

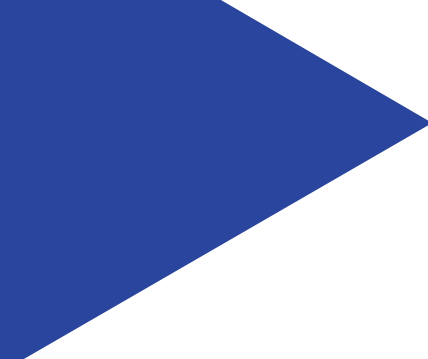


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► Short Hours of Work, Long Hours of Work, and Work Hours Mismatch in China's Labor Market

From the Perspective of
High-Quality and Full Employment





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High-Quality and Full Employment

Xiangquan Zeng, Zhi Jiang, Yuxia Zhang, Shutong Chen



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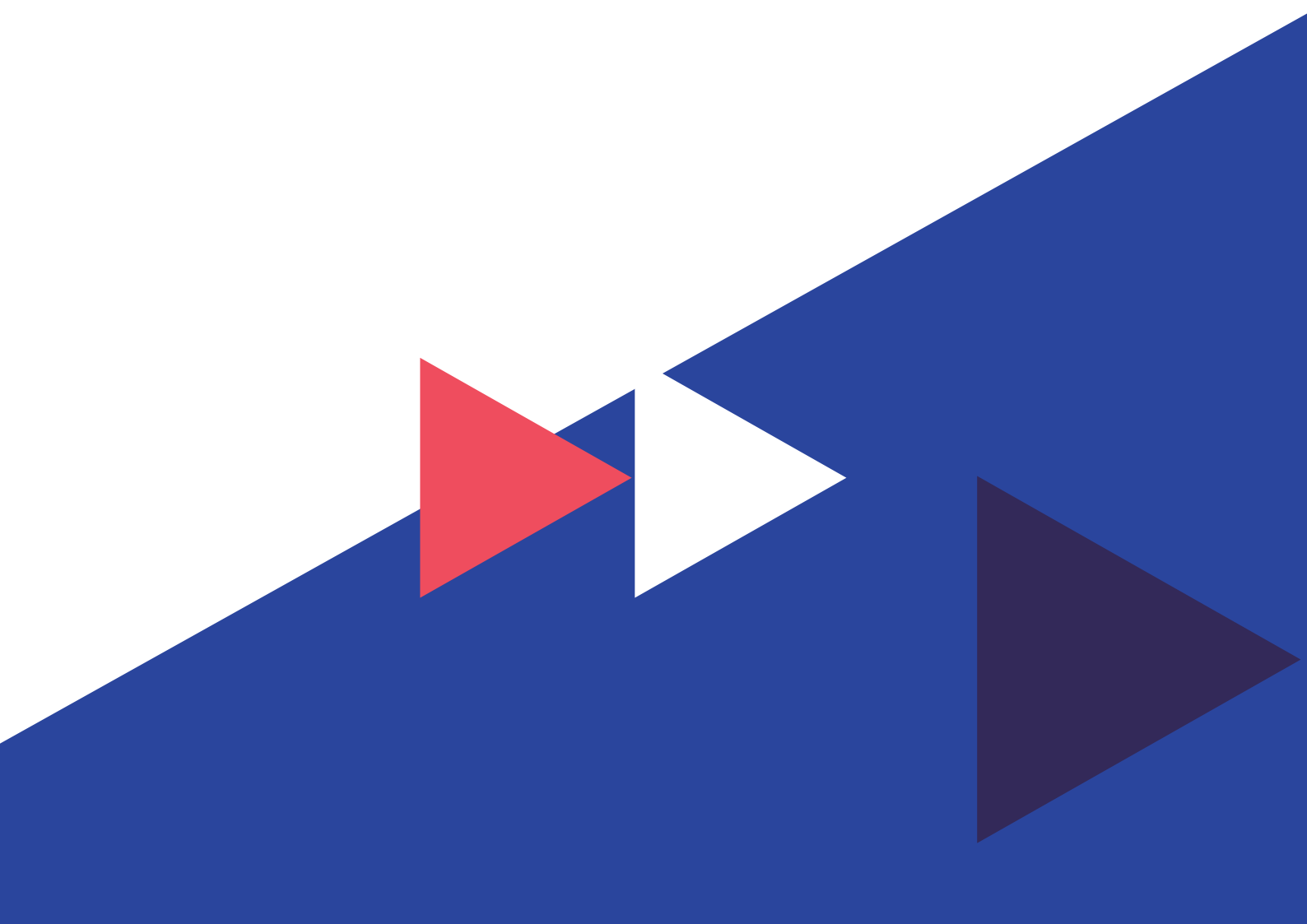
Abstract

There are workers who either have very short hours of work or very long hours of work in China. The proportions of both groups are increasing in recent years, which negatively affects the employment quality. Based on micro-survey data, we describe the characteristics of short and long hours of work in China using numerous datasets and analyze the reasons behind these two issues. We argue that short hours of work are mainly driven by aggregate demand shortage during economic downturns. Additionally institutional redundancy is also an important contributing factor to hours of work. The reasons behind long hours of work are more complex, including competition in product markets, labor market monopsony, technological advancements, and declining labor supply. We present theoretical explanations for the polarization of work hours in recent years from the perspective of aggregate demand shortage. We also describe and analyze the phenomenon of work hours mismatch in China. Finally, we offer suggestions for improving work hours mismatch and enhancing employment quality, focusing on five areas: labor market regulations, technological advancements, demographic changes, remote work, and statistical indicators.

Key words: short hours of work; long hours of work; work hours mismatch

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Introduction

Since the economic reform in the late 1970s, the distribution of work hours among Chinese workers has gradually shown a trend of polarization. On one hand, many workers in China have very long work hours, especially in the rapidly growing non-state sector. Excessively long work hours often have negative impacts on workers' personal health and productivity, such as deteriorating health conditions (Wang & Yang, 2020; Meng & Xue, 2020; Chu, 2021), decreasing job satisfaction (Zheng et al., 2023), and increasing turnover rates (Huang et al., 2021). Furthermore, there is evidence that excessively long work hours of parents will negatively affect children's non-cognitive abilities by reducing the time of parental care (Wu et al., 2019). Netizens on social media widely use terms like 996, 007, *shechu*, and *guolaosi* to express dissatisfaction with excessive work hours¹. On the other hand, there are also workers who work very few hours in China, which is similar to those in many other countries. Many workers, especially those with low education levels and limited work experience, find it difficult to find full-time jobs. Some employees and self-employed individuals also face reduced work hours due to a lack of demand, particularly during economic downturns.

It is important to explore the causes of both long hours of work and short hours of work as both of them could impair workers' well-being and productivity. In particular, the polarization of work hours in China's labor market has intensified since 2016, with both long hours and short hours becoming more common. From international experience, short hours are often linked to economic fluctuations. When the economy is sluggish, the proportion of workers with short hours of work increases; when the economy flourishes, the proportion decreases. However, unlike in other countries, despite China's economic slowdown and increasingly challenging employment situation in recent years, the proportion of workers with long hours of work has been rising. The polarization of work hours suggests a disequilibrium between labor supply and demand in China. Moreover, the disequilibrium widens due to the lack of flexible adjustment mechanisms in the labor market.

In addition to differences in the distribution of work hours, a mismatch between actual and desired work hours (also known as work hours mismatch) is also quite common among China's working population. Work hours mismatch reduces workers' satisfaction with hours of work, and thereby, reduces job quality. However, there is little research on workers' desired hours and work hours mismatch in China. A common approach by researchers to assess the reasonableness of work hours is

1 996 literally means working from 9 a.m. to 9 p.m. for 6 days a week. 007 is an even more exaggerating phrase, meaning working 0 a.m. to 0 a.m. for 7 days a week. Both terms rhetorically describe a situation in which a person has excessively long hours of work. A *shechu*, literally a social animal, is a sarcasm mainly used by a person to mock himself as a chained animal who works very hard but without flexibility, freedom, and rights. The Chinese term, *guolaosi*, is a direct translation from the Japanese term, *Karoshi*, which means overwork to death.

to determine whether actual hours are above or below a certain threshold. For example, some studies on overwork often use working more than 50 hours per week as the standard for determining whether a worker overworks (Shi, 2019; Li et al., 2022; Lu & Wu, 2023). Some literature on underemployment or insufficient employment evaluates whether a worker works fewer than 40 hours per week to determine if they are underemployed (He, 1999; Zhu & Chen, 2021; Huang & Liu, 2024). Since these studies do not distinguish between actual and desired hours, they fail to address the deeper issue of labor resource allocation efficiency, limiting the understanding of disequilibrium in labor market supply and demand. So far, only the doctoral dissertation by Xu (2016) systematically studies the factors that contribute to work hours mismatch in China both theoretically and empirically. Xu finds that a game-theoretical model can more effectively explain work hours mismatch in China: the lower a worker's bargaining power over hours, the greater the degree of mismatch she will experience.

In our report, we combine annual summary data publicly available from the National Bureau of Statistics of China with data from the China Family Panel Studies (CFPS) to describe and analyze the distribution and causes of short hours and long hours in China from both static and dynamic perspectives. In addition, the report uses the China Employer-Employee Matched Survey (CEEMS) dataset provided by the Renmin University of China to describe and analyze the issue of work hours mismatch in China.

The rest of the report is organized as follows. Section 1 outlines the overall trends in work hours in China. Section 2 describes the distribution and analyzes the causes of short hours of work. Section 3 describes the distribution and analyzes the causes of long hours of work, and provide theoretical explanations on the polarization of work hours in recent years. Finally, the report summarizes key conclusions and discusses policy implications.

1. Trends of Work Hours in China

The average number of work hours in China is usually very high and it has been trending upwards in recent years. Figure 1 shows the time trend of the average weekly work hours and their distribution from 2004 to 2022, based on summary data provided by the China Labor Statistical Yearbook (CLSY)². Before 2016, the time trend of average weekly work hours had several turning points. However, starting in 2016, the mean weekly hours of work displays a monotonically increasing trend (i.e., a non-cyclical pattern) which cannot be easily explained by economic cycles alone due to multiple factors such as industrial upgrading, the China-U.S. trade war, and the impact of the COVID-19 pandemic. Figure 2 shows that although China's GDP growth rate has declined over years (except for 2021), the average weekly work hours have continued to rise, even during the COVID-19 pandemic, when many other countries experienced a general reduction in work hours (ILO, 2022). We also compare China's average work hours with those of three neighboring countries that have similar cultures but different income levels. Figure 3 presents the average weekly work hours in China, Japan, South Korea, and Vietnam from 2000 to 2022. In 2022, China's average weekly work hours were 48.0 hours, while the latest figures for Japan, South Korea, and Vietnam were 36.6 hours, 37.9 hours, and 41.5 hours, respectively. This indicates that China's work hours are also very high from an international perspective. Moreover, it is worth noting that, unlike the steady decline in average work hours in other countries, China's average weekly work hours have been increasing in recent years, which is related to factors such as labor market regulations and the macroeconomic conditions in China.

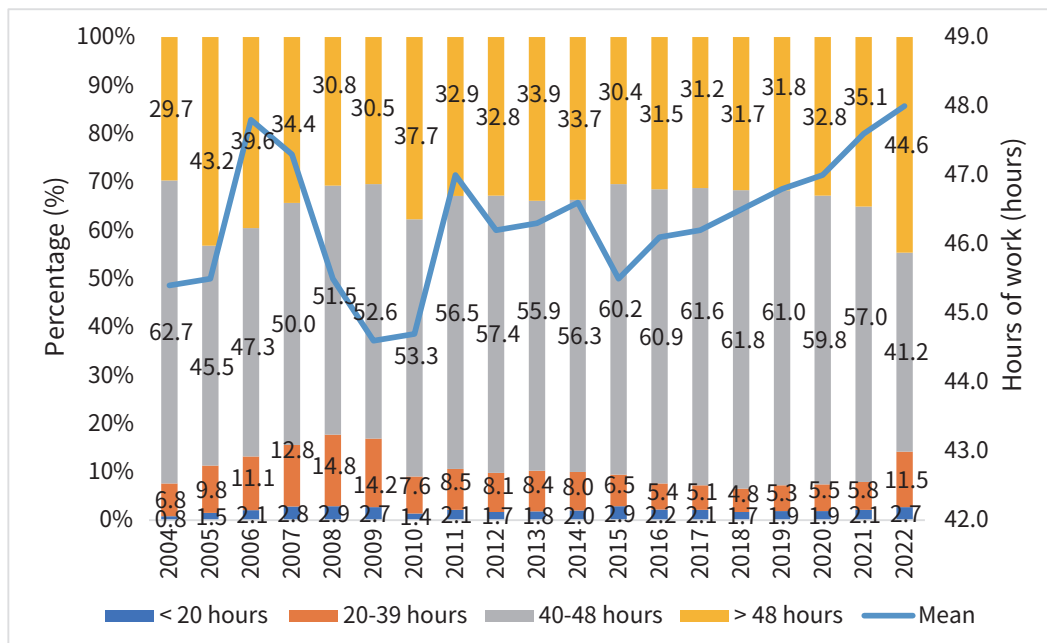


Figure 1. Hours of work of China's urban employed population: mean and distribution

2 The CLSY did not provide the distribution of work hours in the previous year until 2005. Therefore, our report only uses the data starting in 2004.

