Center for Economic Institutions

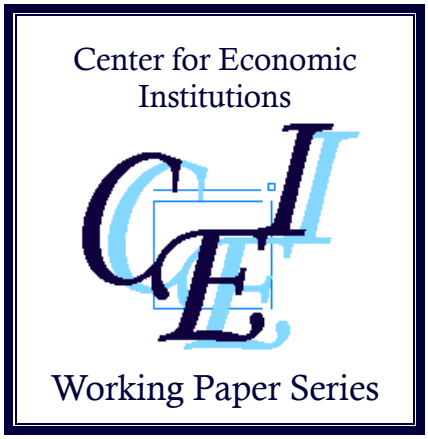
Working Paper Series

No. 2024-4

"Economic Transition and the Ethnic Wage Gap in China: A Meta-Analytic Approach"

Xinxin Ma and Ichiro Iwasaki

February, 2025



Institute of Economic Research
Hitotsubashi University
2-1 Naka, Kunitachi, Tokyo, 186-8603 JAPAN
https://cei.ier.hit-u.ac.jp/English/index.html
Tel:+81-42-580-8405/Fax:+81-42-580-8333

CEI Working Paper No. 2024-4
February 2025

Economic Transition and the Ethnic Wage Gap in China: A Meta-Analytic Approach*

Xinxin Ma,[a] Ichiro Iwasaki[bc]**

[a] *Faculty of Economics, Hosei University, Tokyo, Japan*
[b] *Institute of Economic Research, Hitotsubashi University, Tokyo, Japan*
[c] *Faculty of Law, Economics, and Management, Okinawa University, Okinawa, Japan*

Abstract: Income inequality driven by racial and ethnic factors significantly impacts sustainable social and economic development. This study performs a meta-analysis of data extracted from 55 previous studies to investigate the ethnic wage gap in China. The results reveal that although the ethnic wage gap in China has had a statistically significant and economically meaningful impact during its economic transition period, it remains low. The ethnic wage gap is more pronounced among female workers, workers in rural regions, and workers in the public sector than among male workers, workers in urban regions, and those in the private sector. Furthermore, the ethnic wage gap has exhibited a U-shaped trend during the transition period, indicating that it has increased in recent years.

Keywords: Ethnic wage gap, meta-synthesis, meta-regression analysis, publication selection bias, China

JEL Classifications: D63, J31, J71, P21, P31

* This research work was supported financially by the Japan Society for the Promotion of Science (JSPS KAKENHI Grant Number 20H01489). We thank Tammy Bicket for her editorial assistance. Needless to say, all remaining errors are our responsibility.
** Xinxin Ma (Corresponding author): 4342 Aihara-machi Machida-shi, Tokyo 194-0298, Japan; Tel.: +81-42-783-2592; Email: xxma@hosei.ac.jp. Iwasaki Ichiro: E-mail: iiwasaki@ier.hit-u.ac.jp

1 Introduction

Sustainable development is a critical issue for both developing and developed countries (Haider et al. 2018; Rai et al. 2019; Borbely and McKenzie 2024). The 2030 Agenda for Sustainable Development (the 2030 Agenda) is a set of international development goals spanning from 2016 to 2030 that was adopted during the United Nations Sustainable Development Summit in September 2015. The 2030 Agenda outlines Sustainable Development Goals (SDGs), which consist of 17 goals and 169 targets aimed at creating a sustainable world. Since ethnic income inequality is closely tied to Reduced Inequalities (SDG 10) and No Poverty (SDG 1), this issue has garnered global attention.

Many developing and developed countries are multiethnic. For instance, the Organization for Economic Cooperation and Development (OECD, 2023) reports that in 2019, 28 OECD countries have a foreign-born population, with Luxembourg having the highest proportion at 47.3%. Other developed countries such as Australia (29.9%), Switzerland (29.7%), Israel (21.2%), and Iceland (18.1%) also have high foreign-born population proportions.

Some developing and emerging economies have diverse ethnic populations (Gustafsson and Yang 2017; Nguyen, Tran, and Van Vu 2017). An ethnic wage gap exists in many developed countries, including the United States (Hirsch 2014; Lozano and Cheng 2016), Italy (Piazzalunga 2015), Germany (Ingwersen and Thomsen 2021), and other European countries (Tverdostup and Paas 2019). It is also prevalent in developing and emerging economies, such as China and Vietnam (Ding, Li, and Gustafsson 2015; Gustafsson and Yang 2017; Nguyen, Tran, and Van Vu 2017).

Several empirical studies on the ethnic wage gap have been conducted worldwide (e.g., Hirsch 2014; Campos, Ren, and Petrick 2016; Fernandes 2017; Gustafsson and Yang 2017; Ridala and Toomet 2019; Bormann, Ridala, and Toomet 2019; Sinem, Yilmaz, and Kilic 2021). However, most studies focus primarily on developed countries, and empirical evidence from developing and emerging market economies is limited (Ding, Li, and Gustafsson 2015; Gustafsson and Yang 2017; Nguyen, Tran, and Van Vu 2017).

This study investigates the ethnic wage gap in China, a large emerging market economy with a significant ethnic minority population. China is a multiethnic country that recognizes the Han majority and 55 ethnic minorities. In 2020, China's total ethnic minority population was 125.47 million, which was 8.89% of the total population (the Han population was 91.11%)

(National Bureau of Statistics [NBS] of China, 2021).[1] Unlike in advanced capitalist countries, the Chinese government has enforced ethnic equality in society as a socialist ideology since the planned economy period (1949 to 1977) (Zhao and Li 2021).[2] During the economic transition period (post-1978), the government initiated market-oriented reform and has implemented several new policies to continue promoting ethnic equality in education, employment, and earned income.[3]

It is assumed that these policies might reduce the ethnicity inequality; consequently, the ethnic wage gap might be small in China. A few studies have focused on this issue (Gustafsson and Li 2003; Ding, Li, and Gustafsson 2015; Campos, Ren, and Petrick 2016; Gustafsson and Yang 2017). However, since these studies use cross-sectional survey data and focus solely on the income gap between Han and ethnic minorities nationwide, the dynamic changes in the ethnic wage gap and whether the wage gap varies across different groups remain unclear. This study first addressed the following five questions: (1) How large is the ethnic wage gap in China during the transition period?[4] (2) Do ethnic wage gap disparities differ by gender? (3) Do ethnic wage gap disparities remain between urban and rural regions? (4) Do ethnic wage gap disparities exist between public and private sectors? (5) How does the ethnic wage gap change with the advancement of market-oriented reforms from the 1990s to 2010s? Consequently, this study provides new empirical evidence on these issues.

Additionally, this study employs a new approach, rather than the wage functions used in the existing literature, to answer these questions. We collected the entire published literature in

[1] In 2020, the percentage of ethnic minorities in China was higher than that in Finland (7.0%), Italy (10.4%), and Hungary (5.8%); however, the percentage was lower than that in the USA (13.6%), France (12.8%), and Germany (16.1%) (National Bureau of Statistics of China, 2021; OECD, 2023).

[2] Both the *Common Program of the Chinese People's Political Consultative Conference*, published in 1949, and the *Constitution of the People's Republic of China*, published in 1954, stipulate that all ethnic groups in the People's Republic of China are equal and prohibit discrimination and oppression among ethnic groups. Through ethnicity identification, the Chinese government confirms that the 55 ethnic minorities and the Han majority constitute China. The Chinese government has enforced the development of ethnic minority autonomous regions (*Zizhiqu*) and has promoted ethnic equality in workplaces and political participation.

[3] These policies include (1) educational development policies that reduce the education gap; (2) employment-promotion policies that promote labor force participation and managerial promotion of ethnic minorities; and (3) regional development policies that reduce the income gap between ethnic minorities and Han areas (Chen 2019; Mai 2019; Tian 2020).

