usually tend to adopt a catch-up or imitation strategy[140] where the interaction and cooperation among universities, industries and governments is key[141]. Universities in fact provide skilled human capital, the governments establish the social and political context necessary and the industries are the heart that drives the entire operation[142]. The name Science Park by itself can be seen as an umbrella term that includes under its scope lots of industrial agglomeration such as high-tech zones, science cities, industrial parks, high-tech regions or science-based industrial parks[143]. It can be seen as a system formed by four main aspects who must interact as in a synergic organism:

1. C, the factor Convergence → using the Resource-based view (RBV) we can look at an enterprise as a collection of both tangible and intangible resources[144]. The heterogeneity of these resources will be key in the conversion process from a short-run competitive advantage to a sustained competitive advantage, but the recognition and the acquisition of these resources for a start-up are really time-consuming and difficult actions. When the assortment of entrepreneurial and innovative elements fully converged in a certain area, their mutual reinforcement provides a path for the company[145].
2. A, the Industrial Agglomeration → according to Porter an industrial agglomeration is a geographically close group of enterprises and institutions, gathered by commonalities and complementarities[146]. Companies in clusters obtain their core competencies mainly from an industrial system built on element agglomeration networks.

[140] Fan, Y. (2017). Research on factors influencing an individual's behavior of energy management: a field study in China. *Journal of Management Analytics*, *4*(3), 203-239.
[141] Zhang, G., & Zhou, J. (2016). The effects of forward and reverse engineering on firm innovation performance in the stages of technology catch-up: An empirical study of China. *Technological forecasting and social change*, *104*, 212-222.
[142] An, H. J., & Ahn, S. J. (2016). Emerging technologies—beyond the chasm: Assessing technological forecasting and its implication for innovation management in Korea. *Technological Forecasting and Social Change*, *102*, 132-142.
[143] Isaksen, A. (2001). Building regional innovation systems: is endogenous industrial development possible in the global economy?. *Canadian journal of regional science*, *24*(1), 101-120.
[144] Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic management journal*, *5*(2), 171-180.
[145] Xie, K., Song, Y., Zhang, W., Hao, J., Liu, Z., & Chen, Y. (2018). Technological entrepreneurship in science parks: A case study of Wuhan Donghu High-Tech Zone. *Technological Forecasting and Social Change*, *135*, 156-168.
[146] Porter, M. E. (1998). *Clusters and the new economics of competition* (Vol. 76, No. 6, pp. 77-90). Boston: Harvard Business Review.

3. E, Industrial Ecology → a new business model that moved the focus from individual manufacturing processes to industries[147]. The members of an industrial ecosystem such as customers, suppliers, producers etc. operate as independent entities but at the same time they form a strong system[148] and their interrelationships push for a dynamic exchange of materials and resources. In this system energy consumption and resource allocation tend to became more optimized since semi-finished products or even wastes of a company can be used by other companies as raw materials[149].
4. R, Radiation → a Science Park is a center of growth whose influence will also improve the economic and social environment of the surrounding area[150]. The Technological entrepreneurial activities established inside the Park will spread with different levels of intensity all over the territory and the resources necessary for these activities consequentially will be also exchange in different ways. All of this will make a variety of entrepreneurial elements expand well behind the Park's boarders, to the surrounding underdeveloped area, narrowing down the gap between the zones outside and inside the Park.

This CAER paradigm is not always declined in the same way in every country. Parks located in emerging economies are also very different from the Parks presented in established economies. There are two main paths to create a Technological Park: spontaneous creation and government guiding[151]. These two tendencies are also connected to the fact that the development of a Science Park is always heavily influenced by the combination of government guidance and market needs[152]. In an established economy, Parks usually are created due to the interaction between scientists and venture capitalists[153] and research institutions are considered the leading force behind the system,