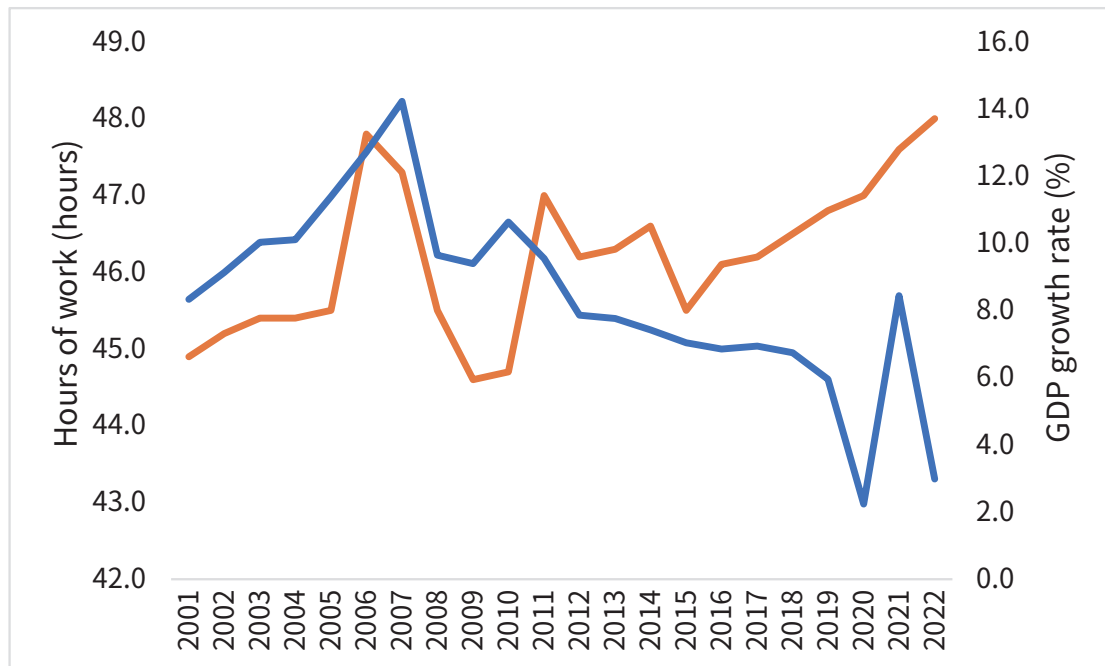


Figure 2. Average hours of work and GDP growth rate

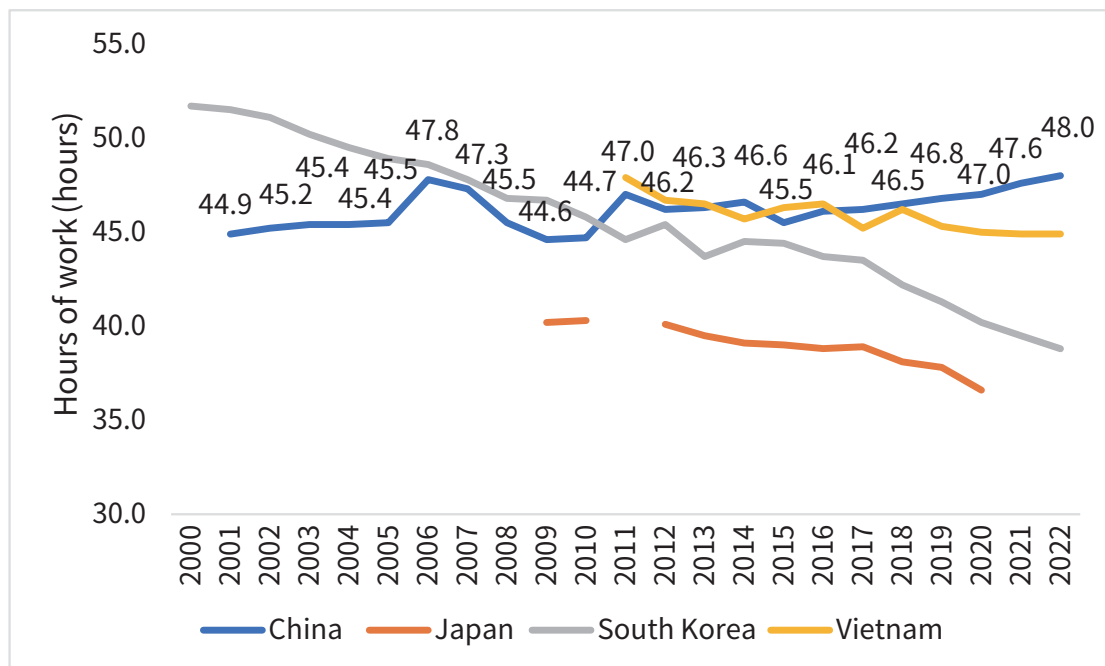
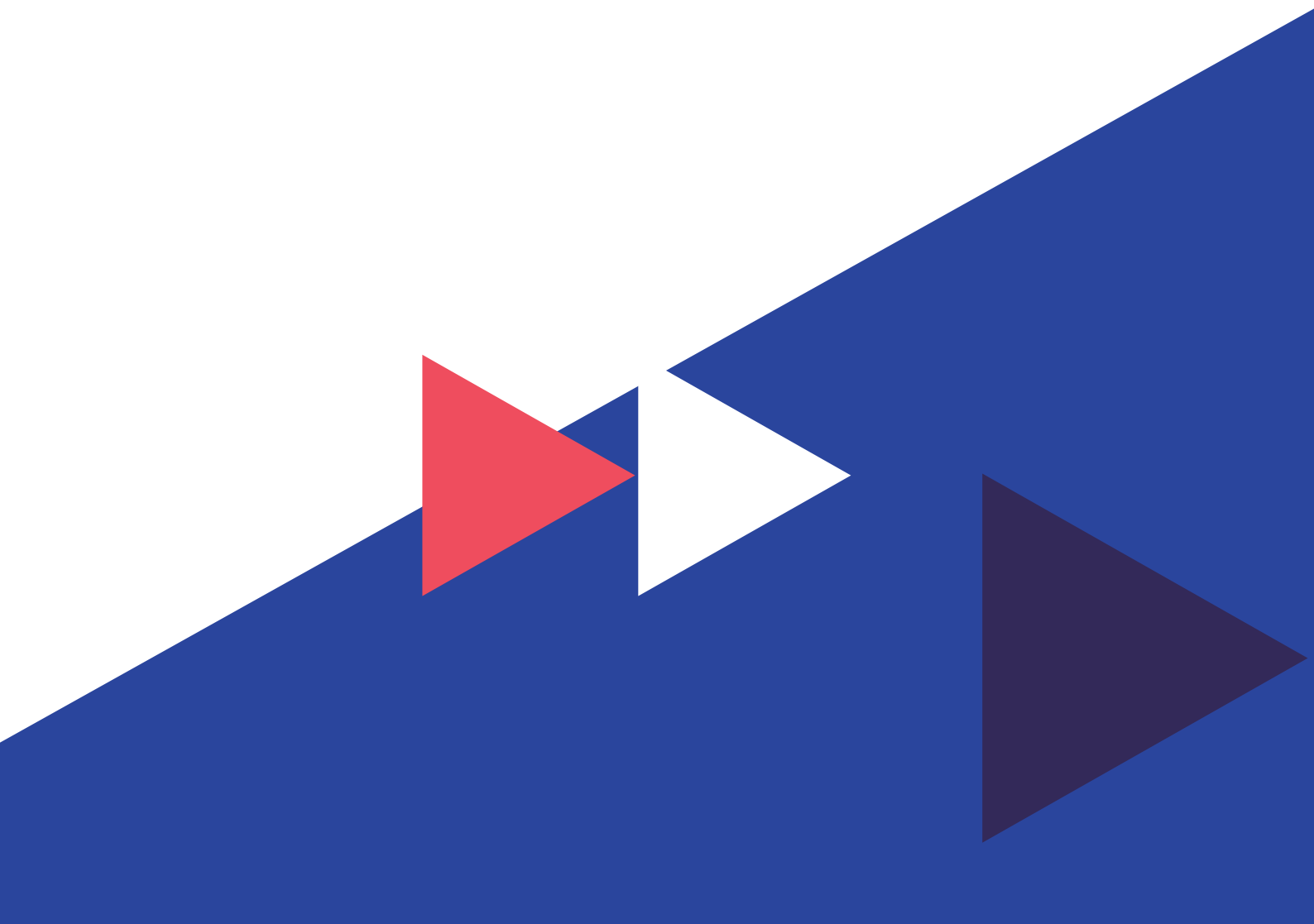


Figure 3. Average hours of work in China, Vietnam, South Korea, and Japan

The distribution of work hours in China has exhibited a polarizing trend in recent years. On one hand, the proportion of workers working long hours each week has been growing. Figure 1 shows that the percentage of individuals working more than 48 hours per week has steadily increased since 2016, which is corresponding to the rising trend in average weekly work hours during the same period. Long hours of work do not necessarily indicate high job quality. When low wages are taken into account, longer hours may actually reflect poor job quality. For example, many low-income workers may work 50 to 60 hours a week but still struggle to meet basic living needs. This suggests that these jobs often lack adequate labor protections and benefits, forcing workers to extend their hours to make up for insufficient wages. On the other hand, the proportion of people working short hours each week has also been rising. As shown in Figure 1, the percentage of individuals working fewer than 20 hours per week has increased since 2016. When the proportion of workers with very long work hours increases, the proportion of workers with very short work hours also increases. During economic downturns, many workers are unable to secure enough income as their work hours are too short. The coexistence of both short and long hours of work reveals a clear structural disequilibrium in the allocation of labor resources in China.



2. Short Hours of Work: Descriptions and Causes

► Distribution and characteristics

► The overall pattern

One form of short hours of work is part-time employment. In China, according to Article 68 of the Labor Contract Law, part-time employment refers to jobs where workers are mainly paid by the hour, and their average daily work hours with the same employer do not exceed 4 hours, with cumulative weekly work hours not exceeding 24 hours. Currently, there is no official statistical data on part-time employment in China. Internationally, part-time employment is typically measured as working fewer than 35 or 30 hours per week (ILO, 2022). Considering that the 24-hour weekly threshold is far below the average work hours in China, and most Chinese workers are not paid by the hour, following the ILO (2022) approach, we define part-time work as working fewer than 35 hours per week, which indicates short hours of work, and further define work under 20 hours per week as extremely short hours.

The issue of short work hours in China cannot be overlooked. As shown in Table 1, based the CFPS data in 2018, 9.6% of urban workers experienced short hours, including 3.9% who worked extremely short hours. Regionally, the short hours rate in the eastern region was 9.0%, slightly lower than in other areas. The variation in the rates of short hours across regions may be related to regional economic development levels. The lower rate of short hours in the eastern region may be due to the region's higher level of economic development, offering more employment opportunities, making it easier for workers to find full-time jobs, and thus reducing the prevalence of short hours compared to that in other regions. Another possible explanation is the difference in industrial structures across regions, as different industries have different working hour distributions, leading to variations in short hours across regions. Nevertheless, overall, there are no significant regional differences in the distribution of short hours of work.

Table 1. Short hours of work by region (%)

	All	East	Middle	West	North-East
< 20 hours	3.9	3.2	4.3	4.5	4.6
20-34 hours	5.6	5.7	5.4	6.0	5.3
Total	9.6	9.0	9.7	10.5	10.0

► Short hours of work by individual characteristic

From a gender perspective, women are more likely to experience short hours of work compared to men. Table 2 shows that the proportion of women with short hours is higher than that of men. Similar to many other countries, there is a gender gap in time allocation among Chinese workers. Men tend to devote more time to paid market labor, while women often spend more time on unpaid work such as household chores and caregiving (ILO, 2022; ILO, 2023). The gender difference in labor hours is consistent with the theory of allocation of time within the family in economics (Gronau, 1977). It is also closely related to traditional gender roles in China, where men are typically seen as responsible for work outside the home, while women are expected to handle various household tasks (Chen & Hu, 2021).

Table 2. Short hours of work by gender (%)

	Men	Women	Difference
< 20 hours	3.1	4.9	1.8***
20-34 hours	5.4	5.9	0.4***
Total	8.6	10.8	2.3***

Note: * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

The extent of people experiencing short hours of work also varies by age cohort. Table 3 shows a positive correlation between age and the proportion of workers experiencing short hours. The 15-29 age cohort has the lowest proportion of short hours at 7.9%. This may be because individuals in this age group are at the early stages of their careers, with lower income and savings, so they tend to work longer hours to increase their earnings, leading to a lower incidence of short work hours. In contrast, the proportion of short hours is highest among those aged 50 and above, at 13.7%. This could be due to many workers in this age group are transitioning to part-time roles as they are about to retire, or they work as part-time after retirement³. Furthermore, declining health in this age group may reduce their labor supply, contributing to a higher proportion of short hours of work.

³ Starting in January 2025, China will gradually implement a progressive delay in the retirement age. However, during the time period covered by the report's sample, the retirement age in China was 60 for men, and either 50 (for workers) or 55 (for white collars in state sector) for women.

Table 3. Short hours of work by age cohort (%)

	15-29	30-39	40-49	50 and older	Fstatistic ⁴
< 20 hours	3.3	3.2	3.6	6.0	
20-34 hours	4.6	4.9	5.8	7.7	
Total	7.9	8.1	9.4	13.7	10.5***

Note: *p ≤ 0.1; **p ≤ 0.05; ***p ≤ 0.01.

The extent of short hours of work is also related to education attainment. Table 4 shows that the higher the level of education, the lower the incidence of short hours. This may be because workers with different education levels are selected into different jobs. Individuals with higher education attainment are more likely to find jobs with formal labor contracts within firms, where work hours are relatively fixed and the likelihood of short hours is lower. In contrast, those with lower education levels are more likely to be employed in jobs, such as street vending, paid domestic work, or live streaming, with which work hours are more flexible, resulting in a higher probability of short hours of work.

Table 4. Short hours of work by education attainment

	Primary education and below (%)	Secondary education (%)	Tertiary education (%)	Fstatistic
< 20 hours	6.3	4.5	2.0	
20-34 hours	6.5	5.4	5.6	
Total	12.8	9.9	7.6	11.9***

Notes: *p ≤ 0.1; **p ≤ 0.05; ***p ≤ 0.01.