[4] Gustafsson and Li (2003) analyze the change in the ethnicity wage gap in rural China from 1988 to 1995. They find that the wage gap in rural areas increased during the period. However, the gap is unclear from a nationwide and long-term (e.g., from the 1990s to the 2010s) perspective.

English and Chinese and attempted to answer these questions by utilizing the advanced techniques and guidelines of the meta-analysis approach proposed by Stanley and Doucouliagos (2012) and Havránek et al. (2020). A meta-analysis approach has been utilized in labor economics studies (Stanley and Doucouliagos 2012, 2017; Stanley et al. 2017) as well as transition economics studies (Ma and Iwasaki 2019, 2020; Iwasaki et al. 2020, 2022). Additionally, some empirical studies (e.g., Gustafsson and Li 2000; Mao et al. 2021) have used the Han or ethnic minority (non-Han ethnicity) dummy in wage functions as a control variable, so there exists a mass of empirical evidence on this issue, which can be used in a meta-analysis. However, no study focuses on the issue using a meta-analysis approach. To the best of our knowledge, this study is the first meta-analysis on the ethnic wage gap in China.[5]

The meta-analysis approach significantly contributes to the existing literature in three ways. First, comparison studies between different groups are scarce due to the lack of survey data. In the extant literature, evidence on the differences in the ethnic wage gap among gender, urban/rural regions, and public/private sectors in China is limited. Through a meta-analysis that synthesizes and compares empirical evidence scattered across existing literature, this study can explore the differences between these groups and sectors.

Second, although the Chinese government has implemented policies to promote equality across ethnic groups since the planned economy period, the government has enforced market-oriented economy reform since 1978, which has significantly affected the mechanism of wage determination systems (Gustafsson and Li 2000; Lin et al., 2020).

However, due to the limited availability of survey data, no empirical study has used long-term data to examine the time trend of the ethnic wage gap in China from the early transition period to recent years. Since the meta-analysis approach can aggregate long-term empirical evidence from various literature using short-term survey data, it can address the limitations posed by short-term data. This study is the first to investigate long-run dynamic changes in the ethnic wage gap from the 1980s to the 2010s.This allows us to comprehensively understand how

[5] We used “meta-analysis,” “systematic review,” “ethnic wage gap,” and “China” as keywords to search for the related literature of the following publishers of English papers: EconLit (https://www.ebsco.com), Web of Science (https://access.clarivate.com), Emerald Insight (https://www.emeraldinsight.com), Sage Journals (http://journals.sagepub.com), Science Direct (http://www.sciencedirect.com), Springer Link (https://link.springer.com), Taylor & Francis Online (https://www.tandfonline.com), Wiley Online Library (https://onlinelibrary.wiley.com); and the Chinese National Knowledge Infrastructure database (https://chn.oversea.cnki.net) for Chinese papers. Only one Chinese study (Dai 2016) conducted a descriptive literature review, although it did not employ a meta-analysis.

institutional transitions influence the ethnic wage gap.

Third, the meta-regression analysis (MRA) results clarify the influence of econometric research factors—such as the selection of independent variables, type of survey data, estimation period, choice of estimator, and control for selection bias—on the ethnic wage gap. Furthermore, MRA enables us to test for publication selection bias and examine the presence of genuine empirical evidence in the literature. This study is the first to evaluate the propriety of empirical results in the investigation of the ethnic wage gap in China.

The results of a meta-analysis using 472 estimates extracted from 55 previous studies show that, although the ethnic wage gap in China during the market-oriented reform period has been statistically significant and economically meaningful, its impact remains low. It is also revealed that the ethnic wage gap is more severe among female worker groups, rural regions, and in the public sector than among male worker groups, urban regions, and in the private sector. Furthermore, a U-shaped trend of the ethnic wage gap is observed during the market-oriented reform period, which indicates that the ethnic wage gap has expanded in the recent period.

The remainder of the paper is structured as follows: The next section presents the hypotheses to be tested via meta-analysis. Section 3 describes the procedures used to search and select the literature subject to the meta-analysis and presents an overview of the selected studies. Section 4 presents the meta-synthesis of the collected estimates. Section 5 performs an MRA of the heterogeneity among studies. Section 6 tests for publication selection bias and examines the presence of genuine evidence in the literature. Section 7 discusses the major findings obtained from the meta-analysis, and Section 8 concludes.

2 Literature Review and Hypothesis Development

Based on the economics theory, institutional background, and literature, we propose five hypotheses testable by meta-analysis in this study.

First, regarding the level of the ethnic wage gap in China during the transition period, as mentioned above, during the planned economy period, China emphasized ethnic equality as an important socialist ideology, and the government enforced it strictly by implementing equal employment and political promotion policies. Therefore, the ethnicity gaps in employment, wages, and occupation were much smaller in this period (Gustafsson and Li 2000; Ma, 2018; Wang 2021; Zhang and Li 2021). The ethical equality policies enforced in the planned economy

period still greatly influence employment situations in the public sector with market-oriented economic reform. Furthermore, the Chinese government has implemented new policies to reduce the education and income gaps between ethnic minority and Han regions. For instance, in 1981, the education policy stipulated that ethnic minorities enrolling in colleges and universities in Han regions would be admitted under the same conditions as Han candidates and under a pro-rata policy for ethnic minorities. Since 2006, the university admission policy for ethnic minorities has been based primarily on "admission with extra points" (*Jiafen Luqu*) (Mai 2019; Chen 2019). In 2010, the General Office of the State Council issued the *Eleventh Five-Year Plan for the Cause of Ethnic Minorities, 2010–2020*. Based on these plans, the government increased its financial support (subsidies) for industrial upgrades and public education investment to reduce the income gap between the ethnic minority and Han areas. Thus, it can be assumed that the wage effect of ethnicity was small during the transition period.

Evidence from a few empirical studies also shows a miniscule ethnic wage gap in China during the economic transition period. For example, Gustafsson and Yang (2017) calculated the monthly wage by nine ethnicities based on China's Inter-Census Survey 2005; the results indicate that the ethnic wage gap differs by ethnic minority type: the Han wage level is lower than those of Korean, Mongolian, and Manchu minorities, while it is higher than those of Tibetan, Hui, Tujia, Uighur, Miao, and Zhuang minorities. Consequently, the overall ethnic wage gap is small.[6] Ding (2012) explored the fact that, in the Ninxia Ethnicity Autonomous Region (in which the Hui populations are concentrated), the income level of the Hui was similar to that of the Han.

Therefore, we propose the first hypothesis as:

Hypothesis H_1: *The effect size of ethnicity on wages is small in the transition period.*[7]

Second, regarding gender differences in the ethnic wage gap, it is well known that, during the planned economy period, China emphasized gender equality as an important socialist ideology, and the government enforced it strictly by implementing policies to promote women's

[6] In 2005, the monthly wage level was 1229 yuan for the Han; the average wage of nine ethnic minorities was 1121 yuan. The wage level was 1583 yuan, 1241 yuan, and 1231 yuan among Korean, Mongolian, and Manchu ethnic minorities, respectively, higher than that for the Han. The average wage was lower among Tibetan (1155 yuan), Hui (1152 yuan), Tujia (1079 yuan), Uighur (1041 yuan), Miao (982 yuan), and Zhuang (898 yuan) ethnic minorities.

