# Mastercard Caixin BBD China New Economy Index

## Overview

In October 2020, the Mastercard Caixin BBD New Economy Index (NEI) reading came in at 29.5, indicating that the New Economy accounted for 29.5% of overall economic input activities that month, up 0.7 ppts from September (Chart 1). The rising NEI was attributed to the increase in capital inputs. New economy is defined as following: 1) human capital intensive, technology intensive and capital light, 2) sustainable rapid growth, and 3) in line with the strategic new industries defined by the government. Please refer to our previous reports (March 2016 and March 2017) for the list of NEI sectors.



Chart 1: China Monthly New Economy Index
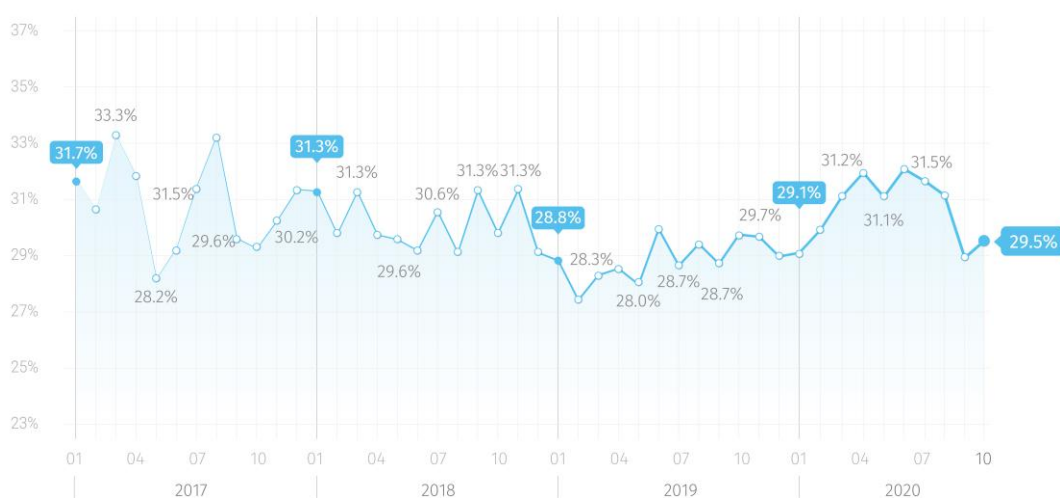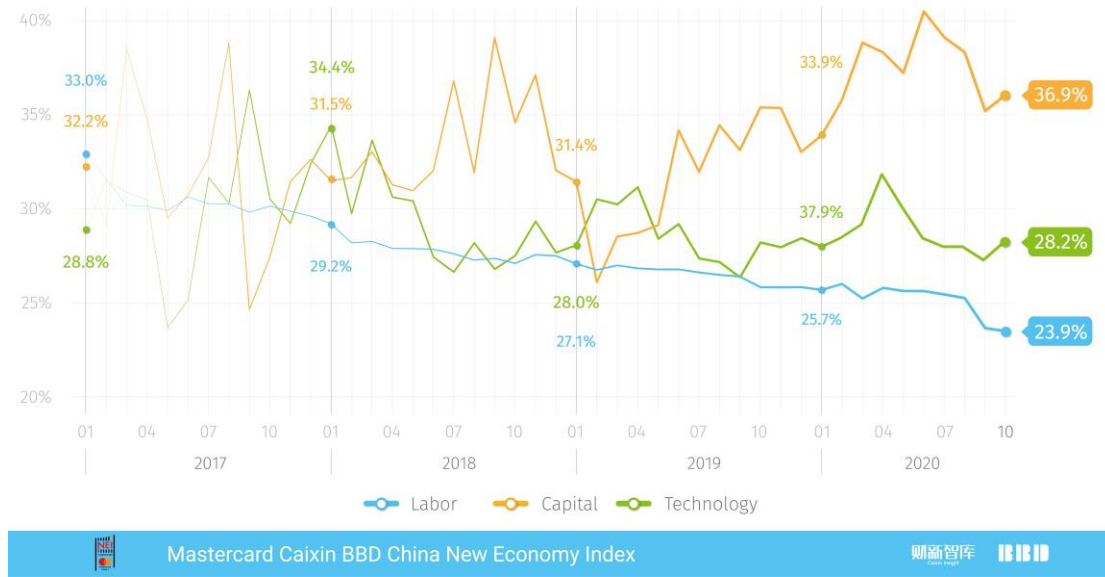
## Primary Inputs

The NEI includes labor, capital and technology inputs that account for 40%, 35% and 25% of the total weights of the index, respectively. The rising NEI was attributed to the increase in capital inputs (Chart 2). Capital input fluctuated widely in recent year, increasing to 36.9 this month, with 1.7 MoM increase. Technology input index was on a downtrend since April 2020, coming in at 28.2 this month, with 1.1 MoM increase. Labor input index declined moderately in recent two years, decreasing to 23.9 this month, with 0.5 MoM decrease.
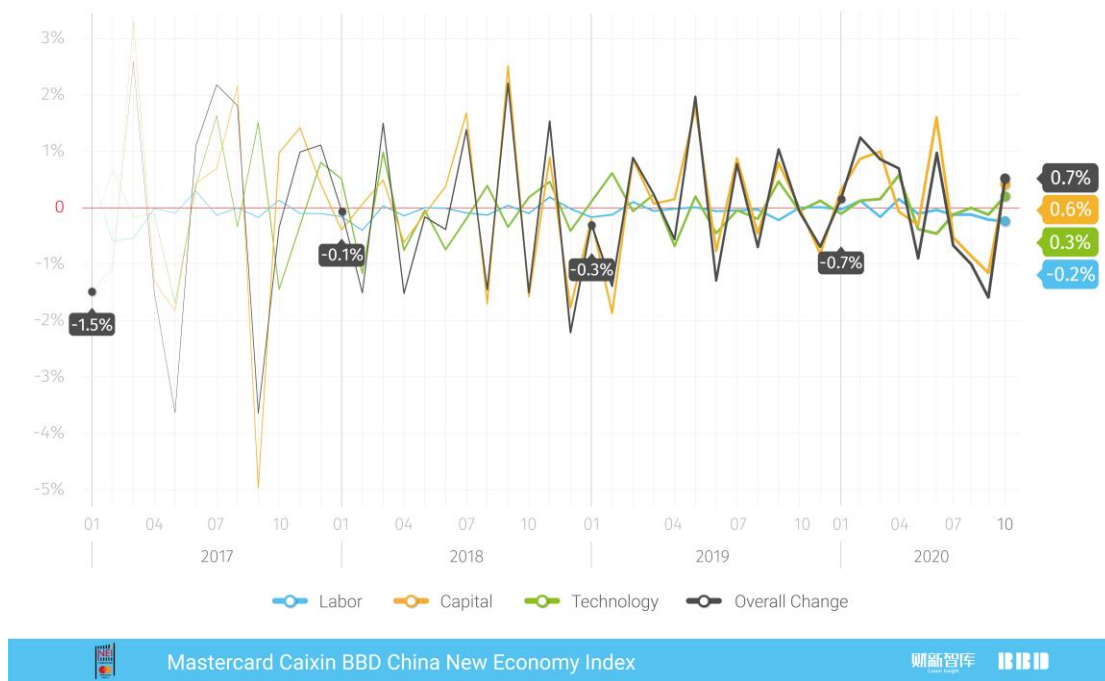
## Chart 2: NEI Primary Input Index