► Short hours of work by employment status

There are significant industry differences in the percentages of short hours of work⁵. Figure 4 ranks industries by the percentage of workers with short hours of hours, from highest to lowest. Industries with a higher proportion of short hours of work include *finance, neighborhood services and other service industry, cultural, physical and entertainment, and education*. On the other hand, industries with lower proportions of short hours of work include *scientific research*,

4 This is the F statistic for workers with short hours of work (working for less than 35 hours a week). Same for the rest of the section.

5 We classify the industries according to the latest classification of national economy industries (2017) by the National Bureau of Statistics of China.

technical service and geologic examination industry, information transfer, computer service and software, manufacturing, and electric undertaking, gas industry, water production and supply. The differences in the percentages of short work hours across industries are influenced by factors such as market supply and demand, job flexibility, and seasonal fluctuations. For example, the education industry generally offers more flexible work hours, leading to a higher proportion of short hours. In contrast, the manufacturing industry, with its higher aggregate demand, tends to work long hours, resulting in a lower proportion of workers with short hours of work.

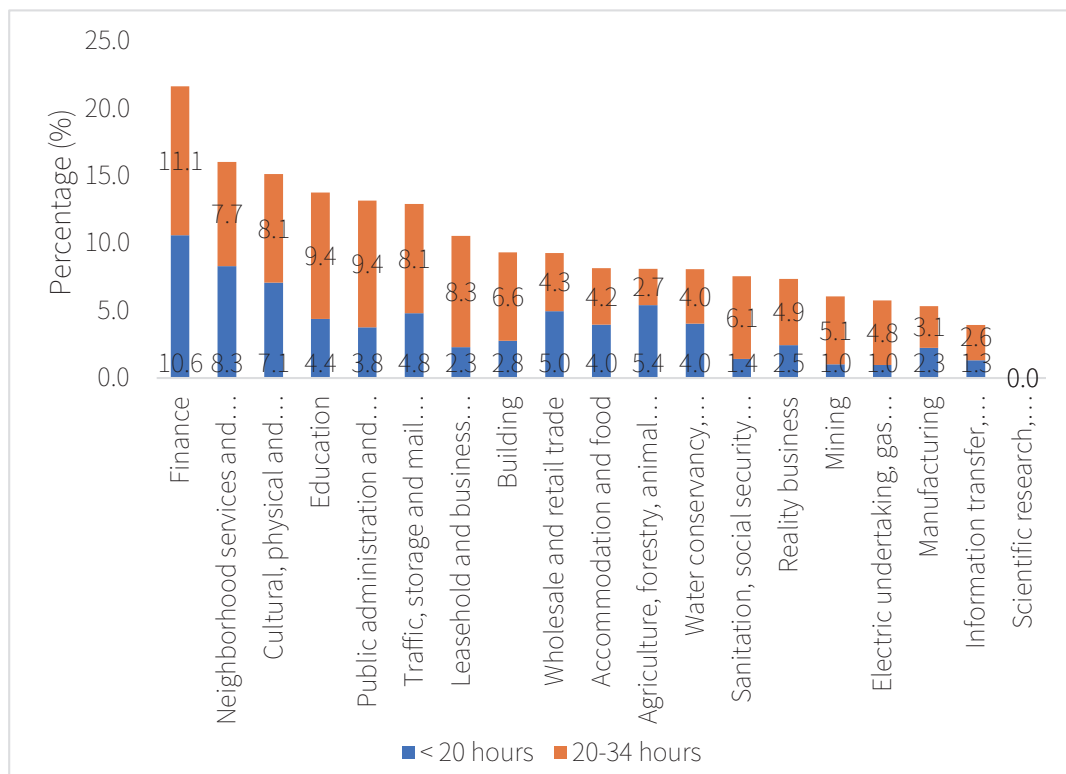


Figure 4. Short hours of work by industry

The percentage of short hours of work varies across different occupational categories⁶. Based on China's latest occupational classification, we compare five broad occupational categories. Figure 5 shows that the second broad occupational category—*professionals and technical personnel*—experiences the highest degree of short hours of work. This may be relevant to the nature of jobs, such as frequent business trips and greater flexibility in work hours. In contrast, the third category—*clerks and related personnel*—has the lowest degree of short hours of work. This could

6 According to the classification in Occupational Classification of People's Republic of China (2022), we use the first, second, third, fourth, and sixth broad occupational categories to represent the following groups: (1) *leaders of state organs, Party and mass organizations, enterprises, and institutions*, (2) *professionals and technical personnel*, (3) *clerks and related personnel*, (4) *service and support workers for social production and daily life*, and (5) *production and transportation equipment operators and related personnel*. The categories (5) *agriculture, forestry, animal husbandry, and fishery workers and assistants*, (7) *military personnel*, and (8) *other workers not easily classified* are excluded from the analysis.

be because their workplaces are more fixed, the nature of their tasks is more routine, and their work hours are relatively structured and stable.

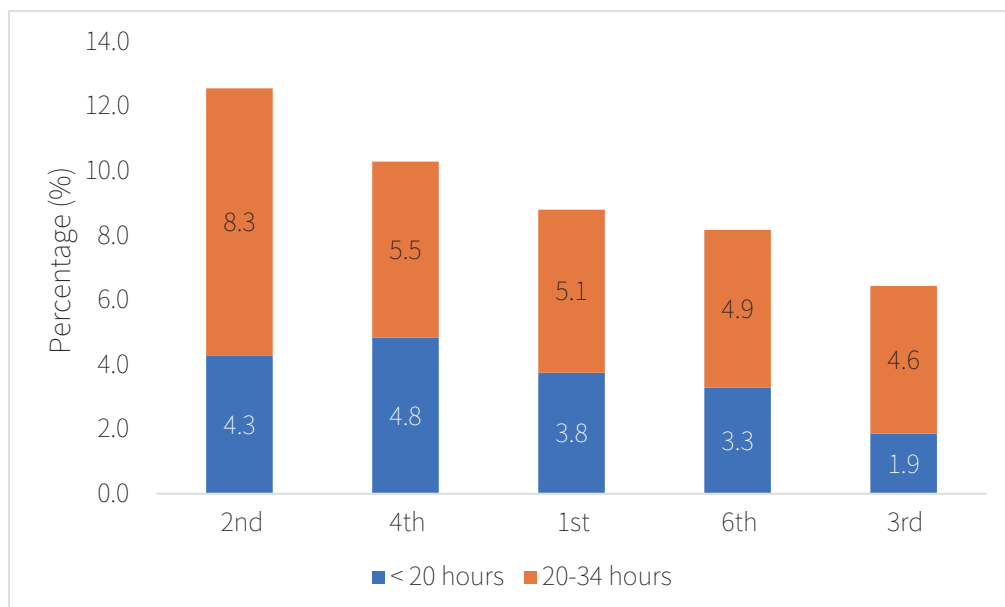


Figure 5. Short hours of work by occupation

There are significant differences in the probability of short hours of work across different income levels⁷. We use the grouping method by income quintile to group workers based on their monthly after-tax wages from the past year. These groups include the low-income group, lower-middle-income group, middle-income group, upper-middle-income group, and high-income group. As shown in Figure 6, the proportion of short hours of work is highest among the low-income group, for both men and women. This is mainly because many of these workers are employed in temporary jobs or in the informal economy, where legal protections are poor. Due to the absence of labor contracts and the high flexibility of their jobs, their work hours tend to fluctuate, leading to widespread short hours of work. Additionally, low-income earners are often in a disadvantaged position in the labor market, due to factors like a lack of necessary education and work experience, poor health, or holding a rural household registration (*hukou*). This makes it difficult for them to escape the instability of their work hours, trapping them in a vicious cycle of low income and short hours of work. In contrast, the likelihood of short hours of work is lower for the high-income group, likely because their jobs are more formal and their work hours more stable.

7 The grouping method by income quintile is a commonly used statistical approach by the National Bureau of Statistics of China. This method ranks all surveyed households in order of their per capita income, from highest to lowest, and then divides them into five equal parts. The top 20% of households in terms of income form the high-income group, followed by the upper-middle-income group, middle-income group, lower-middle-income group, and finally, the low-income group.

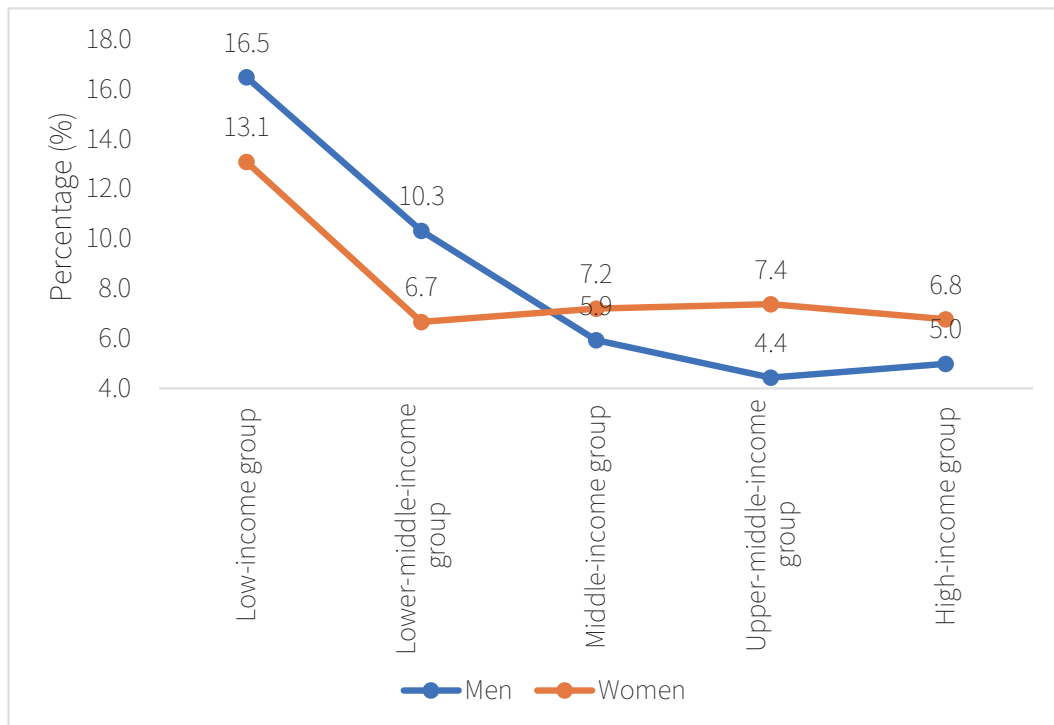


Figure 6. Short hours of work by income level

Notable differences in short hours of work exist across ownership types. Due to differences in operational goals and management models, the degree of short hours of work varies between state-owned and non-state-owned entities. Figure 7 compares the proportion of short hours of work across different types of enterprises or organizations. Compared to workers in non-state-owned entities, workers in government departments, public institutions, and state-owned enterprises (SOEs), which are all state-owned entities, experience higher levels of short hours of work. Among them, the percentage of workers with short hours of work is 12.6% and is most prominent in government departments. In contrast, the ratio of short hours of work is relatively low in non-state enterprises. Workers in enterprises of foreign/Taiwan/Hongkong/Macau ownerships are least likely to experience short hours of work, as the percentage is only 3.8%. However, self-employed workers have a relatively high rate of short hours of work, reaching 11.7%. In China's socialist market economy, whether or not to have short hours of work is not solely determined by market factors; it is also influenced by institutional factors to some extent. We will later discuss the causes of short hours of work in state-owned entities in detail.

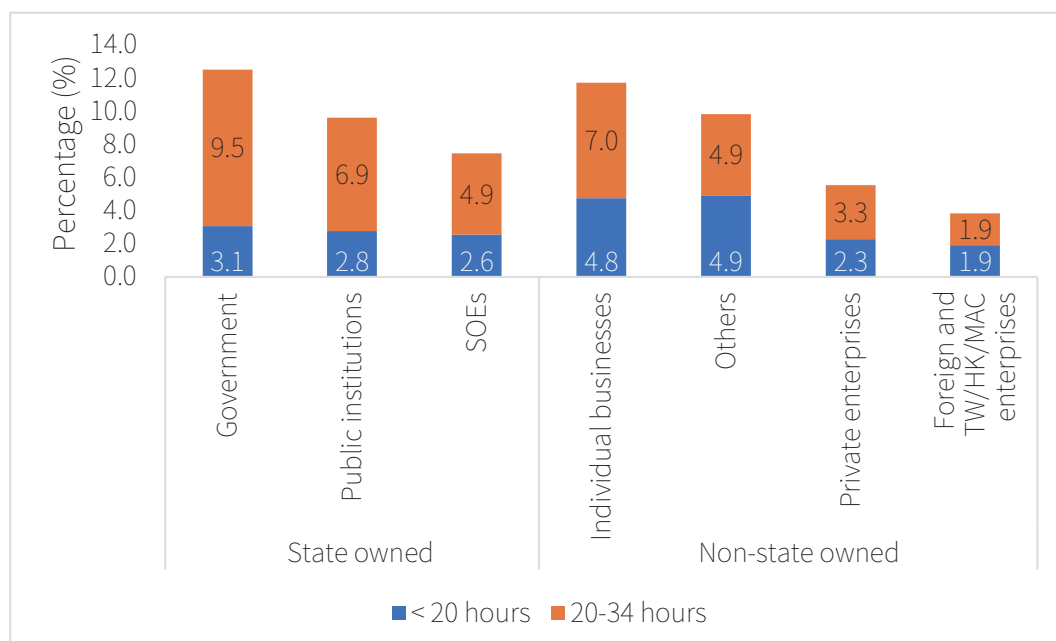


Figure 7. Short hours of work by ownership

Short hours of work are also related to the formality of employment. China's labor market can be viewed as consisting of a primary and a secondary labor market. In the primary labor market, workers typically sign formal labor contracts with their employers and have relatively complete social insurance coverage, high wages, and more standardized work hours. In the secondary labor market, workers usually have no formal labor contracts, and have relatively incomplete social insurance coverage, low wages, and less standardized work hours. This structure, known as labor market dualism (Reich et al., 1973; Dickens & Lang, 1985), creates formal and informal employment groups. Drawing on existing literature (Cai & Wang, 2004; Hussmanns, 2004; Wu & Cai, 2006; Wu, 2009; Xue et al., 2014; Chen et al., 2022) and considering data availability, we construct indicators for formal and informal employment⁸. Table 5 shows that informally employed workers are more likely to work fewer than 35 hours per week compared to formal workers, which is consistent with findings in previous literature on informal labor market and work hours (Park & Cai, 2011). From a regulatory perspective, the work hours of informally employed workers often lack the protection of formal labor contracts, making them subject to being called in or dismissed at the employer's convenience, leading to greater fluctuations in their work hours. Moreover, since many informally employed workers (such as migrant workers) are paid by hourly rate or on a daily basis, their work hours are reduced when employers face lower production demand, exacerbating the problem of short hours of work.