7 In the meta-analysis, for reasons of expediency, the size of an effect in question is used to delineate four categories: (a) economically insignificant effect, (b) small effect, (c) medium effect, and (d) large effect (Doucouliagos 2011). Please refer to Section 3 for detailed explanations of these classifications.

participation in the labor force, as well as equal employment opportunity policies, as demonstrated by the slogan "women hold half of the sky." Therefore, the gender gaps in employment, wages, and promotions were much smaller in that era (Gustafsson and Li 2000; Ma 2021). However, with the progress of state-owned enterprise (SOE) reform and the development of privately owned enterprises, the gender gap in the labor market has widened (Iwasaki and Ma 2020; Ma 2021), and discrimination against women in the workplace has become severe (Gustafsson and Li 2000; Ma 2021). As the influence of equal employment opportunity policies has weakened during the transition period, as compared with that in the planned economy period (even in the public sector), ethnic minority female workers might experience double discrimination—gender and ethnic minority discrimination—during the same period.

Considering the gender gap in job promotion, because the proportion of managers is higher for Han than for ethnic minorities (Yu and Yang 2021; Xu and Wang 2022) and the promotion of managers needs the recommendations of the high-rank level managers (most of them are male managers), it is assumed that the probability of becoming a manager is lower for ethnic minority female workers than for ethnic minority male workers.

Furthermore, as compared to the Han regions (most are urban areas and economically developed regions), most ethnic minorities live in rural areas and less-developed regions where, even now, there remains deep-rooted social awareness, such as male predomination over women and the belief in "men for work, women for family" (Cheng 2011; Hu, Ren, and Song 2021; Wu, Zhou, and Qin 2022). This may lead to greater discrimination against female ethnic minorities than against their counterparts. Campos et al. (2016) report that the ethnic wage gap in the female group is greater than that in the male group.

Based on these facts and empirical evidence for China, when the gender gap in education and discrimination against ethnic minorities is greater within the female worker group than within the male worker group, a second hypothesis can be predicted:

Hypothesis H_2: *The ethnic wage gap among female workers is greater than that among male workers.*

Third, the differences in the wage effect of ethnicity between rural and urban regions in China are related to regional disparities between ethnic minorities and Han, the household registration system (*hukou*), and the development of township and village enterprises (TVEs).

In China, most ethnic minorities reside in ethnic minority autonomous regions, according to the *Law of the People's Republic of China on Regional Autonomy* (the first version was

published in 1952, and the latest revised version was published in 2001); most ethnic autonomous regions are in the rural areas and western/southeastern regions, which are less-developed regions (Ran 2007; Morales 2019).

Since 1958, the Chinese government has implemented the *hukou* system, which separates urban and rural regions to control residential changes. According to the *hukou* system, moving from rural regions to urban regions without local government permission is prohibited; thus, although there remained numerous surplus laborers in rural areas, rural-to-urban labor migration was heavily restricted until the 1980s (Cai 2016).

TVEs were developed to absorb surplus laborers in rural regions under institutional restrictions and contribute to economic growth (Minami and Ma 2010). During the 1980s, TVEs operated as collective enterprises managed by people's communes, a lower-level state organization in rural regions. In the 1990s, however, most TVEs were privatized. These privatized TVEs now play a strong role in business activities in rural economies, while the influence of ethnic equality policies might be quite limited. Conversely, in SOEs (most of them are in urban areas), the government-enforced ethnic equality policies of the planned economy period might still exist. From this perspective, it is assumed that discrimination against ethnic minority workers in the workplace for rural TVEs might be greater than for urban SOEs.

Therefore, we predict the third hypothesis as follows:

Hypothesis H_3: *The ethnic wage gap in rural regions is greater than that in urban regions.*

Fourth, numerous studies have pointed out that the contemporary Chinese economic market is segmented into public and private sectors (Démurger et al. 2012; Xia et al. 2014; Jiang and Kim 2020). Employment and wage conditions for ethnic minority and Han workers are distinguished in the same way. Regarding the difference in the ethnic wage gap between the two sectors, three effects—(1) government policy effect, (2) monopoly discrimination effect, and (3) market mechanism effect–can be considered as follows:

In the planned economy period, the government strongly promoted ethnic equality in employment and wages and encouraged managerial promotion for ethnic minority workers in the entire public sector. Such favorable employment treatment for ethnic minority workers continues in the public sector. From this perspective, it is assumed that the ethnic wage gap in the public sector may be smaller than that in the private sector (government equality policy effect).

Based on the human capital theory (Becker 1964; Mincer 1974), the individual wage level

in a perfectly competitive labor market is determined by workers' labor productivity (e.g., education, work experience). Therefore, workplace discrimination may become smaller or disappear in a perfectly competitive market. The influence of market mechanisms on wage determinations in the private sector can be seen as greater than that in the public sector. Thus, discrimination against ethnic minority workers in the private sector may be smaller than that in the public sector (market mechanism effect).

In contrast, the discrimination hypothesis (Becker 1957) and the monopsony power hypothesis suggest that imperfect competition may lead to a wage gap in the workplace (Hirsch 2010). When a firm has monopsony power in the labor market, the firm can set a lower wage level for the disadvantaged group (e.g., ethnic minorities, women, and migrants). Thus, a wage gap arises. Hirsch (2010) and Vick (2017) reported that the monopsony power hypothesis is supported in European countries and Brazil. The presence of SOEs in the national economy remains a significant feature of the Chinese economy (Lin et al. 2020; Jian and Lim 2020). As soft budget constraints remain in SOEs that can obtain support from the government and occupy special industrial sectors (Kornai 1980), SOEs gain monopsony power in the market. Therefore, it is predicted that the influence of discrimination against ethnic minorities from monopoly powers may be greater in the public sector than in the private sector (monopoly discrimination effect).

When the monopoly discrimination effect is larger than the government equality policy and market mechanism effects, the ethnic wage gap is likely greater in the public sector than in the private sector. Thus, we propose the fourth hypotheses as:

Hypothesis H_4: *The ethnic wage gap is greater in the public sector than in the private sector.*

Finally, regarding the trend of the ethnic wage gap during the transition period, unlike Russia and other Eastern European countries, China still maintains the leadership of the Communist Party of China (CPC) in the political sphere (Iwasaki 2020b; Ma and Iwasaki 2021; Ma 2022). We considered two directions of the ethnic wage gap trend from the 1980s to the 2020s, which are related to differences in political and governmental governance as follows:

From the 1980s to the 2000s, the Chinese government implemented a set of market-oriented reform policies, such as the opening-up policy, to promote economic reform. Since the 1980s, the government has enforced SOE reform, and most small and medium-sized SOEs became privately owned enterprises (POEs) in the early 2000s. The proportion of employees in the private sector to the total number of workers in urban regions has reached about 80% (NBS of

China 2023). The influence of market mechanisms on the activities of corporations has increased with the advancement of market-oriented reforms (Hare 2019). In a competitive market, companies should determine wage levels based on a worker's productivity, which may reduce unreasonable wage discrimination against ethnic minorities. Therefore, the spread of a market mechanism could lead to a decreasing trend in the ethnic wage gap during this period.

Conversely, from the 2000s to the 2010s, although the government still promoted education and income equality between ethnic minority and Han areas, it has enforced government (or CPC) management in the Chinese economy and society much more than in the past. For example, in 2013, the General Office of the CPC Central Committee issued the *Opinions of the Organization Department of the Central Committee and the Party Committee of the State-owned Assets Supervision and Administration Commission of the State Council on Fully Playing the Political Core Role of the Party Committees of Central-Government Enterprises under the Modern Enterprise System*, which clarified the connotations, requirements, rules, and procedures of CPC committees playing core political roles. Furthermore, in 2015, the General Office of the CPC Central Committee issued *Several Opinions on Adhering to the Party's Leadership and Strengthening Party Building in Deepening the Reform of State-owned Enterprises*, which clearly stated that "it is necessary to adhere to the simultaneous planning of CPC building and the SOE reform and give full leadership and the core political role to the CPC committee in corporations; it should be ensured that the CPC's leadership and party building are fully reflected and effectively strengthened in SOE reforms; it should unify and strengthen the CPC's leadership and help bolster corporate governance, clarifying the legal status of the CPC in SOE governance structures." (Leutert and Eaton 2021; Shen 2021; Duan 2022; Nesbitt-Larking and Chan 2024). The influence of government (or CPC) management in the public sector increased from the 2000s to the 2010s. According to the monopoly hypothesis, when companies have monopoly power, discrimination against disadvantaged groups (e.g., ethnic minorities) in the workplace might arise easily. Ding (2013) reported that ethnicity income gaps expanded in the Ningxia autonomous region from 2006 to 2011.