Taking the weights into account, percentage changes in labor, capital and technology inputs were -0.2, 0.6, and 0.3 ppts, respectively. The net NEI change was 0.7 ppts in total (Chart 3).
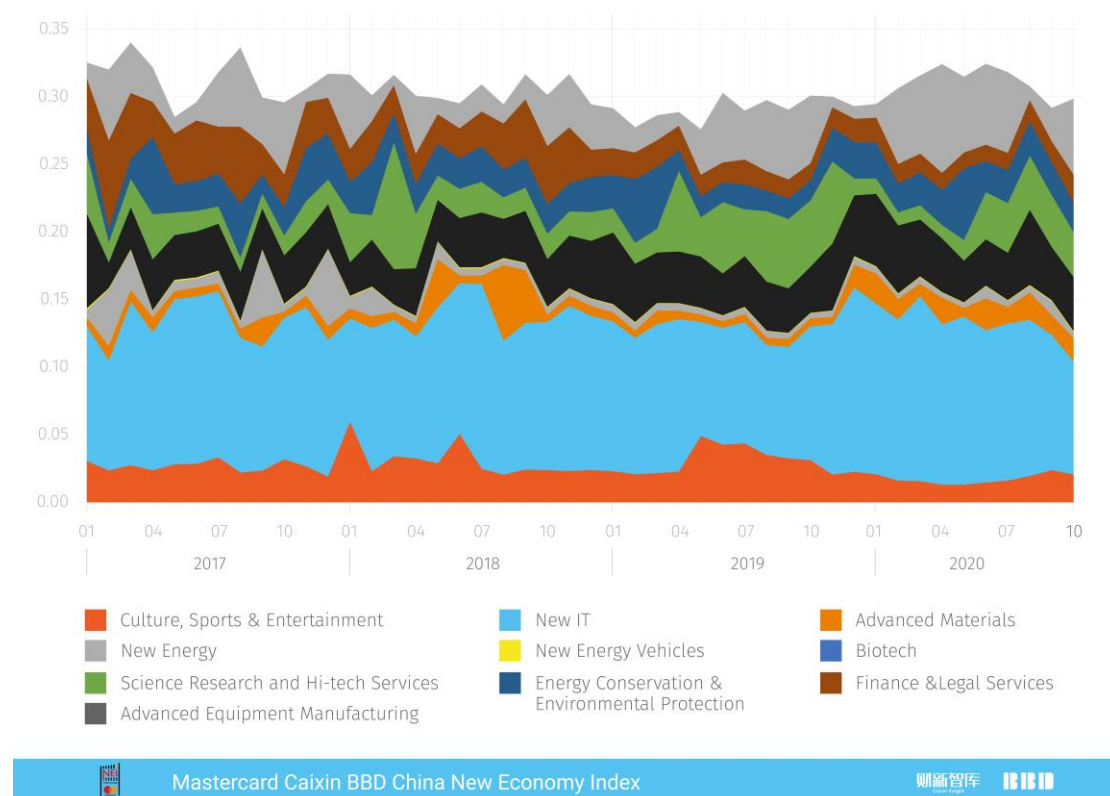
## Chart 3: Primary Input Contribution to NEI



As for sectors, the New IT industry formed the largest proportion of the New Economy Index, contributing 8.3 ppts to NEI. Advanced Equipment Manufacturing was the industry with fastest growth in October, contributing 5.6 ppts and ranking the Second. Science Research and Hi-tech

Service came fourth from third, the biggest drop in ranking, contributing 3.3 ppts in October (Chart 4).

Chart 4: New Economy Sector Contribution Breakdown



Legend:
- Culture, Sports & Entertainment
- New Energy
- Science Research and Hi-tech Services
- Advanced Equipment Manufacturing
- New IT
- New Energy Vehicles
- Energy Conservation & Environmental Protection
- Advanced Materials
- Biotech
- Finance &Legal Services

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## New Economy Employment

In October 2020, the average monthly entry-level salary of the New Economy was RMB 11,874, increasing from last month's level of RMB 11,423 (Chart 5), and the entry-level salary premium of the New Economy which is the ratio of average entry salary level of New Economy to that of the whole economy, increased to 8.0%, compared to 7.7% in September (Chart 6). The wages are compiled from online websites of career platforms and recruitment services including 51job and Zhaopin, as well as other sites that list job openings.