⁸ The detailed measurement of formal and informal employment is presented in Appendix 1.

Table 5. Short hours of work by employment formality (%)

	Formal	Informal	Difference
< 20 hours	1.7	5.5	-3.9***
20-34 hours	4.5	6.5	-2.0***
Total	6.1	12.0	-5.9***

Note: * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

► Causes of short hours of work

► Shortage in labor demand, flexibility of employment, and short hours of work

A high proportion of workers with short work hours can create multiple economic and social problems. From the perspective of resource allocation, short hours of work mean that labor resources are underutilized, which causes economic efficiency losses. Moreover, short hours of work reduce income levels, which in turn diminishes workers' well-being. The previous analysis shows that female, less educated, and informally employed workers are more prone to short hours of work. A higher proportion of workers with short hours of work can further widen the income inequality within the labor market.

Like in many other countries, in China, short hours of work are influenced by macroeconomic conditions and labor market dynamics. Domestically, as the population ages and uncertainty increases, the problem of aggregate demand shortage due to low consumption has become more severe. Internationally, as a key player in the global supply chain, China's economy and labor market are highly sensitive to changes in the global economic environment. External shocks, such as trade conflicts and the COVID-19 pandemic, have had a significant impact on export-oriented businesses, which has contributed to a decline in labor demand and a drop in hiring needs in recent years.

When labor demand is low relative to supply (i.e., a slack labor market), two situations may arise. One scenario is that when firms face insufficient workloads, due to legal or financial constraints on layoffs, they may reduce the work hours of current employees rather than firing them. However, given that average work hours remain relatively long, it is unlikely that cutting back work hours is a common practice by employers in China, especially in non-state-owned enterprises. Unlike many OECD countries that implemented "work-sharing" policies during the COVID-19 pandemic to preserve jobs by reducing average work hours (ILO, 2022), the Chinese government, while encouraging state-owned enterprises to absorb more workers and promoting flexible employment, has not introduced similar "work-sharing" measures. Therefore, the rise in the percentage of short hours of work is likely not driven by firms reducing work hours.

A more common scenario in a slack labor market is that, with fewer job openings, job seekers (including the unemployed) find it harder to secure full-time positions and instead, find temporary jobs with unstable hours or pursue self-employment. In fact, as early as the late 20th century, to alleviate high employment pressure and maintain steady economic growth, the government strongly supported and encouraged flexible work arrangements, such as part-time jobs and flexible hours (Zeng & Lu, 2006). In recent years, with the rise of new forms of employment—including platform work, remote work, temporary jobs, and the gig economy—traditional labor relations have faced new challenges (Zhang, 2016; Chen, 2024). For example, a report from Tsinghua University and ByteDance showed that in 2019, the gig economy contributed 10.43% to China's total GDP growth, and by 2035, the percentage is expected to be 13.26%⁹. As labor market slackness and new technologies drive greater flexibility in employment, work modes are becoming more flexible overall. By 2021, there were about 200 million flexible workers in China, including part-time workers and those in new forms of employment (such as ride-hailing drivers, food delivery couriers, and short-video creators), making up nearly 30% of the country's workforce¹⁰. Compared to workers under traditional employment mode, these flexible workers' hours are more vulnerable to market fluctuations, meaning the rise in flexible employment has also contributed to an increase in the proportion of workers with short hours of work.

Overall, the key driver behind short hours of work is labor market slackness, which leads to greater employment flexibility. The causes of short hours of work are multifaceted and may be linked to changes in China's industrial structure, demographic trends, and external trade conditions. Meanwhile, the development of the internet and platform technology has accelerated the shift toward more flexible employment, further increasing the prevalence of short hours of work. To address this issue and its associated challenges, the government should focus on expanding domestic demand to boost hiring, reduce reliance on flexible employment, and improve job formalization, thereby lowering the proportion of workers with short hours of work. In addition, for workers experiencing short hours of work, the government should address their income shortfall by offering tax incentives to encourage firms to create more full-time positions.

► Institutional short hours of work

Since the reform and opening-up, China's labor market has shown a clear institutional segmentation between state-owned and non-state-owned entities. State-owned entities include government agencies, public institutions, state-owned enterprises (SOEs), and other enterprises or organizations under central or local government ownership. In contrast, non-state-owned sectors consist of various non-state enterprises, private businesses, and other organizations not

⁹ For more details, please refer to the report, *The Gig Economy in the Internet Era: Development Status, Social Impact, and Policy Recommendations*, by School of Social Sciences, Tsinghua University and ByteDance in November 2020.

¹⁰ https://www.gov.cn/xinwen/2021-05/20/content_5609599.htm

owned by central or local governments. Compared to the non-state sector, where decisions on hiring, firing, and wages are heavily influenced by market supply and demand, the state-owned sector still keeps characteristics of the planned economy in its management and employment decisions, in which case profit maximization is not the only goal for state-owned entities (Jefferson & Rawski, 1992; Lai, 1996; Dong & Putterman, 2003; Ma, 2018).

As mentioned in the first part of this section, the reasons behind short hours of work differ between state-owned and non-state-owned entities due to China's institutional segmentation. In non-state-owned entities, short hours of work are largely determined by market supply and demand. However, reasons for short hours of work in state-owned entities are more complicated. Other than market factors, short hours work in state-owned entities are affected by their management modes and operation goals.

One reason for short hours of work in state-owned entities is the rigidity of *bianzhi system*, leading to overstaffing, particularly in government departments and public institutions. The *bianzhi system* in state-owned entities originates from the planned economy period, where personnel allocation and management were based on the nature of the position. Due to the job security associated with these positions, known as the *iron rice bowl*, it is difficult for state-owned entities—especially government departments and public institutions—to reduce the number of *bianzhis*. As a result, some state-owned entities have resorted to reducing work hours, exacerbating the problem of short hours of work. In 2023-2024, we conducted a survey on the work hours and workload of administrative staff at a public university in central China. This university has maintained its regular work hours of six hours per day and five days per week for many years. Despite occasional overtime, the average weekly hours of work of administrative staff at this university are still significantly below the national average. Even under this schedule with relatively short work hours, 17% of staff members in ten non-teaching departments reported having an insufficient workload. Further investigation revealed overlapping job functions, a mismatch between workers and job roles, and unreasonable compensation design at the university, all contributing to short hours of work. This illustrates that the problem of short hours of work in state-owned entities is, to some extent, a result of inefficient management. Compared to developed countries that have experienced scientific management (or Taylorism), China's greatest challenge regarding work hours is the poor performance of human resource management, leading to low utilization of work hours and labor productivity. This issue is particularly prominent in government departments, public institutions, and some state-owned enterprises, where scientific human resource management systems have not yet been established (Zeng, 2018).

Additionally, short hours of work in semi-profit-oriented state-owned enterprises, such as SOEs, are influenced by both market conditions and employment pressure, leading to higher levels of short hours of work compared to other types of enterprises. Since the economic reform, SOEs have been partially involved in market competition while also bearing the responsibility of maintaining employment. As a result, short hours of work in SOEs are affected by both weak

market demand and employment pressure. On one hand, under the dual-track price system, SOEs complete planned production tasks at fixed prices under the planned economy and then compete at market prices for additional profits. This means that once SOEs meet the state's production targets, they can adjust their output based on market demand. Therefore, work hours in SOEs are somewhat determined by market supply and demand: when demand is high (or low), work hours increase (or decrease). During the early stages of economic reform, short hours of work in SOEs (and other enterprises) were a result of material shortages and weak market demand. On the other hand, during the early stage of the reform, with large numbers of rural laborers moving to cities and the privatization of state-owned entities, urban unemployment surged. To fight against the rising unemployment rate, governments at all levels used incentives such as mandatory hiring requirements and funding support to encourage SOEs to hire more people, leading to overstaffing while severely restricting layoffs (Huang, 1985; Jefferson & Rawski, 1992; Wang, 1996). The government also provided SOEs with sufficiently large amount of financial aid such that they would not fail, which is known as the soft budget constraint (Kornai, 1986; Lin & Tan, 1999). Thus, in the early stages of the reform and opening-up, driven by both insufficient demand and the need to maintain employment levels, SOEs experienced high levels of short hours of work. Jefferson and Xu (1991) conducted a study in 1988 on 20 industrial enterprises in Wuhan, Hubei Province, including 13 SOEs and 7 collective enterprises, and found that SOE workers averaged only 5.4 hours of work per day, compared to 5.9 hours in collective enterprises, both well below the standard 8-hour workday. Over the next thirty years, as SOEs had experienced privatization, scaling, corporatization, and mixed ownership reforms (Song, 2018), although the problem of short hours of work is alleviated, it still persisted. Work hours of SOE workers are still influenced by government employment mandates. As a result, short hours of work still exist in SOEs.

In summary, short hours of work in state-owned entities are influenced not only by operational performance and market supply and demand, but also by institutional factors. While state-owned entities strive for employment stability and bear social responsibilities, outdated management practices and incomplete market reforms have contributed to the widespread phenomenon of short hours of work.

3. Long Hours of Work: Descriptions, Causes, and the Paradox

► Distribution and characteristics

► The overall pattern

Article 36 of Section 4 of the Labor Law of the People's Republic of China, passed in July 1994, states that "the country implements a work hour system in which employees should not work more than eight hours per day and an average of no more than 44 hours per week". In March 1995, the State Council of China mandated that employees should not work more than 8 hours per day and no more than 40 hours per week. Currently, these two different regulations coexist in China. However, in practice, employers across various sectors in China generally do not strictly enforce these rules, and overtime and long hours of work are widespread.

Following the International Labour Organization's metrics (ILO, 2022), we define long hours of work as working more than 48 hours per week. Overall, it is common for workers to have long hours of work in China. Based on the 2018 CFPS data, Table 6 shows the prevalence of long hours of work in China. More than 50% of the urban workforce works longer than 48 hours per week. Geographically, the eastern region has a lower rate of long hours of work at 46.1%, compared to other regions. This could be because the labor market in the eastern China is generally more regulated, making long hours of work less prevalent than in other areas. However, in general, long work hours are widespread in China, negatively impacting workers' physical and mental health as well as job quality.

Table 6. Long hours of work by region

	All	East	Middle	West	North-East
> 48 hours	50.2	46.1	54.3	52.9	52.2

► Long hours of work by individual characteristic

When looking at the data by gender, we find that men are more likely to experience overwork than women. Table 7 shows that 55.1% of men have long hours of work, compared to 44.1% of women. As mentioned in Section 2, due to differences in social and family role expectations, men tend to spend more time on market work, while women tend to allocate more time to caregiving and household work.

Table 7. Long hours of work by gender (%)

	Men	Women	Difference
> 48 hours	55.1	44.1	10.9***

Note: * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Long hours of work are associated with age cohorts to some extent. Table 8 shows that the workers aged 40-49 has the highest proportion of long hours of work, while the proportion is lowest for those aged 15-29. The variations across age groups may be related to differences in employment types (full-time/part-time, industries, occupational categories, etc.) and labor supply preferences among different age cohorts. For instance, individuals aged 40 to 49, due to their extensive work experience, often take on more demanding tasks. Additionally, the pressures of childcare and eldercare contribute to a relatively higher proportion of long hours of work in this group. In contrast, among those aged 15-29, many are students who have part-time jobs during their spare time, resulting in a relatively lower proportion of long hours of work. However, overall, the disparity in long hours of work across age cohorts is not significant.

Table 8. Long hours of work by age cohort

	15-29 (%)	30-39 (%)	40-49 (%)	50 and older (%)	F statistic
> 48 hours	48.8	49.1	53.1	50.1	0.76

note: * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Long hours of work are also related to education attainment. Table 9 shows that the higher the level of education, the lower the probability of long hours of work. This is probably because people with different education levels are selected to different jobs that have different work hours. Similar to the issue of short hours of work, workers with higher education levels are more likely to be employed in jobs with formal labor contracts within firms, where work hours are relatively fixed and the probability of working excessively long hours is lower. On the other hand, those with lower education levels are more likely to be employed in jobs that have unstable income and fluctuating work hours, which result in higher probability of having long hours of work.

Table 9. Long hours of work by education attainment

	Primary education and below (%)	Secondary education (%)	Tertiary education (%)	F statistic
> 48 hours	69.2	57.3	29.4	343.13***

Note: * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

In addition, China has a unique hukou system (household registration system), which also affects the distribution of long hours of work. The modern hukou system began in the 1950s, classifying Chinese citizens into two types: agricultural hukou and non-agricultural hukou. Although several rounds of reforms have made urban and cross-regional mobility policies more relaxed compared to the planned economy period, differences in labor market outcomes based on hukou type still exist (Meng, 2012; Song, 2014). Table 10 shows that the probability of long hours of work is significantly higher for those with agricultural hukou compared to those with non-agricultural hukou. The difference could be attributed to selection into industries and occupations by different workers. Many workers with agricultural hukou (such as migrant workers) are concentrated in physically demanding industries and occupations, which tend to have longer work hours.