Based on the above arguments, we test the fifth hypothesis regarding the time trend of the ethnic wage gap during the transition period:

Hypothesis H_5: *The ethnic wage gap exhibits a U-shaped trend during the transition period: it decreased from the 1980s to 2000s, while it increased from the 2000s to 2010s.*

In the following sections, we examine these five hypotheses by performing a meta-analysis of the existing literature.

3 Literature Selection and Outlines of Selected Works for Meta-Analysis

Numerous empirical studies have estimated wage functions to investigate wage determinants in China, and some previous works have employed ethnicity (ethnic minority or Han majority dummy) as an independent variable in their regression estimations. Accordingly, we adopted a policy of searching and selecting literature by collecting as many empirical studies as possible on wages in China and extracting estimates suited to the meta-analysis in this study. More concretely, we used the electronic academic literature databases of EconLit and Web of Science, as well as the websites of leading academic publishers for English language literature[8] and the Chinese National Knowledge Infrastructure database, which is the largest academic literature database in China for Chinese language literature.[9]

We first searched for relevant studies published from 1990 to mid-August 2022. In these databases and websites, we carried out an AND search for article titles using "*China*" and "*wage*" as keywords and only selected the literature published in journals, excluding book chapters, review papers, and discussion papers. In the first stage, we obtained 232 English and 3383 Chinese papers.[10] Next, we closely examined the contents of these studies and selected those that examined ethnicity in a wage function. The papers included in this study were independently selected by two reviewers based on the titles, abstracts, and full texts of all retrieved papers. A double-check process was conducted on the selected literature to ensure accuracy and consistency. As a result, we finally selected 32 and 23 studies in English and Chinese, respectively.[11]

[8] We used the following six publishers: Emerald Insight (https://www.emeraldinsight.com), Sage Journals (http://journals.sagepub.com), Science Direct (http://www.sciencedirect.com), Springer Link (https://link.springer.com), Taylor & Francis Online (https://www.tandfonline.com), and Wiley Online Library (https://onlinelibrary.wiley.com).

[9] In this study we utilized only English and Chinese literature for the following reasons: First, we aimed to conduct a meta-analysis on the issue using international academic journals, where English is the predominant language. Second, as this study focuses on the fact that China and English literature on the issue is limited, we included Chinese literature to ensure comprehensiveness. We did not consider literature in other languages due to our linguistic limitations, which prevented us from evaluating the quality and quantity of such research works.

[10] The final literature search was conducted on August 16, 2022.

[11] A bibliography of the 55 selected studies is available upon request.

A breakdown of the 55 selected works by publication year shows six papers (10.9%) from the 2000s, 27 (49.1%) from the 2010s, and 22 (40.0%) from the 2020s, faithfully reflecting the growth of empirical analysis in Chinese economic studies in the last decade. This implies that the meta-analysis in this study is largely based on empirical evidence generated from advanced econometric analyses in recent years. This is important for pursuing the true effect of ethnicity on wage levels in China during the transitional period.

To test hypotheses H_2, H_3, and H_4 regarding the difference in the ethnic wage gap between men and women, urban and rural regions, and SOEs and POEs, it is essential to have empirical results in which the sex, region, and ownership type of firms are analyzed separately. The selected studies satisfied these requirements.[12] That is, 12 of 55 literature reports estimate an ethnic variable for men and 14 for women; 30 for urban residents, while 8 were limited to estimates for rural regions; similarly, four works focused solely on SOEs and five on POEs. Therefore, although the number of previous studies limiting their research subjects to rural regions or to specific ownership types of companies is small, this would not impede the examination of hypotheses H_3 and H_4 by meta-analysis.

The selected studies are also useful for testing hypotheses H_1 and H_5, which are concerned with the level of the ethnic wage gap during the transition period from the 1980s to the 2020s and its time-series dynamics. This is true because the periods subject to research in these 55 works as a whole cover the 43-year period from 1978 to 2022, and the estimates can be obtained year by year.[13] Since no study of the selected works uses panel data, the vast majority of estimates reported in the literature are empirical results concerning the ethnic wage gap in specific years. This fact is advantageous for testing hypothesis H_5.

From the 55 selected studies, we extracted 472 estimates. The mean (median) of the number of collected estimates per study is 8.6.[14] In order to focus on discrimination against non-*Han* minority ethnicity in terms of wage level, this paper uses the reversed values of the estimates of majority ethnicity (Han) dummy variables together with the estimates of ethnic minority dummy variables. In other words, the meta-analysis in this paper examines the extent

[12] Interaction terms between an ethnic dummy variable and sex, regional, or corporate-sector dummy variable could be subject to meta-analysis, with deleted literature using the interaction terms including the ethnic dummy in this study.

13 However, some variation is apparent by period among the empirical results available for use. In fact, the number of works that have analyzed the ethnic wage gap is 12 for the 1990s, 26 for the 2000s, and 33 for the 2010s.

[14] Estimates of interaction terms of an ethnic dummy variable and other independent variables are not included in the meta-analysis in this study.

to which the wages are lower for ethnic minorities than for the Han in China, *ceteris paribus*.

Further, to correspond to the difference in the units of estimation results in the selected studies, we employed the partial correlation coefficient (PCC) of a corresponding estimate in the meta-analysis. PCC is a measure of the association between a dependent variable and the independent variable in question when other variables are held constant. When t_k and df_k denote the t value and the degree of freedom of the k-th estimate, respectively, the PCC (r_k) is calculated using Eq. (1):

$$r_k = \frac{t_k}{\sqrt{t_k^2 + df_k}}, \quad k = 1, 2, \ldots, K. \qquad (1)$$

Cohen (1988) suggested using as evaluation criteria of the correlation coefficient the values of 0.10, 0.30, and 0.50 as cut-offs to distinguish small, medium, and large effects, respectively. However, these criteria are set with zero-order correlation, which is a correlation coefficient with no control variables. This is somewhat strict in economics research, in which a large number of control variables are usually employed in empirical studies. Therefore, Doucouliagos (2011) proposed 0.048, 0.112, and 0.234 as the lowest thresholds of small, medium, and large effects, respectively, as the new general standard in labor economics research (ibid., Tables 3, 11). In this study, we evaluated the ethnic wage gap in China in accordance with this standard.

4 Meta-Synthesis

A meta-analysis ordinarily consists of three steps: (1) meta-synthesis of the collected estimates, (2) MRA of heterogeneity among the literature, and (3) testing for publication selection bias (Iwasaki 2020a). We follow this standard procedure to examine the hypotheses regarding the ethnic wage gap in China. Accordingly, in this section, as the first step of the meta-analysis, we synthesized 472 collected estimates using their PCCs after observing their distribution.

Table 1 shows the descriptive statistics of the PCCs of the collected estimates and the results of the *t* test and Shapiro–Wilk normality test. To match the five hypotheses proposed in Section 2, they are presented not only for all studies but also for cases in which the collected estimates are divided by sex, target region, corporate sector, and period. As described in the preceding section, in the meta-analysis, the reversed values of the estimates of the ethnic majority dummy variable (i.e., dummy for Han workers) are used together with the estimates of the ethnic minority dummy variables.