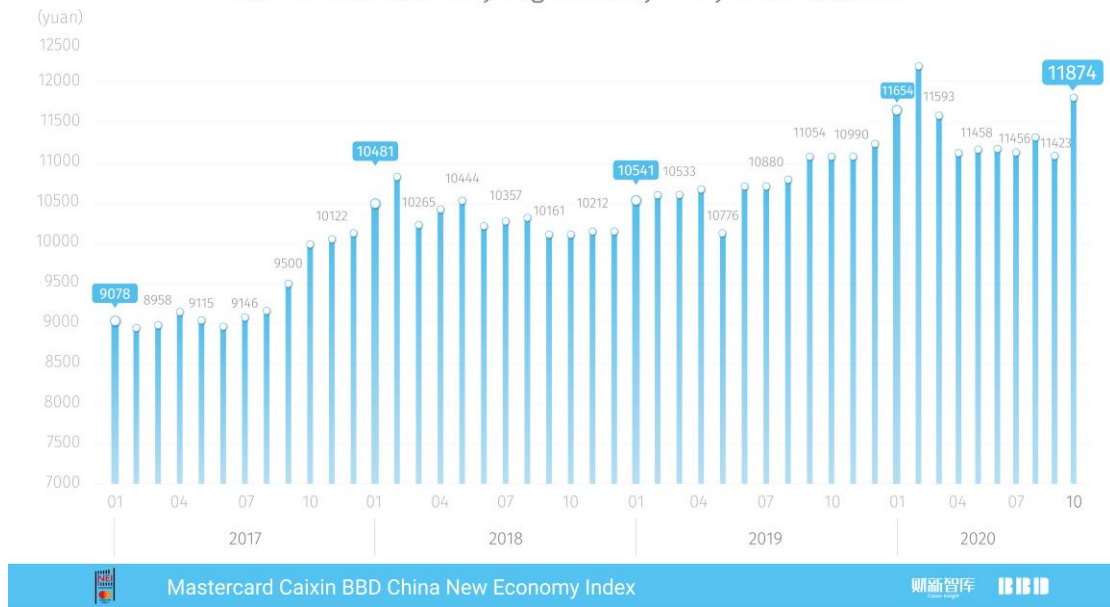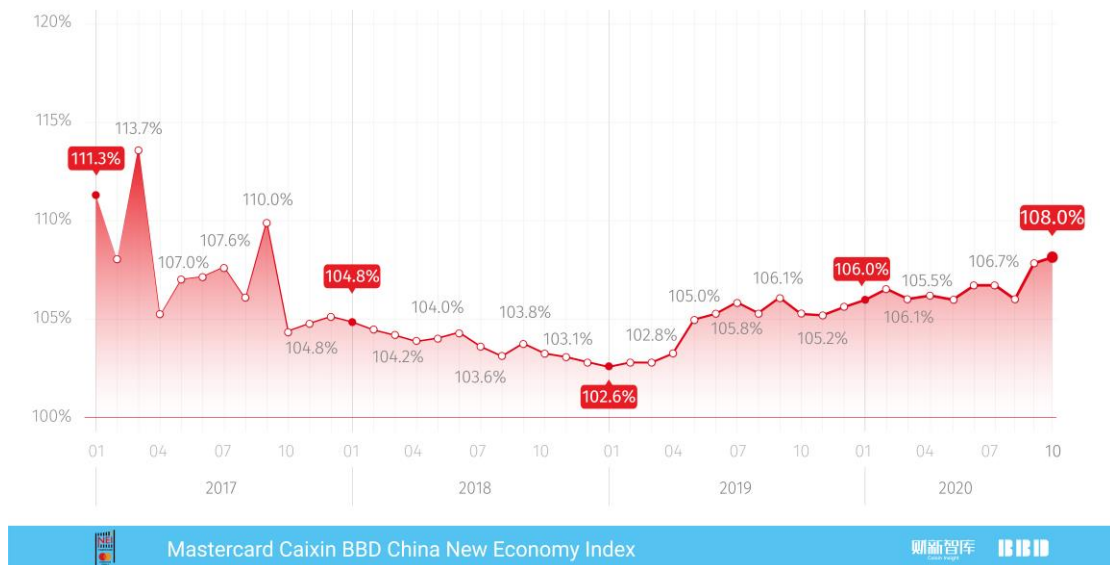Chart 5: New Economy Avg. Monthly Entry-Level Salaries

Chart 6: New Economy Entry-Level Salary Premium over Economy-wide Entry Level Salaries

## Economic Trend Based on Employment Data

In past five years, automation had a significant impact on the labor structure. The repeatability of jobs reflected the extent to which a job was repetitive. Higher repeatability indicated a higher degree of automation. Data implied that the repeatability of jobs in most provinces declined, such as in Guangdong, Tianjin and Shanghai, while the repeatability of jobs in Shaanxi, Anhui, Sichuan and other places experienced an upward trend (Chart 7-1). This phenomenon indicated that automation of the manufacturing industry spilled over rapidly cross different regions and

the manufacturing industry shifted cross regions.