Table 10. Long hours of work by hukou type (%)

	Agricultural	Non-agricultural	Difference
> 48 hours	61.9	37.9	24.1***

Note: * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

► Long hours of work by employment status

The issue of long hours of work is also prominent in many industries. Figure 8 shows that workers in industries such as *accommodation and food services*, *construction*, and *mining* are more exposed to long work hours, with the *accommodation and food services* industry having the highest proportion, at 72.9%. Industries more exposed to long hours of work are mostly labor-intensive industries with intense competition. For example, the *accommodation and food services* industry is densely populated with businesses, leading to fierce competition, which pushes firms to secure profits by having employees work overtime, resulting in a high incidence of long work hours. Similarly, due to high domestic and international demand for Chinese products, together with competitive pressures from other countries, China's manufacturing industry has tremendously high production demand. Many manufacturing firms adopt shift work schedules, leading to longer overall work hours and a common occurrence of long hours of work. In contrast, industries such as *public administration and social organizations*, *finance*, and *education* have relatively lower levels of long hours of work. This may be because many firms and organizations in these sectors are state-owned, with less competition and more fixed work hours for employees¹¹. Additionally, the level of formality in employment within different industries also impacts long hours of work, which will be discussed later in the report.

11 In many countries, workers in the finance industry usually have much longer hours of work than in other industries. In China, we have interviewed many employees and human resource managers in the finance industry and they told us that long hours of work are usual in finance. However, not only the CFPS data, but also data from the China Labor Statistical Yearbook (CLSY) also show that workers in the finance industry have much shorter hours of work than in many other industries. According to the CLSY, in 2019, the average weekly hours in the finance industry are 42.8, while the average number for the whole nation is 46.8. The discrepancy between our real-life experience and data needs to be entangled in the future.

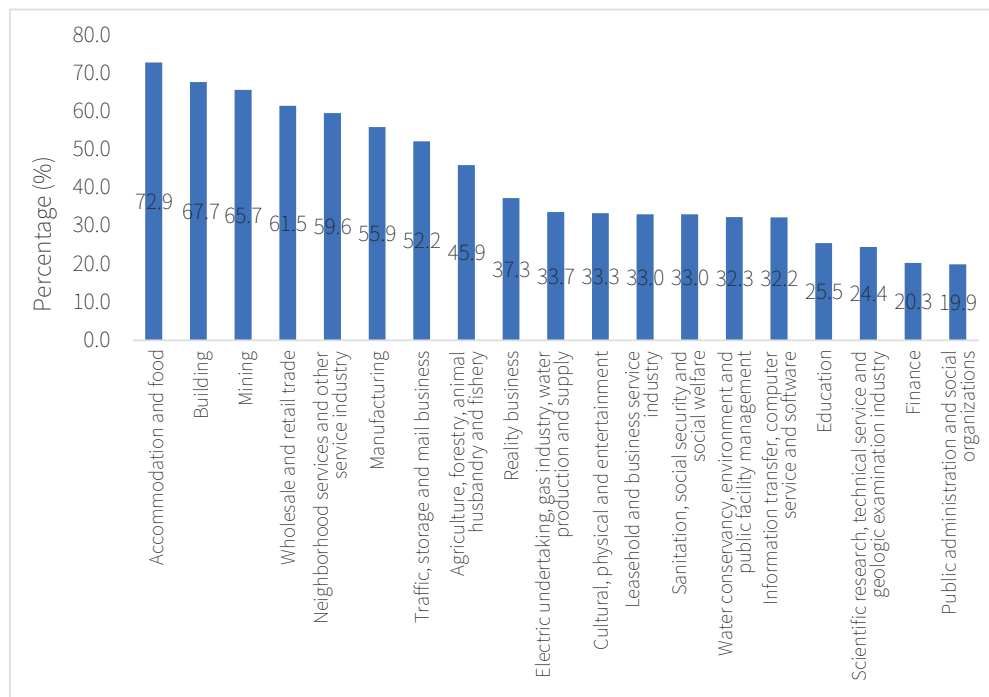


Figure 8. Long hours of work by industry

The proportion of long hours of work also varies across occupations. Figure 9 shows that the 6th major occupational category (*production and transportation equipment operators and related personnel*), has the highest proportion of long work hours. This may be related to the nature of their work, such as frequent travel and a higher degree of flexibility in their work schedules. On the other hand, the second major occupational group, which includes *professionals and technical personnel*, has the lowest incidence of long hours of work. This could be because workers of this occupational category have higher skill levels that give them stronger bargaining power, allowing them to sign formal employment contracts with employers and have stable work hour, which therefore reduces the probability of having long hours of work.

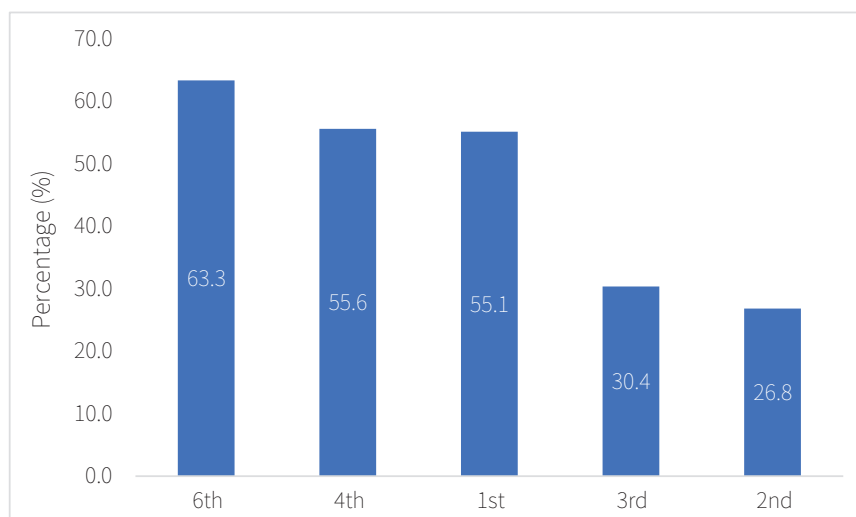


Figure 9. Long hours of work by occupation

There is also a strong correlation between long hours of work and income levels. We still follow the grouping method by income quintile to compare the proportion of long work hours across different income groups. Overall, there is an inverse relationship between the probability of long hours of work and income. In terms of job composition, lower-income groups often work in less stable jobs, many of which lack formal labor contracts that regulate work hours, which leads to longer work hours. On the labor supply, since hourly wages are relatively low, lower-income workers are often compelled—either voluntarily or involuntarily—to work longer hours to increase their earnings, resulting in long hours of work. In contrast, higher-income groups tend to experience fewer long hours. This is partly because their jobs are generally more decent, with better work-life balance. Furthermore, for some high-income individuals, the additional utility gained from extra leisure time outweighs the utility of extra income, reducing their willingness to supply more labor. Moreover, as income rises, the gender gap in work hours widens as men are more likely to have long hours of work.

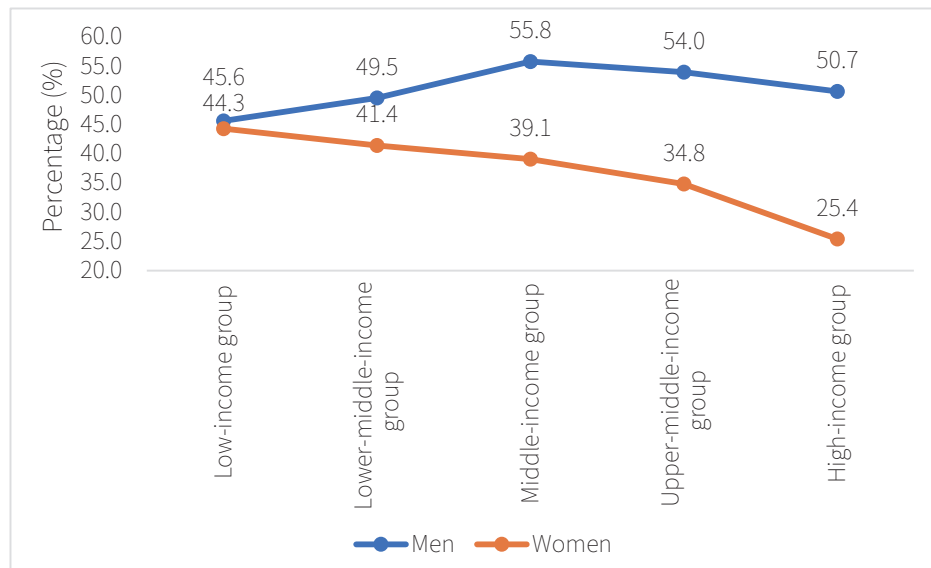


Figure 10. Long hours of work by income level

Similar to the issue of short hours of work, the extent of long hours of work varies across firms with different ownerships. Figure 11 compares the proportion of long work hours in enterprises or organizations with different ownership types. Overall, non-state-owned sectors show significantly higher levels of long hours of work compared to state-owned units. The reasons behind this are complex. From the perspective of marketization, non-state-owned sectors are more market-driven, and their employment decisions are highly influenced by market supply and demand. Additionally, the legal limits on weekly work hours, as outlined in the Labor Law, are not strictly enforced, making long hours more common in non-state units (Cao & Rubin, 2014). Among these, the proportion of long hours of work is highest for self-employed businesses, reaching 65.1%. This is likely due to the higher survival pressure faced by the self-employed compared to regular enterprises, along with less formalized and standardized management practices, making it more common for employers to require excessive overtime from employees. In contrast, state-owned

sectors are less exposed to long work hours, partly because they are less market-driven and, due to institutional factors and social responsibilities, often have surplus staffing. Within state-owned sectors, as shown in Table 6, workers without a *bianzhi* (a permanent position) experience longer work hours compared to permanent employees, which also helps explain why the permanent positions (often referred to as the *iron rice bowl*) are so attractive to job seekers due to their better work-life balance.

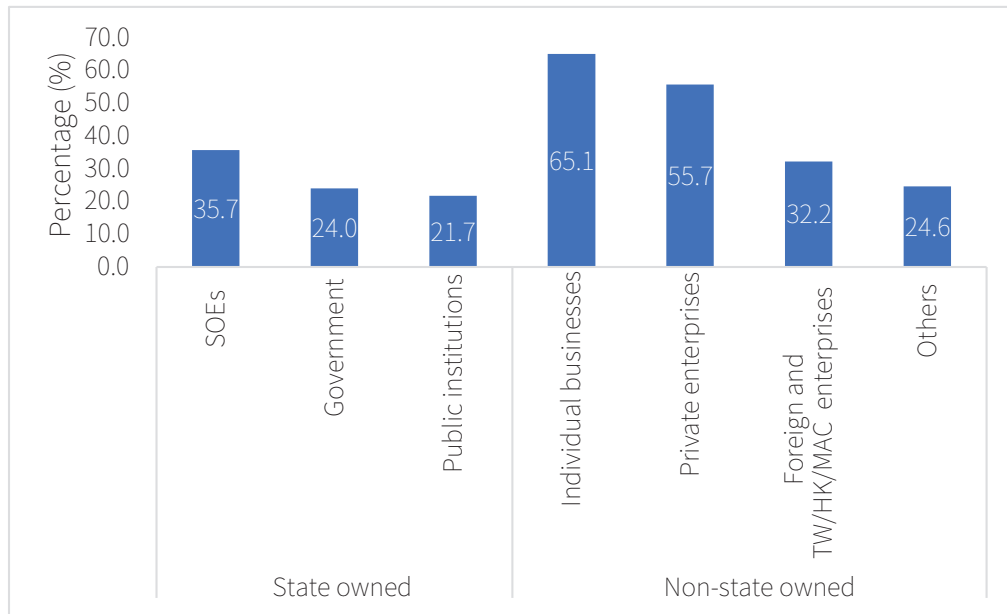


Figure 11. Long hours of work by ownership

Table 11. Long hours of work by *bianzhi* in the state-owned sector (%)

	With a <i>bianzhi</i>	Without a <i>bianzhi</i>	Difference
Government	24.8	22.6	2.1
Public institutions	18.8	26.6	-7.8***
SOEs	29.0	43.2	-14.2***

Note: * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Lastly, long hours of work are also influenced by the formality of employment. In our sample, 33.8% of formal workers experienced long hours of work, compared to 60.6% of informal workers. This disparity can be explained by industrial characteristics. A large number of informal workers are concentrated in labor-intensive industries, working in jobs that require low skills, offer low wages, and have long work hours, such as *accommodation and food, construction, and manufacturing*. The proportion of informal employment in these industries is extremely high. Figure 12 depicts the relationship between the proportion of workers with long hours of work and the proportion of informal employment across industries (excluding *agriculture, forestry, animal*

husbandry, and fishery). We find a strong positive correlation between these two variables, with a correlation coefficient of 0.77. In addition, due to the income instability and low social insurance coverage among informal workers, many are forced to extend their work hours to compensate for current and future income shortfalls. A study on migrant workers found that one of the key reasons for their excessive work hours is the low level of retirement benefits and unstable income expectations (Lu & Wu, 2023) ¹².

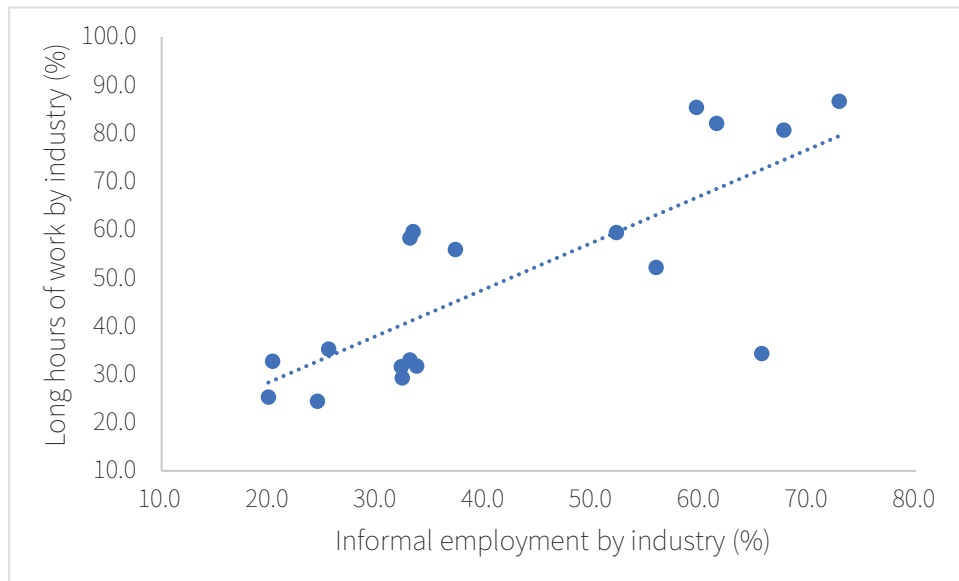


Figure 12. Long hours of work by employment formality across industries

► Causes of long hours of work

► Market competition

Long hours of work are related to the intensity of market competition. When a market is highly competitive, a single firm becomes a price taker and can only set prices close to its marginal output, which aligns with the economic definition of a perfectly competitive market. This means that in highly competitive markets, it is difficult for firms to make significant profits. While real-world markets differ from the theoretical concept of perfect competition, the underlying logic is the same: as market competition intensifies, firms struggle to set prices much higher than their production costs. Therefore, in an effort to increase profits, many firms find ways to reduce production costs, including extending work hours to lower the per-unit labor cost (Chen, 2022).