[147] Frosch, R. A., & Gallopoulos, N. E. (1989). Strategies for manufacturing. *Scientific American*, *261*(3), 144-153.
[148] Wu, J., Ye, R. M., Ding, L., Lu, C., & Euwema, M. (2018). From "transplant with the soil" toward the establishment of the innovation ecosystem: A case study of a leading high-tech company in China. *Technological Forecasting and Social Change*, *136*, 222-234.
[149] Wu, D. D., & Olson, D. L. (2010). Introduction to special section on "Risk and technology". *Technological Forecasting and Social Change*, *77*(6), 837-839.
[150] Aparicio, S., Urbano, D., & Audretsch, D. (2016). Institutional factors, opportunity entrepreneurship and economic growth: Panel data evidence. *Technological forecasting and social change*, *102*, 45-61.
[151] Su, Y. S., & Hung, L. C. (2009). Spontaneous vs. policy-driven: The origin and evolution of the biotechnology cluster. *Technological Forecasting and Social Change*, *76*(5), 608-619.
[152] Chung, S. (2002). Building a national innovation system through regional innovation systems. *Technovation*, *22*(8), 485-491.
[153] Su, Y. S., & Hung, L. C. (2009). Spontaneous vs. policy-driven: The origin and evolution of the biotechnology cluster. *Technological Forecasting and Social Change*, *76*(5), 608-619.

generating knowledge, technology and the academic background necessary to sustain the entrepreneurs. Many firms presented in the zone are academic spin-offs. In this type of system, the government is the one financing the research institutes, letting them continuing their technological innovation, while the VCs instead provide capitals for the commercialization of innovation and entrepreneurship[154]. In an emerging economy instead, Science Parks are government planned innovation areas focused on high-technology development[155]. the government also set up financial institutions to support the start-ups' ecosystem since the investment system by its own is not yet developed enough. Another aspect that is very dissimilar is the human research availability and training, an element that is crucial to the success of the Technological Park. In an established economy, Science Parks can count on the presence of many institutions and universities who provide a solid base for the scientific research[156], while in emerging economies there will be a vertical project directed by the government that will integrate the local universities, industries institutions, independent scholars and government resources[157].

China, after the cultural revolution, was quick to embrace this new development method. The first Chinese Science Park and High-Tech Zones (SPHZ) was the Zhongguancun in Beijing, founded in 1988[158]. It presented very similar characteristics to the one in North Dakota[159] and in turn, it became a paradigm to imitate itself. In fact, according to the Minister of Science and Technology, one of the most important body in charge of the SPHZs' operations, there are now 54 parks in China[160]. Many of them was heavily inspired by the original Beijing park and presented very similar features such as high-tech pioneer center, high-tech and new-tech enterprise incubator, overseas student park, nearby research universities and a significant presence of firms. Since the advantage derived from the clustering of businesses in the spreading of information is very well-

[154] Cui, Y., Jiao, J., & Jiao, H. (2016). Technological innovation in Brazil, Russia, India, China, and South Africa (BRICS): an organizational ecology perspective. *Technological Forecasting and Social Change*, *107*, 28-36.
[155] Lau, A. K., & Lo, W. (2015). Regional innovation system, absorptive capacity and innovation performance: An empirical study. *Technological Forecasting and Social Change*, *92*, 99-114.
[156] Lai, Y. L., Hsu, M. S., Lin, F. J., Chen, Y. M., & Lin, Y. H. (2014). The effects of industry cluster knowledge management on innovation performance. *Journal of business research*, *67*(5), 734-739.
[157] Liu, Y., Han, W., Zhang, Y., Li, L., Wang, J., & Zheng, L. (2016). An Internet-of-Things solution for food safety and quality control: A pilot project in China. *Journal of Industrial Information Integration*, *3*, 1-7.
[158] Walcott, S. M. (2021). Science Parks and High-Tech Zones. *The Oxford Handbook of China Innovation*, 337.
[159] Poon, T. S. C., Wu, C. H., & Liu, M. C. (2023). Developing entrepreneurial ecosystem: a case of unicorns in China and its innovation policy implications. *Asian Journal of Technology Innovation*, 1-17.
[160] Ministry of Science and Technology, (2011) List of national high-tech development zones, accessed August 7, 2011, http://www.most.gov.cn/gxjscykfq/gxjsgxqml/, consulted in 12/01/2023.

documented[161], all of these parameters should create a system where knowledge transfer to and from anywhere is easy and efficient, and should also be located in a pleasant environment where high-quality lifestyle is guaranteed for all its inhabitants [162].