According to **Table 1**, in general, the mean and median of the PCCs for all studies are

negative values, suggesting that the vast majority of empirical results in the selected literature have reported an ethnic wage gap disadvantageous to ethnic minorities in China.

Moreover, according to the Doucouliagos standard mentioned above, these 472 estimates show a statistically significant, but small-scale ethnicity effect on wages. In sum, most of the collected estimates suggest that, in China, the effect size of ethnicity on wages does exist but is small, which is in line with hypothesis H_1.

As seen in **Table 1**, the mean and median of the PCCs by sex and target corporate sector also support hypotheses H_2 and H_4. In fact, estimates related to the ethnic wage gap in female workers and workers in POEs are larger than those for male workers and workers in SOEs. Similarly, a difference is apparent in period. The negative values of estimates decrease from the 1990s to the 2000s, while they increased in the 2010s, suggesting that there is likely a U-shaped change during the transition period. This is consistent with hypothesis H_5. On the contrary, there is not a large difference in the estimates of PCCs between rural and urban regions.

Table 2 reports the meta-synthesis results. In this table, together with synthesis results using the fixed-effect model and the random-effects model, synthesis was conducted using the unrestricted weighted least squares average (UWA) method, which is less subject to influence from excess heterogeneity than the fixed-effect model and has less publication selection bias than the random-effects model, and UWA synthesis of estimation results with statistical power of more than 0.80—that is, the weighted average of the adequately powered (WAAP) synthesis (Stanley and Doucouliagos 2017; Stanley, Doucouliagos, and Ioannidis 2017). Similar to the case of **Table 1**, **Table 2** also provides results specialized for each hypothesis. In each case, Cochran *Q* test of homogeneity rejects the null hypothesis at the 1% significance level, and the I^2 and H^2 statistics also suggest the presence of heterogeneity in Column (b) of this table. In Column (a), the estimates of the random-effects model are adopted as reference values of the synthesized effect size; under the new UWA synthesis method, in Column (c) of **Table 2**, WAAP synthesis values, considered more reliable, are used as reference values for comparison with those generated by the random-effects model.

In the results of all studies, the random-effects model produced a synthesis value of -0.013, while the WAAP estimation yielded a value of -0.020. According to the Doucouliagos standard, both the former and the latter show that the wage effect of ethnicity in China was small throughout the transition period, which supports hypothesis H_1.

The synthesis results in **Table 2** also support hypotheses H_2, H_3, and H_4; the results are consistent with the conclusions from **Table 1**. In fact, both random-effects synthesis values

indicate that the negative effect size of ethnicity on wage levels is greater among female workers in rural regions and SOEs than among male workers in urban regions and POEs. The differences between regions and corporate sectors are noteworthy for understanding the mechanism of wage determination in China.

Furthermore, when we compare the magnitude of the synthesized effect size in the three periods, a U-shaped change trend is observed from the 1990s to the 2010s, as hypothesis H_5 predicts.

5 Meta-Regression Analysis

While the meta-synthesis in the previous section carried out explicit hypothesis testing by providing a point estimate of the wage effect of ethnicity as a synthesized effect size, it has the drawback of largely excluding heterogeneity within the literature. Accordingly, this section verifies the reliability of the synthesis results by estimating an MRA model that simultaneously controls for various study conditions among the selected studies. More specifically, we estimate a meta-regression model in the form of:

$$y_k = \beta_0 + \sum_{n=1}^{N} \beta_n x_{kn} + e_k\,, \qquad k = 1, \cdots, K, \qquad (2)$$

where y_k is the PCC (i.e., r_k) of the k-th estimate, β_0 is a constant, x_{kn} denotes a meta-independent variable that captures the relevant characteristics of an empirical study and explains its systematic variation from other empirical results in the literature, β_n denotes the MRA coefficient to be estimated, and e_k is the MRA disturbance term.

As Iwasaki, Ma, and Mizobata (2020) point out, there is no clear consensus among meta-analysts about the best model for estimating Eq. (2). Hence, following Iwasaki, Ma, and Mizobata (2020) and Brada, Drabek, and Iwasaki (2021), to check the statistical robustness of coefficient β_n, we perform an MRA using the following six estimators: (1) the cluster-robust weighted least squares (WLS), which clusters the collected estimates by study, computes robust standard errors, and is weighted by the inverse of the standard error (1/*SE*) as a measure of estimate precision; (2) the cluster-robust WLS weighted by the degrees of freedom (*df*) to account for sample-size differences among the studies; (3) the cluster-robust WLS weighted by the inverse of the number of estimates in each study (1/*EST*) to avoid domination of the results by studies with large numbers of estimates; (4) the multilevel mixed-effects RLM estimator; (5) the cluster-robust random-effects panel GLS estimator; and (6) the cluster-robust fixed-effects panel LSDV estimator. We report either a random-effects model or a fixed-effects model

according to the Hausman test of model specification.

The right-hand side of Eq. (2), in addition to the focused research attributes consisting of gender, target region, corporate sector, and period, introduces a series of variables to capture the differences in survey data, definition of wage variable, estimator, presence of control for selection bias, selection of control variables, presence of an interaction term(s), and standard error of PCC, which may also significantly affect the estimation results in the selected studies.[15] **Table 3** presents the names, definitions, and descriptive statistics of these meta-independent variables.

As Havranek and Sokolova (2020) and Zigraiova et al. (2021) argued, MRA involves the issue of model uncertainty, in the sense that the true model cannot be identified in advance. In addition, there is a high risk that the simultaneous estimation of multiple independent variables could lead to multicollinearity. Accordingly, we estimated the posterior inclusion probability (PIP) and *t* value of each meta-independent variable other than the variables needed for hypothesis testing and the standard error of PCCs using the Bayesian model averaging (BMA) estimator and the weighted-average least squares (WALS) estimator, respectively, adopting a policy of employing variables for which the estimates have a PIP of 0.50 or more in the BMA analysis and a *t* value of 1.00 or more in the WALS estimation as selected moderators in Eq. (2). As a result, we adopt three variables—other household surveys, working experience/tenure, and industry fixed effects—as selected moderators.[16]

Table 4 reports the estimation results for the selected moderators.[17] As shown in this table, the signs and statistical significance of some meta-independent variables vary significantly with the choice of estimator. Thus, assuming that meta-independent variables that are statistically significant and have the same sign in at least three of the five models constitute statistically robust estimation results, we test hypotheses H_2 to H_5.

As shown in **Table 4**, the estimation results of Eq. (2) indicate that there are differences in the ethnic wage gap in gender, corporate sector, and period, and this finding is robust even after controlling for a series of study conditions, from the type of survey data to the standard

[15] While education is the most important determinant affecting wage levels, since nearly all of the selected studies controlled for these factors in their empirical analyses, the influences of these factors were not considered in the MRA.

[16] The BMA and WALS estimation results are reported in **Appendix Table A1**. Here, the variables needed for hypothesis testing are handled as focus regressors, while the remaining meta-independent variables are treated as auxiliary regressors. Moderator selection was done for the latter group of variables.

[17] The estimation results using all moderators are reported in **Appendix Table A2** for reference.

errors.

In fact, as compared to the gender-unspecified group, the male variable is estimated with a significant and positive coefficient in the three models, while it is not significant for the female variable. This result suggests that, when all other conditions are constant, the ethnic wage gap is greater among the female worker group than the male worker group.

Furthermore, as compared to the corporate sector unspecified group, the public-sector variable is estimated to have a significant and negative coefficient in the three models, while all estimates are insignificant for the private sector variable. This suggests that the ethnic wage gap is greater in the public sector than in the private sector.