Chart 7-1: Repeatability of Jobs by Province (2016-2020)
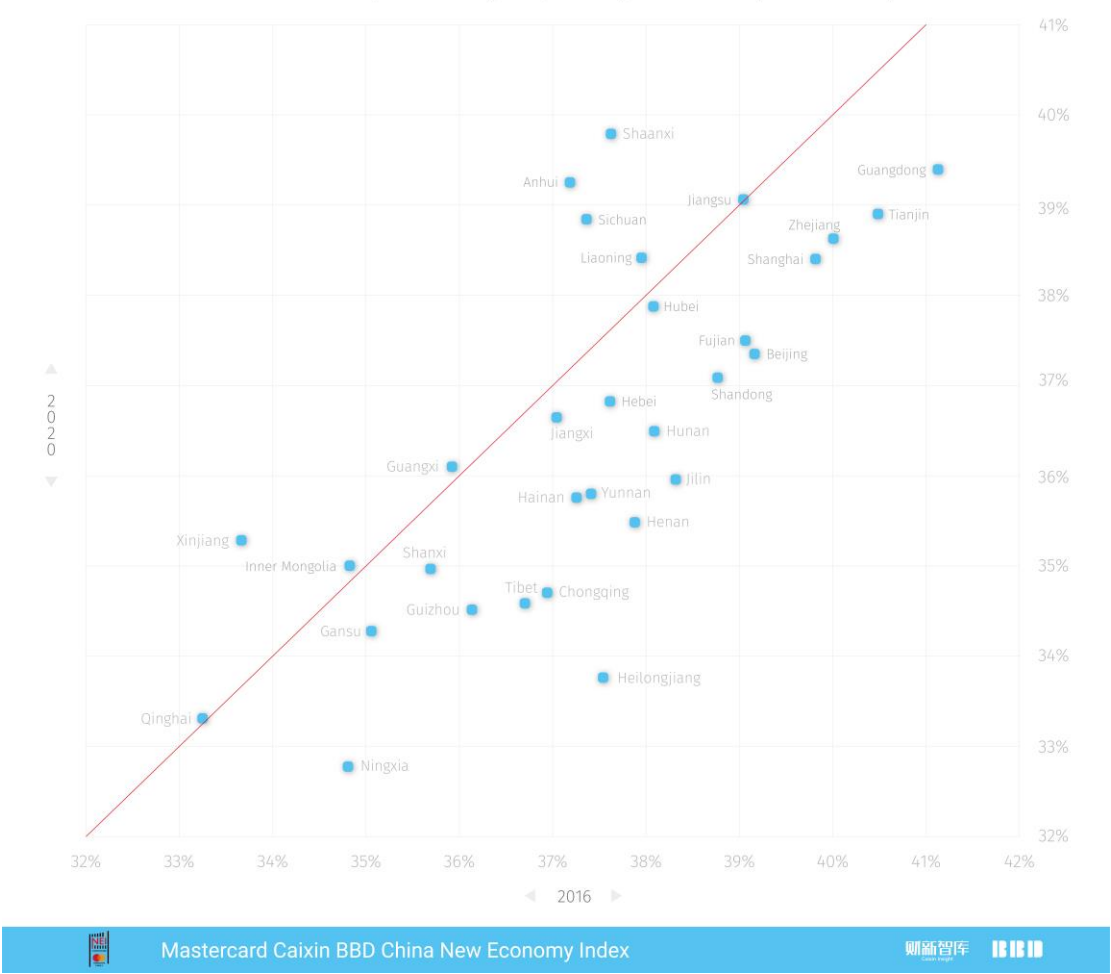
The repeatability of most industries, especially manual manufacturing industries, reduced dramatically from 2016 to 2020, indicating that the automation degree of these industries improved (Chart 7-2, Chart 7-3).

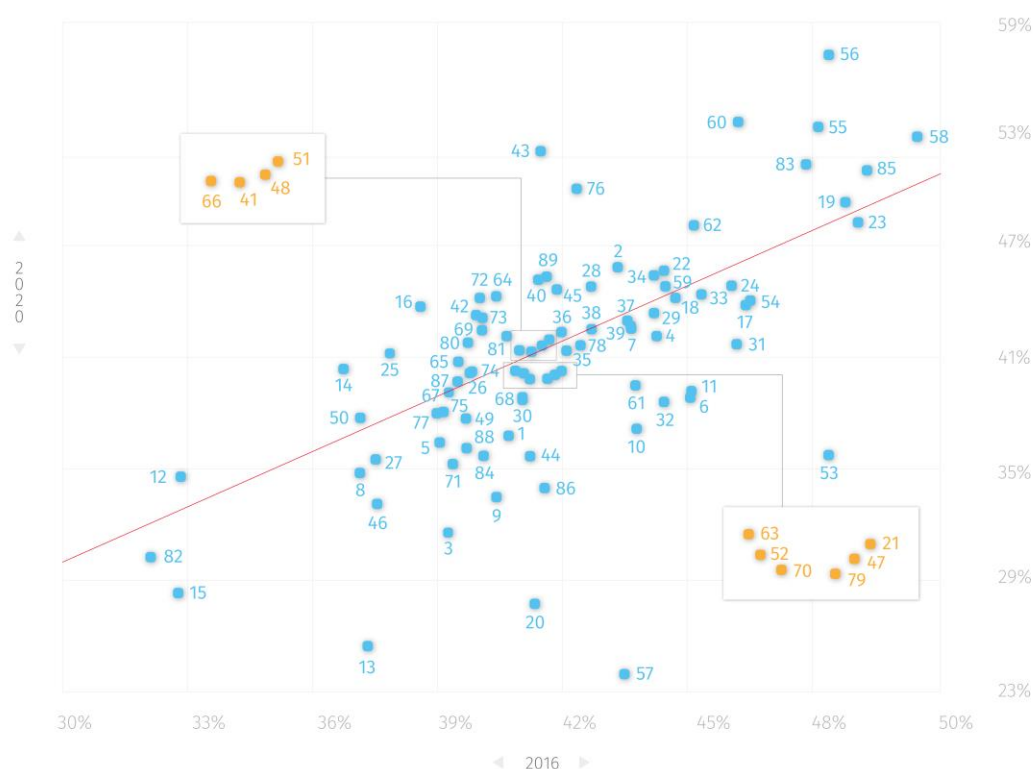# Chart 7-2: Repeatability of Jobs by Industry (2016-2020)