With the establishment of market mechanisms and China's entry into the WTO, the country's marketization has steadily increased over years. Benefiting from low labor costs and a well-

¹² Many migrant workers work in informal economy without signing a labor contract with employers and have very limited social insurance coverage. They can be considered as informally employed.

developed industrial system, China quickly became the "world factory", and "made in China" became a hallmark of a particular era. During this process, both domestic and international demand surged, leading to rapid economic growth in China. Before the 2008 financial crisis, GDP grew at an annual rate of over 10%. Even after GDP growth slowed after 2010, China's economic growth rate was still higher than that of most other countries.

However, behind this rapid development is the widespread issue of long hours of work across various industries, as discussed in the descriptive analysis of this section. The situation is closely tied to China's position in the global industrial chain. For a long time, China have positioned itself in the lower and middle tiers of the industrial chain. Most Chinese firms are not engaged in high-skill, high-value-added research, development, or services, but rather in low-skill, low-value-added manufacturing and service industries. This results in relatively low profit margins for most firms. In addition, due to the large size of China's domestic market and the tremendous number of firms, many industries operate in a status of intense competition, creating immense survival pressure. Under such circumstances, many firms arrive at a Nash equilibrium by adopting strategies to reduce costs and increase efficiency to improve their chances of survival and profitability. One method of cost reduction is to extend work hours, which effectively lowers the hourly wage rate and reduces marginal labor costs. As competitive pressure increases, firms are more motivated to extend work hours to save labor costs and enhance their competitiveness.

► Labor market monopsony

Does market competition always lead to long hours of work? Theoretically, if workers have strong wage bargaining power, they could ask for shorter work hours without sacrificing their wage rate. In this case, increased market competition would only extend work hours within a certain range, and long hours wouldn't become a widespread issue. On the other hand, if there exists a high degree of monopsony in the labor market where employers can suppress wages below the marginal product of labor, employers can indirectly lower the hourly wage rate by extending work hours. In China, employers tend to have stronger bargaining power than employees. Some researchers have measured the degree of monopsony in China's labor market and found that it has reduced the labor share of income by 11%, indicating weak bargaining power among Chinese workers (Brooks et al., 2021). Therefore, as market competition intensifies and firms face greater survival pressures, firms are motivated and able to increase work hours, often without paying overtime as required by the Labor Law. At the same time, employees, in their effort to earn more and simply keep their jobs, are forced to accept longer hours.

Institutionally, one reason for China's high degree of monopsony could be the lack of an effective collective bargaining mechanism. In most developed countries, a well-established trade union system effectively protects workers' rights. These unions provide workers with a platform to advocate for their interests and engage in collective bargaining with employers. For work hours, unions in these countries have actively pushed for shorter workweeks and work hours without reducing wages (Earle & Pencavel, 1990; Trejo, 1993; Blanchflower et al., 2024). A couple of developed countries, including Ireland, the Netherlands, the UK, and Belgium, have experimented

with a four-day workweek, and some have even enacted laws regarding this shorter work schedule¹³. These countries often have strong unions capable of organizing workers for collective bargaining and even strikes. In contrast, China's Constitution, revised in 1982, removed the clause granting freedom to strike. In terms of union management, all unions must operate under the state-controlled All-China Federation of Trade Unions (ACFTU). In fact, there do exist strikes or workers' collective bargaining efforts in China. The China Labour Bulletin (CLB), in collaboration with non-governmental organizations, has documented over 100 cases of collective bargaining¹⁴. However, around 80% of these cases involved disputes over unpaid wages rather than efforts to secure better working conditions, such as higher wages or shorter work hours.

Moreover, China's underdeveloped social insurance system has contributed to the monopsony power of employers as well. With low coverage and small payouts, many workers, especially those with lower accumulation of human capital, are deeply concerned about the consequences of being unemployed and feel compelled to tolerate low wages and long work hours. When bargaining with employers, these workers are often in a weak position. For example, many workers lack pension or health insurance, and these groups experience a high incidence of long hours of work. According to CFPS data in 2018, the probability of working more than 48 hours a week was about 59% among workers without any pension and health insurance.

► Technology advancements of the internet

In 1930, British economist John Maynard Keynes, in his essay *Economic Possibilities for Our Grandchildren*, predicted that thanks to improvements in living standards brought about by technological advancements, workers in 2030 would only need to work 15 hours a week (Keynes, 1930). Although today's average weekly work hours in most countries are still far longer than Keynes' prediction, many countries have seen a downward trend in work hours over the past few decades. This suggests that technological progress can influence the demand for work hours in production. However, despite significant technological advancements in China since the economic reforms, the average work hours have actually increased, in contrast to the trends observed in many other countries, as depicted in Figures 1 and 3.

One key feature of 21st-century technological advancements has been the rapid development of the internet. The widespread adoption of the internet, along with the recent acceleration of artificial intelligence, has not only changed how people work but also influenced employers' decisions of allocation of labor resources. Technologies such as computers, telecommunications systems, and robotics have reduced dependence on labor while increasing productivity Chen, 2022. However, the broad use of information and communication technologies across industries has intensified time-based competition, which accelerates work progress and increases workloads. For example, in the internet industry, where rapid growth has given rise to many large

13 CNBC (2023, April 14). Countries that are embracing or experimenting with a 4-day workweek. Retrieved from <https://www.cnbc.com/2023/04/14/countries-that-are-embracing-or-experimenting-with-a-4-day-workweek.html>

14 <https://clb.org.hk/en/content/workers%E2%80%99-rights-and-labour-relations-china>

firms, fierce competition has resulted in significant pressure on firms. Characteristics like low entry barriers and a winner-takes-all market structure (Zheng et al., 2021) have forced firms to transfer some of that pressure onto workers through long work hours. Internally, many managers emphasize performance distribution and adopt "rank-and-yank" policies, pushing employees to work overtime. In addition to regular employees, workers who are dependent on these internet firms but are not directly employed by them (mostly informal workers) also face the problem of long work hours. For instance, due to difficulties in finding jobs, many people work as platform-based delivery drivers (such as for Meituan, a large Chinese shopping platform). These drivers are not formal employees but have labor outsourcing arrangements with the platform firms. They have poor social insurance coverage, low wages, and face penalties for late deliveries, meaning that to earn more, they have to extend their work hours.

Furthermore, from a technological perspective, the rise of remote communication and telework technologies has created conditions where employers and employees can be in contact at any time and place, blurring the boundaries between work and personal life and, to some extent, undermining work-life balance. Telework, for example, allows workers to perform their job duties outside of a traditional office setting (often from home) using internet technologies. Although it is not yet the dominant work mode, telework has been widely implemented in many countries. A study on telework usage in Europe shows that in 2019, more than 30% of the employed population in high-income countries like Sweden, the Netherlands, and Luxembourg had experienced telework (Milasi et al., 2021). While there is no official data on telework frequency in China, some survey reports suggest that telework has indeed extended work hours to varying degrees. A survey in 2022 by 51job, China's largest job recruitment website, found that 65.8% of respondents reported longer work hours when teleworking, with 26.9% saying that their average daily work hours had increased by 1 to 2 hours¹⁵.

► The decline of labor supply

The above discussion focuses on the labor market from the demand side. On the supply side, China has been experiencing the labor shortage in recent years due to factors such as the one-child policy, population aging, and the expansion of higher education enrollment (Knight et al., 2011; Knight et al., 2017; Cui et al., 2018; Zhang et al., 2024). According to data from the National Bureau of Statistics (Figure 14), China's total labor force (including both employed and unemployed individuals) peaked in 2015, surpassing 800 million people, before declining for the first time. While the labor force saw a slight rebound in 2019, the overall trend has been downward sloping. The most direct consequence of a shrinking labor force is labor shortage, in which some employers struggle to hire enough workers to meet their operational needs. In addition to the overall reduction in the labor supply, China also faces structural disequilibrium in its labor market. Due to the mismatch between workers' skills and employers' needs (Jiang & Guo, 2022; Sun et al., 2023), and because the reservation wages of job seekers exceed the maximum wages that firms are able to offer (Po, 2011), employers often find it difficult to recruit

15 <https://caijing.chinadaily.com.cn/a/202204/25/WS6266593fa3101c3ee7ad25c2.html>

workers even when unemployment rates are high. These structural challenges further exacerbate the problem of labor shortage.

Does labor shortage cause long hours of work? Figure 13 shows that there was no clear relationship between the size of the labor force and average work hours before 2016¹⁶. However, starting in 2016, as the labor force began to decline, work hours steadily increased. In his study on absenteeism and overtime, Ehrenberg (1970) proves that when a company experiences a certain level of absenteeism, the optimal response is to extend the work hours of current employees rather than hire additional workers. Moreover, when absenteeism is predictable, firms are more likely to use longer work hours to compensate for the labor shortage, compared to when absenteeism is random. Similarly, labor shortages reflect insufficient labor supply, so Ehrenberg's theory may also help explain how a shrinking labor force leads to longer work hours. In the short term, as labor supply decreases and recruitment costs rise, firms may find it more optimal to extend the work hours of current employees rather than hire more workers. Additionally, many firms are aware of and can predict the recruitment challenges caused by labor shortages, so they may prefer to increase the average work hours of their employees rather than expand their workforce.

However, it remains unclear whether this negative relationship is merely coincidental or if labor shortages are directly causing longer work hours. Additionally, in the long run, will labor demand adjust to factors like population aging and reach a new equilibrium in the labor market? Will work hours continue to increase under such conditions? These are questions that future research can explore further.

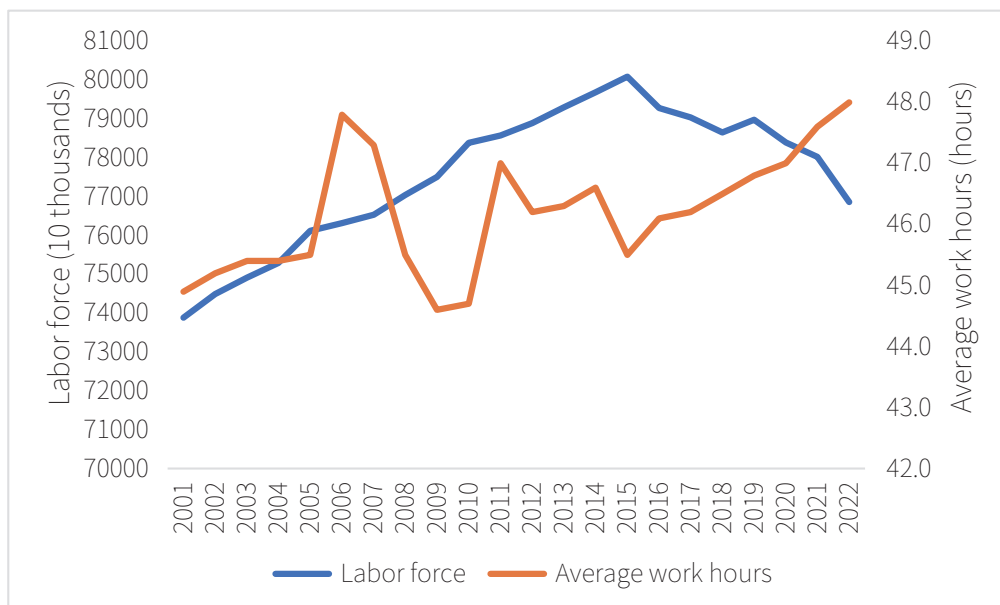


Figure 13. Labor force and average work hours

16 The statistics on labor force is from the website of National Bureau of Statistics. See <https://data.stats.gov.cn/easyquery.htm?cn=C01>

► Work hours paradox in the context of aggregate demand shock

In recent years, China's economy has been plagued by uncertainty due to various domestic and international factors. On one hand, the COVID-19 pandemic has caused an increase in uncertainty, leading to a decline in consumer willingness to consume, which has yet to recover to pre-pandemic levels. On the other hand, growing uncertainty for businesses and rising labor costs have led to a continuous reduction in hiring, worsening the unemployment issue. For instance, the 2019 reform of the social insurance collection system placed unprecedented pressure on small and micro enterprises¹⁷. These businesses, which often engage in selective insurance participation, low-base contributions, and even tax evasion or arrears, feared that the strong capabilities of tax authorities to supervise and collect taxes would threaten their survival (Yang & Cheng, 2019). On the labor supply side, due to the aging population, aggregate demand is also declining. These factors combined have led to a shortfall in aggregate demand.