In addition, variables of both the 2000s and 2010s are estimated with a significant and positive coefficient in the five and four models, respectively, and the coefficient for the period of the 2000s always exceeds that for the 2010s. The magnitude of the positive value is greater for the 2000s than that for the 2010s, suggesting that the ethnic wage gap decreased significantly during the period of 1980–2000; however, the range of decrease in the wage gap became smaller during the period of 2000–2010. Overall, there exists a U-shaped change from the 1980–2010 period, and the ethnic wage gap tends to grow larger in the current period as compared with the 2000s.

In other words, the above results strongly support hypotheses H_2, H_4, and H_5, which are also consistent with the findings obtained in **Table 1** and **Table 2**. With regard to hypothesis H_3, all of the target region variables are estimated to be statistically insignificant in **Table 4** and, consequently, our prediction of the difference in the effect size of ethnicity on wages between rural and urban regions is not verified in the MRA. This result is consistent with **Table 1** but not **Table 2**.

6 Testing for Publication Selection Bias

As seen above, the results of both meta-synthesis and MRA support the majority of the hypotheses presented in Section 2. However, the reliability of these test results cannot be established if the selected studies do not contain genuine evidence because of publication selection bias. Publication selection bias occurs when researchers, reviewers, and editors are inclined to publish research results that are consistent with the conventional view and are statistically significant; consequently, an effect in question tends to be overvalued in the research record (Iwasaki 2020a, 2020b). Stanley and Doucouliagos (2012, p. 52) pointed out that “the real problem of publication selection is not its existence, but the large biases that it

can impact upon any summary of empirical economic knowledge, when uncorrected." Therefore, this issue should be addressed as an important mission of the meta-analysis.

Accordingly, in this section, we tested for publication selection bias and the presence of the true effect. To this end, in addition to visual examination using a funnel plot, we conducted a funnel asymmetry test (FAT), a precision-effect test (PET), and a precision-effect estimate with standard error (PEESE), which were proposed by Stanley and Doucouliagos (2012) and have been widely used in previous meta-analyses.

The FAT–PET–PEESE procedure has been developed to test publication selection bias and the presence of genuine evidence in a more rigid manner and can be performed by regressing the *t* value of the *k*-th estimate on the inverse of the standard error (1/*SE*) using Eq. (3). Thereby, we can test the null hypothesis that the intercept term γ_0 is equal to zero:

$$t_k = \gamma_0 + \gamma_1(1/SE_k) + v_k, \qquad (3)$$

where v_k denotes the error term. When the intercept term γ_0 is statistically significantly different from zero, we can interpret the distribution of the effect sizes as asymmetric.

Even if there is a publication selection bias, a genuine effect may exist in the available empirical evidence. Stanley and Doucouliagos (2012) proposed examining this possibility by testing the null hypothesis that coefficient γ_1 is equal to zero in Eq. (3). Rejection of the null hypothesis implies genuine empirical evidence. γ_1 is the coefficient of precision and is, therefore, referred to as PET.

Stanley and Doucouliagos (2012) also stated that an estimate of the publication selection–adjusted effect size can be obtained by estimating Eq. (4), which has no intercept. If the null hypothesis of $\gamma_1 = 0$ is rejected, then a nonzero true effect exists in the literature, and the coefficient γ_1 can be regarded as its estimate.

$$t_k = \gamma_0 SE_k + \gamma_1(1/SE_k) + v_k. \qquad (4)$$

Equation (4) expresses the PEESE approach. It can be observed that coefficient γ_1 may become the estimate of the publication selection bias–adjusted effect size in light of the fact that Eq. (5) is obtained when both sides of Eq. (4) are multiplied by the standard error.

$$\text{Effect size}_k = \gamma_0 SE_k^2 + \gamma_1 + w_k. \qquad (5)$$

When directly estimating Eq. (5), the WLS method with $1/SE_k^2$ as the analytical weight should be used.

To test the robustness of the regression coefficients obtained from the above FAT–PET–PEESE procedure, we estimate Eq. (4) and Eq. (5) using not only the unrestricted WLS

estimator, but also the WLS estimator with bootstrapped standard errors, cluster-robust WLS estimator, and unbalanced panel estimator for a robustness check. In addition to these four models, we also run an instrumental variable (IV) estimation with the inverse of the square root of the number of observations used as an instrument of the standard error because "the standard error can be endogenous if some method choices affect both the estimate and standard error. Moreover, the standard error is estimated, which causes attenuation bias in meta-analysis" (Cazachevici, Havranek, and Horvath 2020).

Furthermore, in recent years, some advanced techniques for estimating the publication selection bias–corrected effect size that are comparable to the PEESE approach have been developed (Horie et al. 2024). These include the "Top 10" approach, proposed by Stanley, Jarrell, and Doucouliagos (2010), who discovered that discarding 90% of the published findings greatly reduces publication selection bias and is often more efficient than conventional summary statistics; the selection model, developed by Andrews and Kasy (2019), which tests for publication selection bias using the conditional probability of publication as a function of a study's results; the endogenous kink model, innovated by Bom and Rachinger (2019), which presents a piecewise linear meta-regression of estimates of their standard errors with a kink at the cutoff value of the standard error below which publication selection is unlikely; and the *p*-uniform method, introduced by van Aert and van Assen (2012), which is grounded on the statistical theory that the distribution of *p* values is uniform, conditional on the population effect size. In this study, we apply these four techniques to provide alternative estimates of the publication selection bias–corrected effect size and compare them with the PEESE estimates for a robustness check.

Figure 1 shows the funnel plot of all studies. The collected estimates show a skewed distribution toward the negative side, leading to suspicions that there is likely a publication selection bias in the literature. However, if we assume that the WAAP synthesis value presents the true effect size, there is no strong publication selection bias in this research field.

The results of the FAT–PET–PEESE test are presented in **Table 5**. In Panel (a) of the table, FAT cannot reject the null hypothesis that the intercept (γ_0) is zero for all five models. This result implies that publication selection bias is unlikely in the collected estimates. The PET results in Panel (a) reject the null hypothesis that the coefficient (γ_1) of the inverse of the standard error ($1/SE$) is zero in all five models, suggesting that the collected estimates contain empirical evidence regarding the true effect size. Accordingly, looking at the results of the PEESE approach as reported in Panel (b) of the table, we confirm that, in all five models, the coefficients (γ_1) of $1/SE$ are estimated to be statistically significant and, therefore, the true value

of the ethnic wage effect in China should be in the range of -0.0162 to -0.0168. The value of this publication selection bias–adjusted effect size is closer to the WAAP synthesis value (-0.020) than the random-effects value (-0.013). This result agrees with the argument by Stanley et al. (2017) that, compared with the traditional synthesis method, the WAAP method is much more robust to publication selection bias.

From these results, we conclude that, while an ethnic wage gap exists in China, in accordance with the Doucouliagos standard, the ethnicity effect on wages has remained negligible throughout the transition period. In other words, as the synthesis result based on the WAAP method does, the test results of publication selection bias and the presence of genuine empirical evidence strongly support hypothesis H_1.

Table 6 presents the results of alternative estimation of a genuine effect beyond publication selection bias. All four models in the table successfully generated a statistically significant publication selection bias–corrected effect size with a negative sign; therefore, the results are highly consistent with the findings obtained in **Table 4**. In other words, hypothesis H_1 is strongly supported by advanced meta-analytic techniques as well as the FAT–PET–PEESE approach.