## Chart7-3: Industry Code

| | | | | | |
|---|---|---|---|---|---|
| 1 | Farming | 32 | Smelting and Pressing of Non-ferrous Metals | 63 | Telecommunication, Radio and Television and Satellite Transmission Service |
| 2 | Forestry | 33 | Manufacture of Metal Products | 64 | Internet and Related Service |
| 3 | Animal Husbandry | 34 | Manufacture of General Purpose Machinery | 65 | Software and Information Technology |
| 4 | Fishery | 35 | Manufacture of Special Purpose Machinery | 66 | Monetary and Financial Service |
| 5 | Service in Support of Agriculture | 36 | Manufacture of Automobiles | 67 | Capital Market Service |
| 6 | Mining and Washing of Coal | 37 | Manufacture of Railway, Ship, Aerospace and Other Transport Equipments | 68 | Insurance |
| 7 | Extraction of Petroleum and Natural Gas | 38 | Manufacture of Electrical Machinery and Equipment | 69 | Other Financial Activities |
| 8 | Mining and Processing of Ferrous Metal Ores | 39 | Manufacture of Communication Equipment, Computers and Other Electronic Equipment | 70 | Real Estate |
| 9 | Mining and Processing of Non-Ferrous Metal Ores | 40 | Manufacture of Measuring Instruments and Machinery | 71 | Leasing |
| 10 | Mining and Processing of Non-Metal Ores | 41 | Other Manufacture | 72 | Business Services |
| 11 | Support Activities for Mining | 42 | Utilization of Waste Resources | 73 | Research and Experimental Development |
| 12 | Mining of Other Ores | 43 | Repair Service of Metal Products, Machinery and Equipment | 74 | Professional Technical Services |
| 13 | Processing of Food from Agricultural Products | 44 | Production and Supply of Electric Power and Heat Power | 75 | Science and Technology Popularization and Application Services |
| 14 | Manufacture of Foods | 45 | Production and Supply of Gas | 76 | Management of Water Conservancy |
| 15 | Manufacture of Beverage | 46 | Production and Supply of Water | 77 | Ecological Protection and Environmental Treatment |
| 16 | Manufacture of Tobacco | 47 | Construction of Buildings | 78 | Management of Public Facilities |
| 17 | Manufacture of Textile | 48 | Civil Engineering | 79 | Service of Households |
| 18 | Manufacture of Textile Wearing Apparel, Footwear and Caps | 49 | Building Installation | 80 | Repair of Motor Vehicle, Electronics and Household Products |
| 19 | Manufacture of Leather, Fur, Feather and Its Products | 50 | Building Decoration and Other Construction | 81 | Other Services |
| 20 | Processing of Timber, Manufacture of Wood, Bamboo, Rattan, Palm and Straw Products | 51 | Wholesale Trade | 82 | Education |
| 21 | Manufacture of Furniture | 52 | Retail trade | 83 | Health |
| 22 | Manufacture of Paper and Paper Products | 53 | Railway Transport | 84 | Social Service |
| 23 | Printing, Reproduction of Recording Media | 54 | Road Transport | 85 | Journalism and Publishing Activities |
| 24 | Manufacture of Articles for Culture, Education and Sport Activities | 55 | Water Transport | 86 | Radio, Television, Motion Picture and Videotape Programme Production ServiceHousehold Products |
| 25 | Processing of Petroleum, Coking and Processing of Nuclear Fuel | 56 | Air Transport | 87 | Cultural and Art Activities |
| 26 | Manufacture of Raw Chemical Materials and Chemical Products | 57 | Transport Via Pipelines | 88 | Sports Activities |
| 27 | Manufacture of Medicines | 58 | Loading, Unloading and Forwarding Agency | 89 | Entertainment |
| 28 | Manufacture of Chemical Fibres | 59 | Storage | | |
| 29 | Manufacture of Rubber and Plastics | 60 | Post | | |
| 30 | Manufacture of Non-metallic Mineral Products | 61 | Hotels | | |
| 31 | Smelting and Pressing of Ferrous Metals | 62 | Catering Services | | |

Machinery utilization of jobs in different regions and industries can also reflect the automation level (Chart 8). Machinery popularization increased in most regions, such as Tianjin, Jiangsu and Shaanxi, while that in Shanghai and Zhejiang remained unchanged. In contrast to repeatability of jobs, the usage of machinery improved in all industries, particularly in manufacturing industries such as pipelines transportation and petroleum and natural gas extraction, which were among industries where robots and automation technology have been widely adopted in recent years.

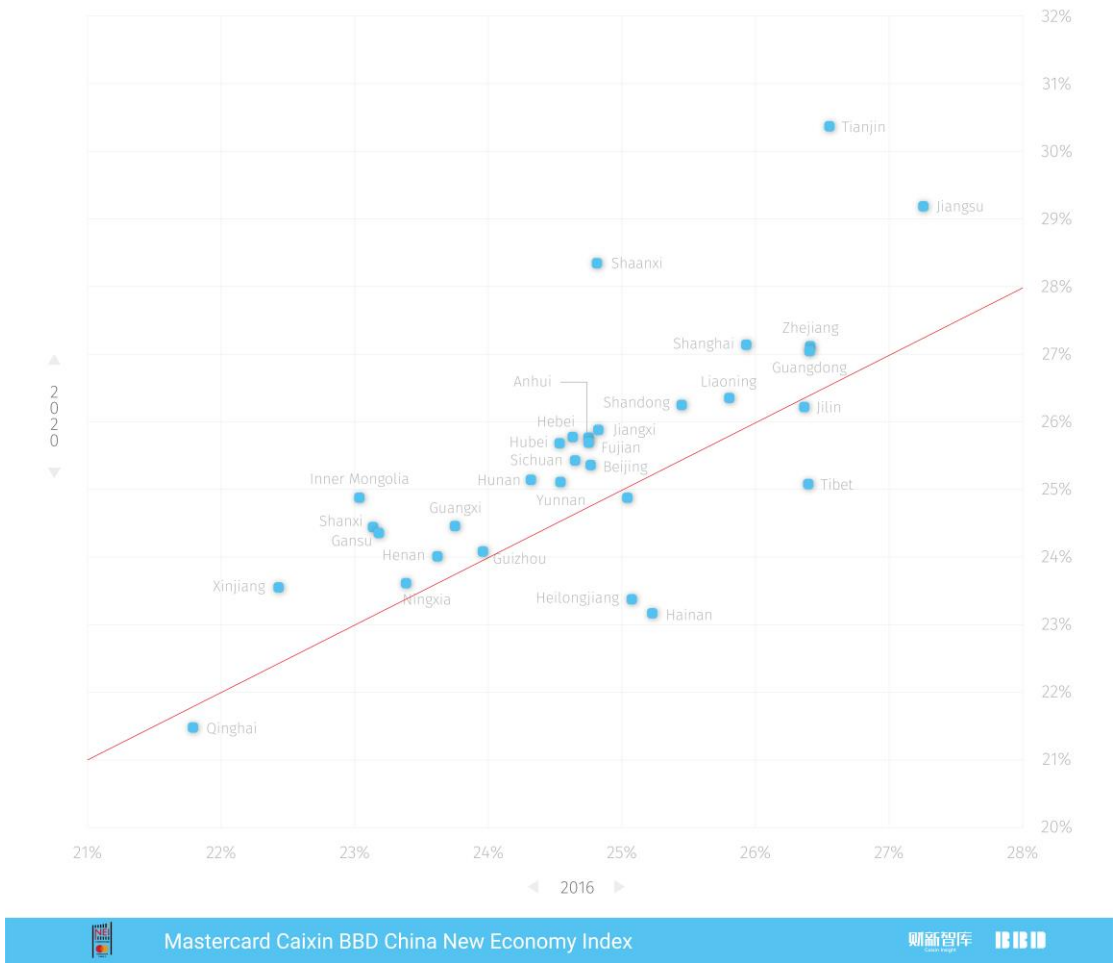# Chart 8-1: Machinery Utilization of Jobs by Province (2016-2020)