In the context of insufficient labor market demand, work hours are more polarized. Figure 1 shows that since 2018, the proportions of workers with very short weekly work hours (less than 20 hours per week) and those with very long weekly work hours (more than 48 hours per week) both have been increasing. Internationally, when economic downturns lead to insufficient labor market demand, more people tend to face reduced work hours, resulting in an increase in the number of people experiencing time-related underemployment (ILO, 2022). For example, following the 2008-2009 financial crisis and the outbreak of COVID-19 in 2020, many countries had problems of short hours of work. However, despite China's recent economic slowdown, worsening employment conditions, and particularly high youth unemployment rates, the average work hours in China have not decreased; instead, they are in an upward trend. To the best of our knowledge, there has not been any research on the causes of this paradox. Our report attempts to provide a preliminary analysis of this paradox by examining changes in aggregate demand alongside the unique characteristics of China's labor market.

As analyzed in Section 2, a lack of aggregate demand tends to increase the prevalence of short hours of work. On the demand side, when aggregate demand declines, the demand for goods and services decrease as well. Firms reduce hiring of formal workers (such as those with long-term contracts) and instead, prefer to use temporary and part-time workers. On the supply side, reduced hiring by firms makes it harder for individuals to find full-time employment. As a result, more job seekers turn to part-time work, gig jobs, or self-employment—forms of work that typically offer more unpredictable hours, leading to a higher proportion of workers experiencing short hours of work. Therefore, both demand-side and supply-side factors contribute to an increase in short hours of work when aggregate demand is weak. Additionally, China's labor

17 The social insurance programs, including basic pension insurance, basic medical insurance, and unemployment insurance, have been uniformly collected by the tax authorities, whereas they were previously collected by the bureau of social insurances since January 2019.

market is uniquely segmented by institutional factors. For example, some workers in SOEs experience short hours of work because of institutional overstaffing and the social responsibility by SOEs to secure employment rates.

However, even during economic downturns, when aggregate demand is low, such as after 2018, the proportion of workers experiencing long hours remains high, contributing to an increase in average work hours. The market competition become more intense as the aggregate demand is low. It is challenging for firms to make profits and even to survive. In China's labor market which is characterized by monopsony and continuous technological changes, under fierce competition, employers who have strong bargaining power do not only reduce the number of new hires but also extend work hours to cut unit labor costs, which therefore lowers hourly wages. As a result, in addition to the weak enforcement of the Labor Law, the lack of collective bargaining mechanism also plays a key role in the failure for China to regulate long hours of work. Furthermore, the recent economic downturn has made firms more sensitive to external uncertainties. Firms have incentives to reduce all types of quasi-fixed costs as much as possible to achieve short-term profit maximization. Extending work hours per worker is one example of such cost-saving strategy. Thus, even when firms do not directly experience the reduction of sales, they still have incentives to extract more labor by extending work hours to mitigate the potential losses caused by economic uncertainty. This self-protective behavior has exacerbated the phenomenon of long hours of work.

In conclusion, the paradox of the coexistence of both long hours of work and short hours of work can be primarily attributed to the aggregate demand shortage, which is driven by factors such as changes in demographic structure, the COVID-19 shock, and reforms in the social insurance system. On one hand, the demand shortage increases employment flexibility, which in turn raises the proportion of short hours of work. On the other hand, the aggregate demand shortage further intensified market competition. Together with the poor enforcement of labor laws and the absence of a collective bargaining mechanism, in pursuit of profit maximization, firms choose to extend work hours per worker, resulting in long hours of work. However, the theoretical explanation presented above still require further empirical validation.

4. Work Hours Mismatch: An Overlooked Phenomenon

► The introduction of work hours mismatch

One limitation of the neoclassical labor supply theory is that it fails to distinguish between actual work hours and desired work hours. The theory overlooks the situation when workers, due to constraints on work hours, are unable to work their desired amount of time in equilibrium (Abowd & Ashenfelter, 1981). In a labor market with fixed work hours-wage combinations and wage differences, workers might be willing to sacrifice wage income in exchange for work hours that better fit their preferences (Altonji & Paxson, 1988). The mismatch between actual and desired work hours is known as work hours mismatch. As early as 1980, a survey conducted by U.S. Department of Labor on income and leisure preferences found that work hours mismatch was quite common, with most Americans preferring to trade part of their income for more leisure time (Best, 1980). Since then, various studies, which are mainly from high-income countries, have provided empirical evidence that workers' actual work hours often do not align with their desired work hours. These studies suggest that work hours mismatch not only reduces job satisfaction and well-being (Wunder & Heineck, 2013; Miranti & Li, 2019; Lachowska et al., 2023), but also exacerbates income inequality (Beckmannshagen & Schröder, 2022).

Distinguishing between actual and desired work hours in labor surveys offers at least two benefits. From a government perspective, understanding workers' true preferences for work hours can help policy makers better assess the efficiency of labor allocation, thereby improving both the efficiency of labor allocation and overall job quality. From employers' perspective, understanding workers' preferences for work hour arrangements can help employers optimize work schedules, which can boost job satisfaction and enhance work efficiency, ultimately improving overall labor productivity for the organization.

► Definitions and measurements

To measure work hours mismatch, the International Labour Organization (ILO, 2022) has proposed two standards: objective and subjective. These standards identify overemployment and underemployment within the sample based on the difference between actual work hours and desired work hours. According to the objective standard, work hours mismatch refers to a clear preference for a complete change from part-time to full-time work (or vice versa). A full-time (part-time) worker who wants to switch to part-time (full-time) work is considered overemployed (underemployed). The subjective standard reflects a more general desire to gradually adjust work hours, whether to increase or decrease them. If a worker wishes to reduce (increase) their

work hours, they are classified as overemployed (underemployed). Compared to the objective standard, the subjective standard relaxes the requirement regarding whether a worker is full-time or part-time, focusing instead on their desire to change their current work hours. The subjective standard is better suited to identifying workers' preferences for work hours adjustments, regardless of their actual hours worked.

Therefore, this report follows the subjective measurement method proposed by the ILO, classifying any worker whose actual work hours differ from their desired hours as experiencing work hours mismatch. Workers whose actual hours exceed their desired hours fall into the overemployed group, while those whose actual hours are equal to their desired hours are in the matched group. Workers whose actual hours are less than their desired hours are categorized as underemployed.

We adopt the measurement method by ILO and use the China Employer-Employee Matched Survey (CEEMS) data in 2012 from Renmin University of China to describe and analyze the distribution and causes of work hours mismatch in China. This dataset not only includes information on respondents' average number of weekly work hours in the past month but also asks them about their desired number of weekly work hours. Specifically, one survey question asks, "how many hours per week would you like to work?" Based on this, we measure preferred work hours and identifies both underemployment and overemployment by comparing actual and preferred work hours.

► The distribution and characteristics of work hours mismatch

► The overall pattern

Overall, work hours mismatch is a widespread issue in China, with overemployment being the most common form. Table 12 shows that nearly 60% of the sample experiences work hours mismatch, with 55.9% being overemployed and 3.8% underemployed. Among those working less than 35 hours per week, more than half of them wish to increase their work hours, while over 80% of those working more than 48 hours per week are willing to reduce their hours. The results in Table 7 indicate that work hours mismatch is more likely to occur when workers' hours are either too long or too short. This also suggests that work hours in China are indeed excessively long, which to some extent has negatively impacted the overall quality of employment.

Table 12. Work hours mismatch by hours (%)

	All	< 35 hours	35-48 hours	> 48 hours
Underemployed	3.8	51.0	4.1	1.4
matched	40.3	42.9	53.4	14.7
Overemployed	55.9	6.1	42.5	83.9
Total	100.0	100.0	100.0	100.0

► Work hours mismatch by individual characteristic

By gender, men are more likely to experience work hours mismatch than women, though the overall difference is not large. Table 13 presents the distribution of work hours mismatch across various personal characteristics. It shows that the underemployment rate is higher among men than women, while there is no significant difference between the two in terms of overemployment. This difference supports the previously mentioned variation in work hours preferences between genders.

Table 13. Work hours mismatch by gender (%)

	Men	Women	Difference
Underemployed	5.1	2.8	2.3***
Overemployed	55.3	56.3	-1.0

Note: * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

The pattern of work hours mismatch varies across different age cohorts. Table 14 shows that the percentage of underemployed workers is relatively similar across age cohorts, with the 40-49 age group being somewhat lower. However, the percentage of overemployed workers is significantly higher among those aged 15-29 and those aged 50 and above compared to other cohorts. The higher rate of overemployment among the those aged 15-29 may be related to their generally longer work hours¹⁸. For the older group, it may be linked to their relatively lower income levels¹⁹.

Table 14. Work hours mismatch by age cohort

	15-29 (%)	30-39 (%)	40-49 (%)	50 and older (%)	F statistic
Underemployed	4.0	4.0	3.1	4.4	0.5
Overemployed	59.2	54.3	50.7	57.7	5.3***

Note: * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Work hours mismatch is also related to education attainment. Table 15 shows that there is no significant difference in the underemployment rate among groups with different education levels. However, the overemployment rate is higher among those with primary education or below, reaching 70.3%, which is significantly higher than that of other groups. One possible reason is that workers with lower levels of human capital accumulation are more likely to engage in low-wage jobs with longer work hours, making them more susceptible to overemployment.

¹⁸ In our sample, workers aged 15-29 have the longest mean work hours.

¹⁹ In our sample, workers aged 50 and older have the lowest mean income.

Table 15. Work hours mismatch by education attainment

	Primary education and below (%)	Secondary education (%)	Tertiary education (%)	F statistic
Underemployed	4.0	4.0	3.6	0.2
Overemployed	70.3	55.4	55.5	4.4**

Note: * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

The degree of work hours mismatch varies by hukou type as well. Table 16 shows that holders of agricultural hukou have a significantly higher proportion of both underemployment and overemployment compared to those with non-agricultural hukou. A possible reason is that labor market discrimination caused by the hukou system might both make it more difficult for agricultural hukou holders to find formal and decent jobs. These jobs may also have more variable work hours, leading to an increase in the extent of work hours mismatch.

Table 16. Work hours mismatch by hukou type (%)

	Agricultural	Non-agricultural	Difference
Underemployed	4.9	3.1	1.8***
Overemployed	58.9	53.7	5.2***

Note: * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

► Work hours mismatch by employment status

There are industry differences in the distribution of work hours mismatch. Due to the limited number of observations in certain industries, the report analyzes 11 industries with more than 100 observations²⁰. Figure 14 illustrates the distribution of work hours mismatch in these industries, ranked by actual weekly work hours from highest to lowest. Overall, workers in industries with higher levels of long hours of work are more likely to experience overemployment, while workers in industries with lower levels of excessive work hours are more likely to experience underemployment. More specifically, industries with a higher proportion of overemployment tend to be labor-intensive. In these industries, employers generally have stronger bargaining power than workers, leading to longer work hours and an increase in the overemployment rate.

20 The 11 industries we use for our analysis in this section are (1) *reality business*, (2) *finance*, (3) *scientific research, technical service and geologic examination industry*, (4) *information transfer, computer service and software*, (5) *building*, (6) *leasehold and business service industry*, (7) *traffic, storage and mail business*, (8) *manufacturing*, (9) *wholesale and retail trade*, (10) *neighborhood services and other service industry*, and (11) *accommodation and food*.

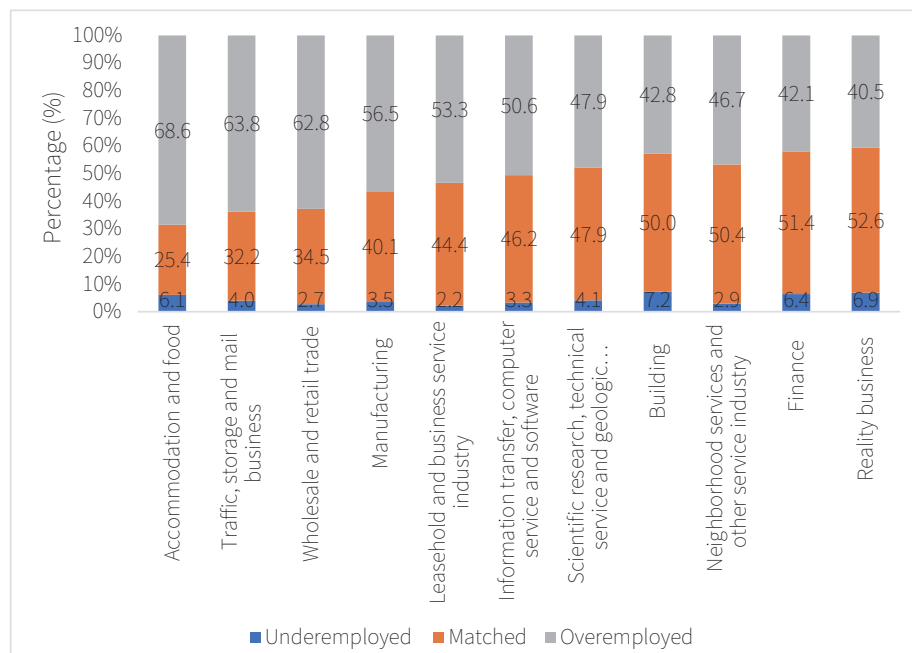


Figure 14. Work hours mismatch by industry

The distribution of work hours mismatch also varies with income levels. Figure 15 shows that the underemployment rate is positively correlated with income levels²¹. As income levels rise, the underemployment rate also increases, reflecting that people are willing to work longer hours as their income increases. The relationship between overemployment and income levels is more complex. As income levels rise, the overemployment rate first decreases and then increases. This suggests that, at lower income levels, an additional unit of income provides greater utility than an additional unit of leisure. However, at higher income levels, people may prefer more leisure to additional income.