Finally, we attempted to carry out FAT–PET–PEESE procedures separately by target gender, region, corporate sector, and period. These additional test results are shown in **Table 7**, along with those reported in **Table 5**. The main findings from the table are summarized in the next four points:

First, regarding the difference in the effect size of ethnicity on wages between male and female workers, we cannot test hypothesis H_2 because of the absence of genuine empirical evidence. The PET–PEESE procedure fails to reject the null hypothesis in these two cases.

Second, with respect to the difference between urban and rural regions, the results in **Table 7** show that the collected estimates do contain evidence of a nonzero true effect size of ethnicity on wages both in urban and rural regions. Moreover, they prove that the wage gap between Han workers and non-Han workers in rural regions tends to exceed that in urban regions, which is in line with hypothesis H_3.

Third, the PET–PEESE procedure indicates the absence of genuine evidence of a nonzero ethnicity effect on wages in the private sector. This result corresponds well with the meta-synthesis result in **Table 2**, indicating that the ethnic wage gap in the private sector is likely to be zero or very close to zero. Concerning the public sector, we confirm from **Table 7** that the ethnic wage gap does exist and ranges between -0.0627 and -0.0222. Based on these findings, we conjecture that the test results of publication selection bias support hypothesis H_4.

Finally, regarding the time-series dynamics of the ethnic wage gap, PET–PEESE results reveal genuine empirical evidence in all three periods and, more importantly, clearly indicate a downward trend from the 1980s to the 2000s and an upward trend from the 2000s to the 2010s. This is in line with hypothesis H_5 of the U-shaped change in the ethnic wage gap during the transition period.

In summary, a series of tests for publication selection bias conducted in this section provide evidence in support of all of our predictions, with the exception of hypothesis H_2.

7 Discussion

7.1 Novel Findings of This Study

The meta-synthesis, MRA, and FAT–PET–PEESE test results indicate that H_1 to H_5 are supported in most models, with H_1, H_4, and H_5 significantly supported. These new findings enrich our understanding of the ethnic wage gap in several ways. Our results show that, although the ethnic wage gap in China is statistically significant and economically meaningful, it remains at a low level, as predicted by H_1. As compared to developed countries (Carneiro, Heckman, and Masterov 2005; Carlsson and Ross 2016), the effect size of ethnicity on wage levels in China during the transition period is relatively small. Future research could use appropriate survey data and quasi-experimental design methods (e.g., difference-in-differences and propensity score matching) to explore the causal relationship between ethnic equality policies and the ethnic wage gap.

Furthermore, the results indicate that the ethnic wage gap significantly varies among heterogeneous groups (e.g., gender, urban/rural regions, and corporate ownership sector groups). The wage gap is greater for women, workers in rural regions, and the public sector than for their counterparts, as predicted by H_2 to H_4. Specifically, we argue several key points.

First, the meta-synthesis, MRA, and FAT–PET–PEESE test results show that the ethnic wage gap is greater in the public sector than in the private sector. This indicates that the influence of the monopoly discrimination effect (Hirsch 2010) might be greater than that of government equity policy and market mechanism effects. As the Chinese government has continued to provide financial and policy support to SOEs, the Chinese labor market has been segmented into public and private sectors (Démurger et al. 2012; Xia et al. 2014; Jiang and Kim 2020; Lin et al. 2020). Consequently, monopoly power is greater in the public sector than in the private sector, which may lead to differences between the ethnic wage gap of the two sectors. Our results suggest that the privatization of SOEs may contribute to the decline of the

monopoly power of SOEs, leading to a reduction in the ethnic wage gap. Becker (1957) states that market competition reduces discrimination in the labor market, which may reduce wage gaps. Our findings support the hypothesis of Becker (1957) from a market liberalization perspective.

Second, the results of the meta-synthesis and MRA show that the ethnic wage gap is greater for women than for men. This result is consistent with the findings of Campos et al. (2016). Using longitudinal survey data from the China Health and Nutrition Survey from 1993 to 2011, Campos et al. (2016) found that the mean ethnic annual income gap in the female group (2327 yuan) was greater than that in the male group (1888 yuan). This suggests that the ethnic disparity in wage setting or managerial promotion among women might be greater than that among men. In fact, Yu and Yang (2021) and Xu and Wang (2022) found that the proportion of female managers among the Han was larger than that among ethnic minorities. Additionally, as most ethnic minority workers come from (or live in) rural areas, the influence of gender role division in rural areas is greater than that in urban areas (Cheng 2011; Hu, Ren, and Song 2021; Wu, Zhou, and Qin 2022; Ma 2024). Thus, the discrimination against women among ethnic minority workers might be much more severe than that among Han workers, leading to disparities in the ethnic wage gap by gender.

Third, the meta-synthesis and FAT–PET–PEESE test results indicate that the ethnic wage gap is greater in rural regions than in urban regions. This difference may be attributed to the varying influences of government ethnic equality policies on TVEs in rural areas and SOEs in urban areas. Since the 1990s, most TVEs have switched from collective ownership to private ownership (Minami and Ma 2010; Lin et al. 2020). The influence of ethnic equality policies on privatized TVEs might be limited as compared to their effect on SOEs, which may lead to regional (rural/urban) disparities in the ethnic wage gap.

Last, the meta-analysis results demonstrate the persistence of a U-shaped trend from the 1980s to the 2010s. Specifically, the ethnic wage gap in the 2010s was approximately 200% of that in the 2000s. Our results support the findings of Ding (2013), who report that ethnic income gaps have expanded in the Ningxia autonomous region from 2006 to 2011. We consider two reasons for the wider ethnic wage gap in the recent period. The first reason is related to labor policy compliance issues. Ke (2021) indicates that, as compared to SOEs, non-SOEs are more likely to lose employment lawsuits because the rule of law within non-SOEs is rarely established. Ma and Cheng (2019) demonstrate that compliance to social insurance policies of the public and private sectors varies. While the Chinese government has published several new policies to promote ethnic equality, non-SOEs have become less compliant with employment

equality policy in the recent period, potentially widening the overall ethnic wage gap. Second, since 2012, the Xi Jinping regime has strengthened the leadership of the CPC and SOEs' position in the national economy, expanded government financial assistance, and provided more policy support to SOEs (Leutert and Eaton 2021; Shen 2021; Duan 2022; Nesbitt-Larking and Chan 2024). These policies might enhance the monopoly power of SOEs moving forward. According to the monopoly hypothesis (Becker 1957; Hirsch 2010), discrimination against disadvantaged groups (e.g., ethnic minority workers) may arise in workplaces with significant monopoly power.

7.2 Limitations of This Study and Challenges in Future Research

There are limitations in the meta-analysis, and some issues should be further studied in the future, as follows: First is the selection of variables in the empirical study. Our meta-regression analysis results show that with the exception of gender, rural/urban region, public/private sector, and time trend, other explanatory variables (e.g., work experience/tenure, industrial sector) significantly affect the empirical results. Therefore, these observable factors should be carefully accounted for in future research. However, with the exception of these observable factors, some unobservable factors—including discrimination against ethnic minority workers, personality traits, and social norms[18]—may contribute to the ethnic wage gap. These unobservable factors also should be considered in future research.

The second issue is the limited samples. For example, this study first challenged the issue of disparities in the ethnic wage gap by various groups (e.g., gender, rural/urban region, public/private sector) and time periods by using all of the literature on the issue possible, which is the unique benefits of the meta-analysis, as the meta-analysis is based on the existing literature and the research targeting the subgroups are scarce, which may affect the robustness of the hypothesis testing results. Future research based on more studies to re-test the five hypotheses is a new challenge. Additionally, empirical studies utilizing individual/household survey data or employee–employer matched data can offer more evidence on disparities in the ethnic wage gap across heterogeneous groups (e.g., by gender, education level, and age group).