Chart 8-2: Machinery Utilization of Jobs by Industry (2016-2020)

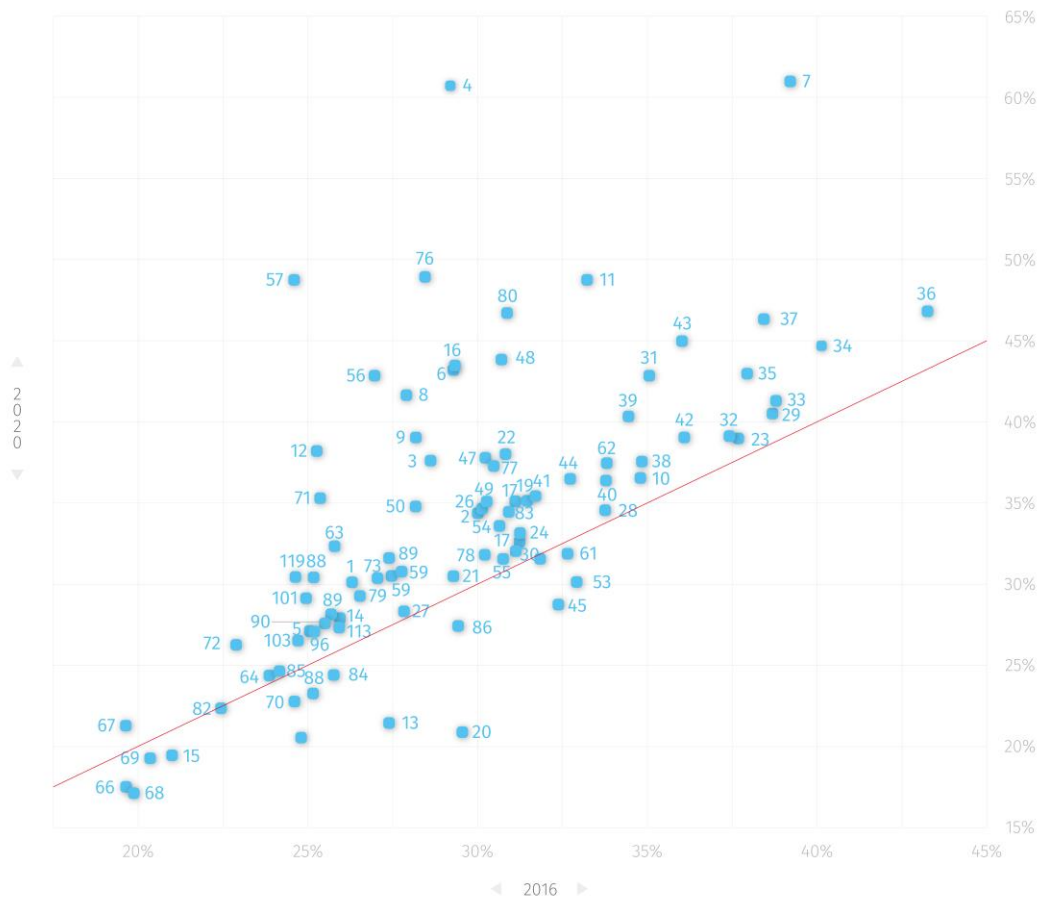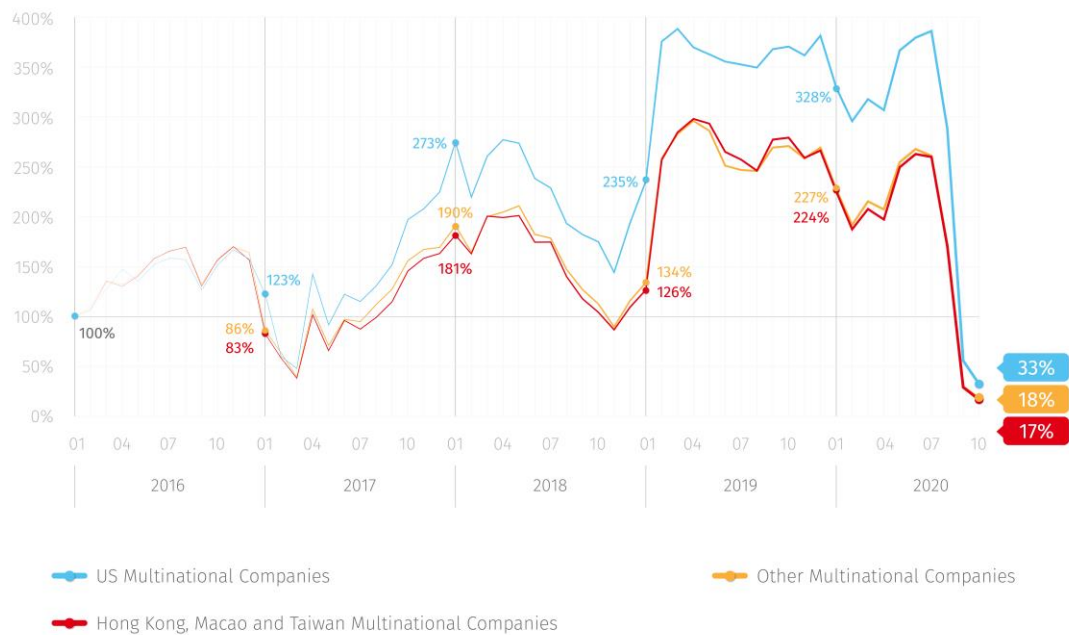Mastercard Caixin BBD China New Economy Index