These parks in fact are seen not only as tools to incentive the economic development of an area, but also as provider of employment for an highly educated labor force that must be convinced to stay and live in the region. Inner China SPHZs in particular are specifically designed to be attractive for their own universities students that would be otherwise more incline to move towards the more developed coastal areas. They usually include amenities such as villas, golf and country clubs, high-quality schools for children, banks, pedestrian-mall retail streets, restaurants and even foreign-brand coffee shops and food setting like Starbucks or KFC[163]. Other methods to appeal qualified labor forces are preferential housing, hukou residency permit for the location desired and discounted tax treatment. Moreover, a well-designed SPHZ must reflect and be specialized in the local strengths. They should be also equally spread on the country territory to guarantee geographic, political and economic balance, but we see a clear preference for the coastal provinces. Nonetheless, nowadays costs and the conformation of the labor market itself invite to select places that are far away from the crowded cities. This new approach towards the placement of the parks is also correlated to the discovery that universities are engineering of economic growth in themselves. Fang and Xie have even suggested that the right location is also determined by the ancient philosophy of *Feng Shui*[164]. Even if China government over time has shifted to a less direct control over the technological field, it has still a crucial role in the choosing of the place and of the focus of the new parks. Most of them are indeed still guided by municipal governments. Interact with local economic-political bodies is vital and any attempt to override them and trying to establish a direct contact with the national government can be very detrimental[165].

[161] Bathelt, H., Malmberg, A., & Maskell, P. (2004). Clusters and knowledge: local buzz, global pipelines and the process of knowledge creation. *Progress in human geography*, *28*(1), 31-56.
[162] Löfsten, H., & Lindelöf, P. (2002). Science Parks and the growth of new technology-based firms—academic-industry links, innovation and markets. *Research policy*, *31*(6), 859-876.
[163] Walcott, S. M. (2021). Science Parks and High-Tech Zones. *The Oxford Handbook of China Innovation*, 337.
[164] Fang, C., & Xie, Y. (2008). Site planning and guiding principles of hi-tech parks in China: Shenzhen as a case study. *Environment and Planning B: Planning and Design*, *35*(1), 100-121.
[165] Walcott, S. M. (2021). Science Parks and High-Tech Zones. *The Oxford Handbook of China Innovation*, 337.

We can see an governmental interest in this type of parks since the Deng Xiaoping era, where it began a push for the development of research institutions. Jiang Zemin, his successor, supported not only the development of the indigenous innovative capabilities bur also the improving of the attraction factors for FDI in sectors that Beijing saw as important for employment reasons or for technology learning purposes. With him, we see the transition of China to a socialist market economy with Chinese characteristic and a spiked in privatizations. The SPHZs initially helped to match foreign firms and local manufacturing or assembling operations basing their selection on convenience or cost-reduction factors[166]. The goal behind to the creation of this parks was to attract FDI to create more job opportunities, promote technological transfer, incubate Chinese start-ups and raising local technological capabilities. SPHZs offered to companies physical infrastructures like electricity and equipment and intellectual infrastructures, i.e. lectures, instruction and discussions. Among the many initiatives set up by the central government the most significant are:

1. Key Technologies Research and Development Program, also called 863 Program from the date in which it was announced. It supported marketable technology belonging to the biotechnology, astrobiology, laser, automation and energy fields.
2. The 973 Program, that also received its name from the date in which it was announced, targeted seven industries and helped local governments with high-tech zones, personnel training and FDI- cooperation projects.
3. The Torch program, started in 1988, was created to fund entities whose aim was to help the commercialization of high-tech products.
4. The Spark Program, whose name instead is from the Mao Zedong famous saying "a little spark can start a forest fire", was created for helping to the revitaliza the technological industries of the rural areas.