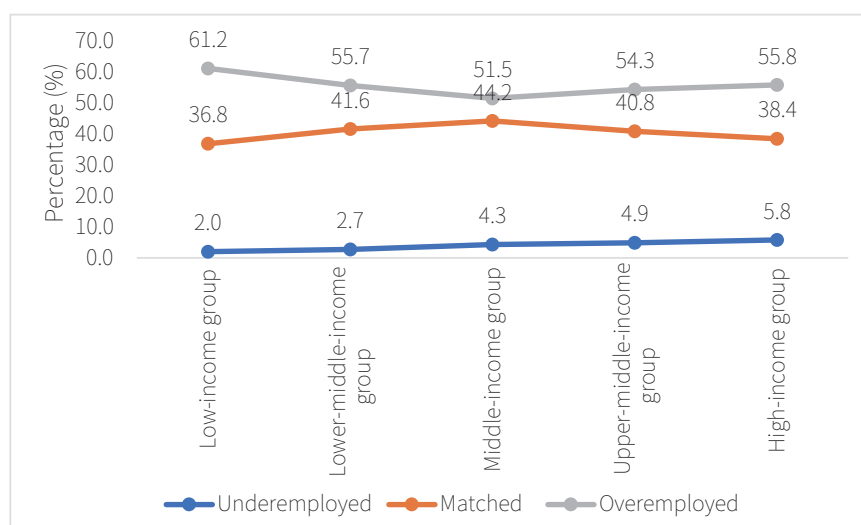


Figure 15. Work hours mismatch by income level

21 Income level is measured based on the after-tax cash income received from the firm in the previous month.

Work hours mismatch is also related to ownership type. Panel A of Table 17 compares work hours mismatch in state-owned enterprises (SOEs), private enterprises, foreign enterprises, and other types of enterprises. The underemployment rate is highest in private enterprises and lowest in SOEs; the overemployment rate is highest in foreign enterprises and lowest in other types of enterprises. An interesting phenomenon is that although SOEs generally have shorter work hours compared to non-state-owned enterprises, the degree of work hours mismatch is similarly high. To further explain this phenomenon, in Panel B, we compare the actual and preferred work hours across different ownership types. Because SOEs offer more stable wages and employment, as well as higher social insurance coverage, workers have stronger bargaining power, leading to shorter preferred work hours. Therefore, despite shorter actual work hours in SOEs, the work hours mismatch ratio (primarily overemployment) is not lower than that in non-state-owned enterprises, as the preferred work hours in SOEs are also significantly shorter.

Table 17. Work hours mismatch by ownership

Panel A: Work hours mismatch					
	SOEs (%)	Private enterprises (%)	Foreign and TW/HK/MAC enterprises (%)	Others (%)	F statistic
Underemployed	2.2	5.4	3.9	3.1	4.2***
Overemployed	60.8	57.2	64.7	52.8	5.6***
Panel B: Actual and preferred work hours (hours)					
	Actual	Preferred	Difference		
SOEs	45.1	38.5	6.6***		
Private enterprises	49.4	43.1	6.3***		
Foreign and TW/HK/MAC enterprises	48.8	41.8	7.0***		
Others	47.3	41.7	5.6***		

Note: * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Work hours mismatch is also related to the level of employment formality. We measure formal and informal employment using the method mentioned earlier. Table 18 shows that there is no significant difference in underemployment rate between formal and informal workers, but the overemployment rate is significantly higher among informal workers. A possible reason for the correlation between overemployment and employment formality is that informal workers, who are often not covered by labor contracts or social insurances, have weaker wage bargaining power and less job stability. As a result, they are forced to accept poorer work conditions,

including unreasonable work hour arrangements. These undesirable work schedules are likely to lead informal workers into a situation of overemployment. On the other hand, formal workers, who enjoy better working conditions and benefits, have more standardized work hour arrangements, leading to a lower proportion of overemployment.

Table 18. Work hours mismatch by employment formality (%)

	Formal	Informal	Difference
Underemployed	4.1	3.2	1.0
Overemployed	52.4	63.3	-10.9***

Note: * $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$.

► Reasons behind work hours mismatch

► Ineffective pay systems

The wage and compensation systems in China are diverse. Different types of jobs and industries adopt various wage payment methods, including monthly salary, piece-rate wages, hourly wages, and daily wages. Each pay method motivates employees differently, which can significantly affect work hours mismatch.

The monthly salary system is the most common in China, particularly for formal positions in firms and public institutions. Under this system, wages or salaries consist primarily of base salaries and overtime pays. When base salaries are low, workers may rely on overtime to earn additional income, increasing the likelihood of work hours mismatch. On one hand, if workers are required to work excessively long hours, they may wish to reduce their work hours, resulting in overemployment. On the other hand, if firms cannot provide enough work hours as the sales decline, workers may wish to extend their work hours to increase their income, leading to underemployment.

In the case of piece-rate wages, firms often lower the piece rate, forcing workers to work overtime to increase their earnings, which leads to overemployment. Since piece-rate wages are directly tied to production output, the income of the workers depends on how much they produce. As a result, to maintain their income level, workers frequently need to increase their work hours or work harder. In China, piece-rate wages are commonly used in manufacturing plants, where many factories implement two-shift and three-shift work schedules to boost production, exacerbating overemployment.

Apart from the monthly salary and piece-rate systems, some workers are paid based on hourly wages or receive daily payments. Hourly wages link income directly to hours worked, which

theoretically should prevent both underemployment and overemployment more effectively. However, jobs that pay hourly wages in China such as cleaners, retail sales staff, and restaurant servers often offer very low wage rates. Under these conditions, hourly workers may still feel pressure to extend their work hours to earn more, leading to overemployment. In contrast, jobs with daily wages are often temporary or highly seasonal, such as those in construction, particularly for rural migrant workers. Given low job stability, workers with these jobs often look forward to extending their work hours, which results in underemployment.

Moreover, many employers do not comply with the overtime pay regulations set by the Labor Law, which further reduces workers' satisfaction with their work hours and exacerbates overemployment. In the employer-employee matched data sample, 82% (1,348) of the 1,637 employees who worked overtime in 2011 were not paid the legally required 1.5 times their regular wages. Instead, they received compensatory time off (560 workers), no pay (452 workers), or were paid at their regular wage rate (336 workers).

► Unclear job duties

After the reform and opening up, China significantly boosted productivity by introducing advanced foreign technologies and equipment. However, many firms, while making technological breakthroughs, failed to improve their management practices, which resulted in high turnover and low employee productivity (Wang et al., 2007; Liang et al., 2012). Therefore, the allocation of human resources is still problematic and inefficient. Besides, work hours mismatch could be another consequence of poor human resource management practices.

A clear example of poor management efficiency is the lack of clear job duties. According to Coase's theorem, well-defined property rights are key to achieving optimal resource allocation. Unclear job duties or ambiguous management authority in the workplace can be viewed as a form of undefined property rights, which increases transaction costs and leads to economic inefficiency (Chen, 2022). When job roles are not clearly defined, employers have difficulty allocating tasks and time appropriately based on actual needs. This can result in a situation when some workers are overemployed as they are overloaded, while other workers may be underemployed due to insufficient workloads.

In China, many employers do not provide clear job descriptions or have specific guidelines for work tasks, which results in ambiguity in job duties. The lack of clarity often makes employees divide tasks among themselves, which reduces efficiency and prolongs the time required to complete tasks. To illustrate this issue, we use an indicator of job clarity, constructed from a Likert-scale question in the CEEMS data²². From Figure 16, we can see that as the job clarity perceived by

22 The question used to measure job clarity is, "Does your workplace clearly define the responsibilities for each position?" The Likert scale ranges from 1 to 5, corresponding to the following responses: strongly disagree, somewhat disagree, neutral, somewhat agree, and strongly agree.

employees increases, the overemployment rate decreases, whereas the underemployment rate increases. Since overemployment accounts for the majority of work hours mismatch in the sample, the overall percentage of mismatch decreases as job clarity improves. This suggests that clearly defined job duties can help reduce work hours mismatch and improve overall efficiency.

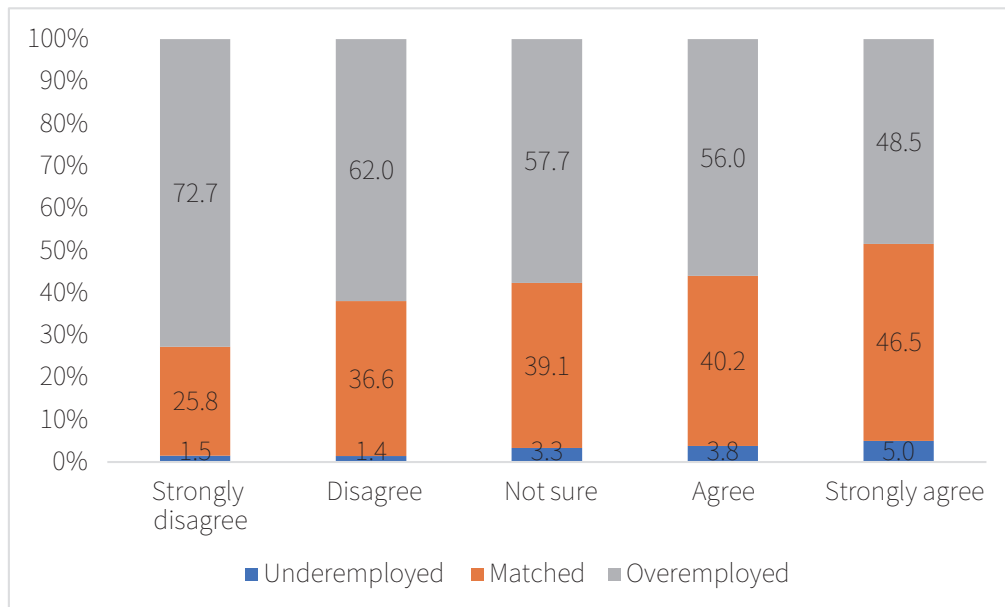


Figure 16. Work hours mismatch by job clarity

5. Outlooks and Recommendations

When economic growth rate declines, China's labor market has multiple challenges in recent years. In addition to the widely recognized structural mismatch in which both job seekers and employers have it hard to "match" with each other, the distribution of work hours has also become polarized, as the numbers of workers who have long and short hours of work both increase. On one hand, many workers struggle to find full-time jobs due to labor market slackness or face reduced work hours due to declining demand from businesses. On the other hand, a series of internal and external pressures have brought challenges to the survival of firms. As a consequence, many firms prefer extending work hours per person of incumbents to hiring additional workers. Work hours mismatch, especially overemployment, directly shows that the overall work hours in China do not align with workers' preferences, as most workers want shorter hours of work. Overall, if the distribution of work hours cannot be improved, especially the issue of long hours of work, it will be difficult for China to achieve the "high-quality and full employment" goal proposed by the Communist Party of China during the 20th National Congress.

We provide the following five outlooks and recommendations on the current status and research progress of work hours in China:

First, strengthening the enforcement of the Labor Law is crucial for improving employment quality. The government should ensure that firms comply with regulations on overtime hours and overtime pays outlined in the Labor Law, and safeguard workers' work-life balance and ensuring they receive deserved compensation. Moreover, in order to reduce the proportion of long hours of work, the government should introduce more flexible work hour policies and set reasonable work hours constraints based on different industries and roles.

Second, the government should evaluate the potential impact of technological advancement on work hours. With the development of the digital economy and the continued progress of artificial intelligence, digitalization and automation will continue to reshape the employment structure. While the overall demand for work hours may decrease, this does not necessarily mean that individual work hours will decrease. As mentioned in Section 3, some workers are particularly affected by technological shock. Therefore, it is crucial for the government to effectively monitor and guide the impact of new technologies on labor distribution and labor relations.

Third, the impact of demographic changes on work hours should be scientifically evaluated. In the short run, the aging population will reduce labor supply and raise recruitment costs for businesses. Therefore, firms might extend work hours per person as an approach to save labor costs, which exacerbates the issue of long hours of work. In the long run, the product market might face the shrinking demand, which would also reduce the demand for labor. Meanwhile, as

the labor supply decreases, the equilibrium labor force might shrink as well, though it remains ambiguous how the equilibrium work hours will be affected. Policy makers should therefore carefully assess the short- and long-run impacts of demographic changes on work hours.

Fourth, firms should utilize the remote communication and telework technologies to improve work hours mismatch. Businesses can adopt non-standard work modes such as telework or flexible hours based on the needs of different workers. This not only enhances workers' work-life balance but also effectively reduces work hours mismatch, which will improve the allocation of labor resources and alleviate the problem of labor supply shortage caused by population decline..

Fifth, more attention should be paid to the statistical survey of work hours mismatch. A high proportion of work hours mismatch indicates a structural disequilibrium in labor resource allocation and low employment quality. As the job quality is more and more valued, addressing work hours mismatch will become a key step for the government toward achieving the "high-quality and full employment" goal it proposed. However, most current labor surveys in China are unable to effectively measure work hours mismatch, as the questionnaires lack relevant items specifically designed to capture this issue. We recommend that policy makers and researchers perfect questionnaires on work hours surveys and explore the distribution, causes, and future trends of work hours mismatch in depth.

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Appendix 1: The measurement of formal and informal employment

There is no unified definition of formal and informal employment both in China and other countries. The 17th International Conference of Labour Statisticians (Husmans, 2004) categorized employment in the informal economy and informal employment in the formal sector as informal employment. Based on existing literature (Cai & Wang, 2004; Hussmanns, 2004; Wu & Cai, 2006; Wu, 2009; Xue et al., 2014; Chen et al., 2022), following the criteria above, we measure the formality of employment from two dimensions: the formality of the economic sector in which a worker works and the labor contract status. Specifically, the classification of formal and informal workers is as follows. First, workers who are hired by individuals or families, or whose employer cannot be identified, or whose employer's nature is unknown, are informally employed. Second, workers working for private enterprises or individual businesses with fewer than 8 workers are defined as informally employed. Third, workers who do not belong to the first two categories and do not have a signed labor contract, or have not participated in any social insurance program are defined as informally employed. Fourth, workers who do not belong to the first three categories, whose employer is a government department, public institution, or state-owned enterprise, and whose occupation is either "leader of the organization", "professional technician", or "office staff and related personnel" are defined as formally employed. Fifth, workers in agriculture, forestry, animal husbandry, and fishing industry are neither formally nor informally employed. Using the above criteria, we estimate that in the 2018 CFPS sample, 59% of workers were informal workers, which is similar to the proportion estimated in other literature using the same data source (Chen et al., 2022).

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