Chart 9 implied the recruitment of US multinational companies, Hong Kong, Macao and Taiwan multinational companies and other multinational companies in China. In past five years, the recruitment of US multinational companies grew faster than Hong Kong, Macao and Taiwan multinational companies and other multinational companies in China. The recruitment of US multinational companies did not decline faster than other multinational companies since China–US trade war. However, the recruitment of US multinational companies increased in 2019, in contrast to the policy of "Manufacturing return to US". In the past two months, the recruitment of all multinational companies dropped significantly to the level which was lower than that in early 2016.

## Chart 9: Recruitment of Different Multinational Companies



Legend:
- US Multinational Companies
- Other Multinational Companies
- Hong Kong, Macao and Taiwan Multinational Companies

Data labels: 100%, 86%, 83%, 123%, 273%, 190%, 181%, 235%, 134%, 126%, 328%, 227%, 224%, 33%, 18%, 17%

X-axis: 01 04 07 10 (2016) 01 04 07 10 (2017) 01 04 07 10 (2018) 01 04 07 10 (2019) 01 04 07 10 (2020)

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## City Rankings of the New Economy

Overall New Economy Rankings are based on a weighted average of the percentile ranks of indicators for the city in the past six months. The top twenty cities were shown in Chart 10. In October, the top five cities were Beijing, Shanghai, Shenzhen, Guangzhou and Hangzhou.

Chart 10: China's Top 20 Cities Ranked by New Economy Sector Output

Average Percentiles for Aggregate New Economy Inputs（Apr2020 – Oct 2020）
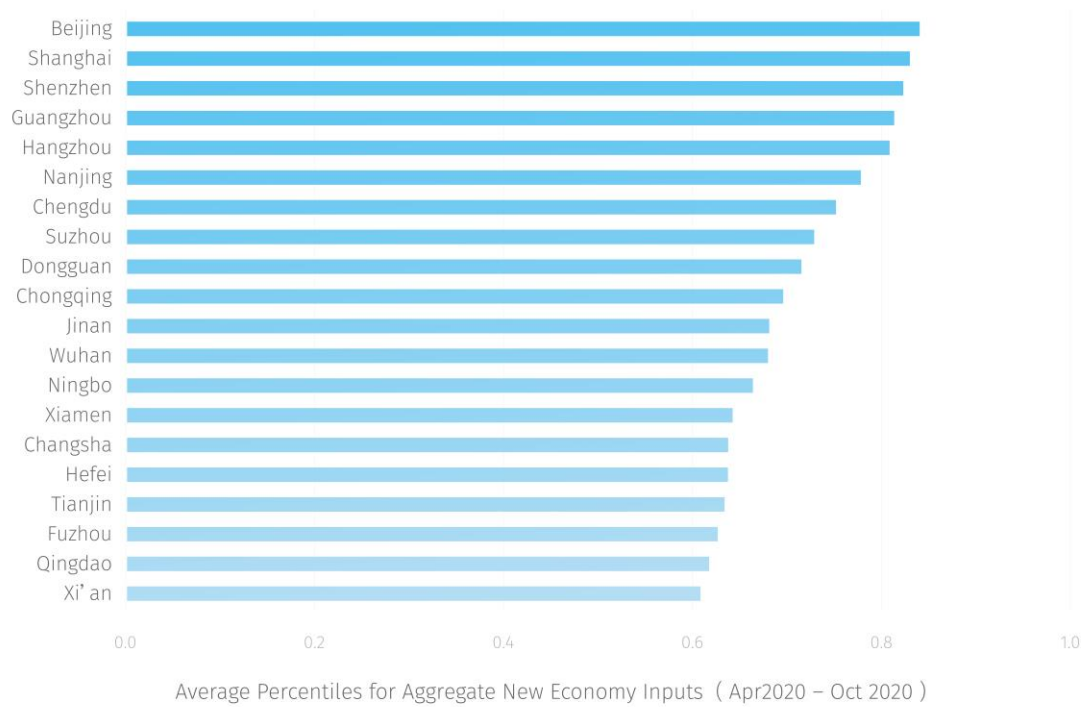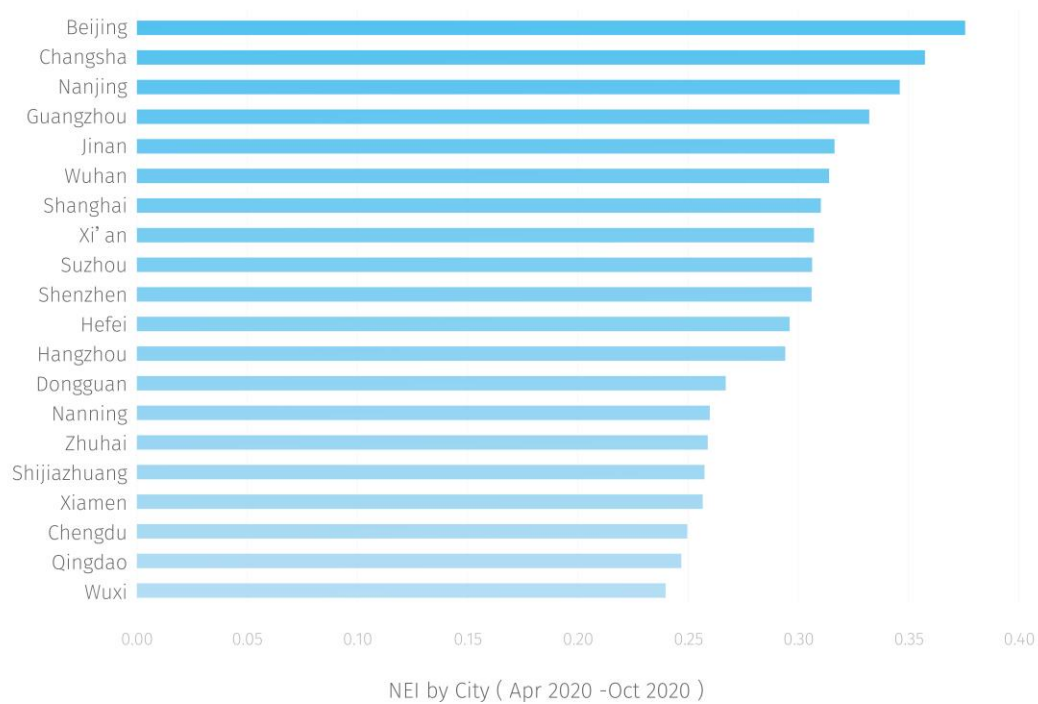
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Chart 11 showed the average NEI city rankings between April 2020 and October 2020. The top five cities were Beijing, Changsha, Nanjing, Guangzhou and Jinan.