Another importation governmental decision was also taken in 2004 regarding the promotion of the so-called "eco-industrial" Parks (EIPs). Indeed, a key aspect involved in the creation of a Science Park that I have not yet discussed is the environmental deterioration that the sudden appearance of an industrial zone of this magnitude inevitably bring with itself. Air pollution, water

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pollution and resource depletion are all important elements that we must considered[167]. Guarantee a balance between sustainability and economic development is now vital and EIPs are deeply connected to new topics such as clean production, resource efficiency, climate change, industrial symbiosis and circular economy[168]. In fact, EIPs over the two past decades have helped to reduce China's greenhouse gas emissions [169], promote green transformation [170] and low-carbon development[171].

Conclusions

This work aimed at presenting the complexity of the Unicorn phenomenon in China while trying to explain the causes that allowed such a rapid growth and expansion. The results that I have presented are both extraordinary and contradictory, as always when the PRC is involved. Matter-of-factly, the system that allowed to achieve the incredible goal of 173 Unicorns is forged by contradictions. The most glaring one is certainly the fact that while this structure is heavily dependent on the state support to function, it is simultaneously running on foreign capitals, in particular US ones. Furthermore, in the past crisis when there was the need to improve the system and make it more resilient, the model that the authorities have always chosen to imitate was the US one. The new geopolitical situation has made this paradox unsustainable and now we see clear signs of distress from the Chinese startups world.

Without US money and a clear example to follow, China must now face an unprecedent situation. An article from the Financial Times[172] has illustrated how Xi's government is answering to this *impasse*, trying to redesign the system to better suit this new reality and, most importantly,

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[172] Lockett Hudson and Leng Cheng, September 22, 2023, "How Xi Jinping is taking control pf China's Stock Market", Financial Times, consulted in 10/01/2024.

to better suit his policy. The government has always been in charge of the entire financial system while being one of its most important participant, yet it is now taking an even blunter approach. The beginning of this shift can be tracked down to the Big Tech Crackdown, started from the rebellious founder of Alibaba, Jack Ma, and his desire for China to take a more liberal approach. His dream, likes his company, has been promptly crushed by the harsh reality of a legislation that does not want to imitate the American model anymore. The stock markets are being used to move capital towards specific sectors in order to reshape the economy in a way that fits the design of the government, such that the market is now forced to serve the State, even if in a less restrictive way that in the past. Mao Zedong's "whole-nation system", in fact, has been restructured and reimagined in a "new whole-nation system", where market mechanisms, as we have seen in the first chapter, are now accepted under the guidance of Xi's vision. Even the new registration-based system is part of this scheme and what it may seem at first glance like a westernization of a Chinese fundamental market mechanism, is instead another step towards a new structure guided by political guidelines.

This can also be interpreted as the key to understand all of China's Unicorn system and economy as a whole: the American line of thinking has never been really accepted, while the instruments that it created were instead used and deployed in a new way, integrated in a different scheme. The pinnacle of this new innovation-driven economy, the Unicorns companies, are likely to be the most important example of this reality. Entities that on the surface are the physical embodiment of the freedom of the market and all of its many actors, are instead supported by the state since the very beginning. The guanxi, the relationships between the founders of a Unicorn and the other subjects presented in the area, are fundamental for its creation, and this is highlighted by the entrepreneurial preference for local governmental investments. The entire VCPE system, dominated by governmental players of different natures, is a testament of how the public is always being heavily intertwined with the private and, in some ways, it was the basis from which the actions of the single entrepreneurs originated from. The very fact that Unicorns are mostly located in Technological Parks, the very expressions of the state policies, is quite telling.

The new push for the integration in this system of the huge public institutions, such as pension funds and banks, is not only a necessary way to compensate the lack of foreign capitals,

but also a need to further implement this statal approach towards the financial world. China is now experiencing a period of rapid and drastic changes, yet the foundations of this new system that is trying to build were already there and maybe what it was considered as an intermediate phase between a less modern, state controlled financial system and a more sophisticated liberal one, inspired by the Western ideals, was instead the starting of a completely different financial model, something that the world has never seen.

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