Chart 11: China's Top 20 Cities Ranked by Average NEI



NEI by City（Apr 2020 -Oct 2020）

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In addition, we showed the city rankings adjusted by living cost by taking housing price, minimum wage and disposable income per capita into account (Chart 12). After the adjustment, the top five cities were Beijing, Chengdu, Shanghai, Chongqing and Hangzhou, following by Shenzhen and Nanjing.

Chart 12: China's Top 20 Cities Ranked by New Economy Sector Output Adjusted by Living Cost
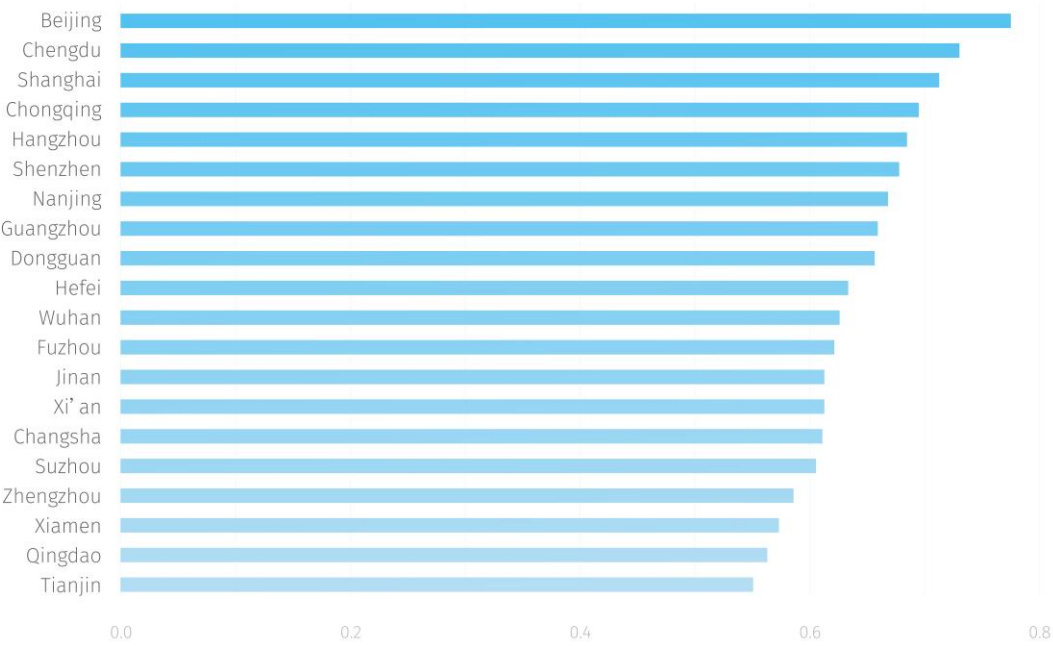


Average Percentiles for Aggregate New Economy Inputs Adjusted by Living Cost（Apr2020 – Oct 2020）

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The Mastercard Caixin BBD China New Economy Index is the fruit of a research partnership between Caixin Insight Group and BBD, in collaboration with the National Development School, Peking University. The subject of a year of research, the NEI was first publically released on March 2, 2016 and will be issued the 2nd of every month at 10:00am China Standard Time.


## About Mastercard

Mastercard (NYSE: MA), www.mastercard.cn, is a technology company in the global payments industry. We operate the world's fastest payments processing network, connecting consumers, financial institutions, merchants, governments and businesses in more than 210 countries and territories. Mastercard's products and solutions make everyday commerce activities, such as shopping, traveling, running a business and managing finances-easier, more secure and more efficient for everyone. Follow us on Twitter @MastercardAP and @MastercardNews, join the discussion on

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Caixin Media is China's leading media group dedicated to providing financial and business news through periodicals, online content, mobile applications, conferences, books and TV/video programs. Caixin Media aims to blaze a trail that helps traditional media prosper in the new media age through integrated multimedia platforms. Caixin Insight Group is a high-end financial data and analysis platform. For more information, please visit [www.caixin.com](http://www.caixin.com).

## About BBD (Business Big Data)

BBD is a leading Big Data and quantitative business analytics firm specializing in the analysis of the high-growth industries emerging in Mainland China. Through dynamic data tracking, credit analysis, risk pricing and economic index construction, BBD provides its clients with a wide range of services at both the macro and micro level. For more information, please visit [http://www.bbdservice.com/](http://www.bbdservice.com/).