Third, international comparative studies on this issue should be explored further. Our findings suggest that an ethnic wage gap, which varies by gender, persists in China. However, there is limited empirical evidence on gender disparities in the ethnic wage gap in other

[18] Several studies have demonstrated that individual personality, social norm, risk aversion, and comparative preferences significantly affect the wage gap (Blau and Kahn 2017; Kamal and Blacklow 2022; Laible and Brenzel 2022), while evidence in the Chinese context is scarce (Ma 2024).

developing and developed countries. Factors such as demographic characteristics and national-level elements—including economic development, government policies, and national culture—may influence both the gender gap and the ethnic wage gap (Adsera and Chiswick 2007; Simón 2012; Blau and Kahn 2017). Therefore, future international comparative studies across developing and developed countries are needed to further investigate the determinants of wage gaps from both individual/household and national perspectives.

Fourth, based on economics theories, two mechanisms can be considered in the ethnic wage gap. The first one is the ethnic disparities in endowment factors, such as human capital. According to the human capital theory (Becker 1964), disparities in human capital between ethnic groups may contribute to the wage gap. For example, Trejo (1997) and Ridala and Toomet (2019) demonstrate that differences in language proficiency, cognitive skills, and educational attainment persist between ethnic groups. When ethnic minorities possess fewer of these skills or educational qualifications as compared to the ethnic majority, an ethnic wage gap may arise. The second mechanism is discrimination in the labor market. According to the taste-based discrimination theory (Becker 1957), employers may offer higher wages to ethnic majority workers than to ethnic minority workers, even when the latter possess similar levels of human capital or exhibit labor productivity equal to that of their majority counterparts.

A few studies have investigated the mechanisms of the formation of the ethnic wage gap by distinguishing between ethnic disparities in endowment factors and returns to these endowment factors separately (e.g., Gustafsson and Li 2003; Leping and Toomet 2008). As empirical evidence on mechanism analysis is limited in the existing literature, particularly for developing and emerging economies, including China, we were unable to conduct a detailed analysis of mechanisms using the meta-analysis approach. Conducting a meta-analysis of mechanisms presents a new challenge that requires more decomposition-based empirical studies on this issue.

Last, with institutional transformations in developing and emerging market economies, new policies—such as labor contract laws, immigration regulations, and equal employment opportunity policies—may influence the ethnic wage gap. Further research is needed to address the causal relationship between policy implementation and changes in the ethnic wage gap.

8 Conclusions

In this study, to test five hypotheses on the China's ethnic wage gap during its transition period, we first conducted a meta-analysis that utilized 472 estimates extracted from 55 previous

studies in English and Chinese from 1978 to 2022. The majority of empirical results support the five hypotheses. Specifically, although the ethnic wage gap in China has exhibited a statistically significant impact during the economic transition period, the impact remains low based on the meta-analysis standard. We find disparities in the ethnic wage gaps of different groups. The gap is more significant among female workers, rural regions, and in the public sector than among their counterparts. Furthermore, the ethnic wage gap has exhibited a U-shaped trend during the transition period (a term from 1978 to 2022 in this study). These novel findings significantly contribute to the existing literature by comprehensively analyzing the Chinese ethnic wage gap during the economic transition period.

Based on these new findings, we consider three policy implications as follows: First, during the market-oriented reform period, the ethnic wage gap in China remains at a low level as compared to that in developed countries (Carneiro, Heckman, and Masterov 2005; Carlsson and Ross 2016). This indicates that, unlike in other developing and developed countries, the influences of socialist equal ideology and policies are maintained in Chinese workplaces, even during the market-oriented reform period. In other words, the Chinese experience suggests that the impact of comprehensive ethnic equality policies, enforced by governments, might help reduce the ethnic wage gap in other countries.

Second, as the Chinese government promoted the economic transition from a planned system to a market-oriented economy, the income inequality has expanded remarkably during this period and has become a severe economic and social problem (Li et al. 2017; Sicular 2020). In 2021, the Chinese government introduced a common prosperity goal. Our results indicate that there remains a significant ethnic wage gap in China during the transition period. Our findings indicate that the ethnic wage gap has widened significantly in recent years (especially from the 2000s to the 2010s). Our results also indicate that there remain larger ethnic wage gaps in developed countries as compared to China (Hirsch 2014; Piazzalunga 2015; Lozano and Cheng 2016; Tverdostup and Paas 2019; Ingwersen and Thomsen 2021). The greater ethnic wage gap could be a major impediment to achieving income equality (SDG 10). The policies leading to declining ethnic wage gaps, such as equal employment opportunity policies, are expected to reduce the nationwide income inequality in China and other countries.

Third, we found that the ethnic wage gap differs by corporate sector: the ethnic wage gap is more pronounced in the public sector than in its counterpart (the private sector). The results support the hypothesis of Becker (1957): market competition reduces discriminations in labor markets, leading to a reduction in wage gaps. With the exception of China, other emerging economies, such as Vietnam and Russia, are also reforming SOEs (Woo 1994; O'Toole et al.

2016). To reduce income inequality (SDG 10), these emerging economies should enforce the privatization of SOEs to further promote market liberalization reforms.

Last, to maintain sustainable growth and the development of the Chinese economy from a long-term perspective, the government should implement appropriate policies to reduce the ethnic gap in education, such as policies that promote both compulsory and higher education in ethnic minority areas. Moreover, the regional development policies targeting ethnic minority areas are expected to reduce the regional disparities in economic development levels, which may also contribute to reducing the ethnic wage gap.

References

Adsera, A., and B. R. Chiswick. 2007. Are There Gender and Country of Origin Differences in Immigrant Labor Market Outcomes across European Destinations? *Journal of Population Economics*, 20 (3): 495–526.

Andrews, I., and M. Kasy. 2019. Identification of and Correction for Publication Bias. *American Economic Review*, 109 (8): 2766–2794.

Bajzik, J., T. Havranek, Z. Irsova, and J. Schwarz. 2020. Estimating the Armington Elasticity: The Importance of Study Design and Publication Bias. *Journal of International Economics* 127:103383.

Becker, G. S. 1957.*The Economics of Discrimination*. University of Chicago Press: Chicago.

Becker, G. S. 1964. *Human Capital: A Theoretical and Empirical Analysis, With Special Reference to Education*. 1st Edition, Columbia University Press: New York.

Blau, F. D., and L. M. Kahn. 2017. The Gender Wage Gap: Extent, Trends, and Explanations. *Journal of Economic Literature*, 55(3): 789–865.

Blinder, A. S. 1973. Wage Discrimination: Reduced form and Structural Estimation. *Journal of Human Resources*, 8(4): 436–455.

Bom, P. R. D., and H. Rachinger. 2019. A Kinked Meta-Regression Model for Publication Bias Correction. *Research Synthesis Methods,*10(4): 497–514.

Borbely, D., and R. Mckenzie. 2024. Forced Migration and Local Economic Development: Evidence from Postwar Hungary. *Journal of Development Economics*, 171, 103355.

Bormann, S. K., S. Ridala, and O. S. Toomet. 2019. Language Skills in an Ethnically Segmented Labour Market: Estonia 1989–2012. *International Journal of Manpower*, 40(2): 304–327.

Brada, J. C., Z. Drabek, and I. Iwasaki. 2021. Does Investor Protection Increase Foreign Direct Investment? A Meta-Analysis. *Journal of Economic Surveys*, 35(1): 34-70.

Cai, F. 2016. *China's Economic Growth Prospects: From Demographic Divided to Reform Divided*. Beijing: Social Sciences Academic Press.

Campos, B., Y. Ren, and M. Petrick. 2016. The Impact of Education on Income Inequality between Ethnic Minorities and Han in China. *China Economic Review*, 41: 253–261.

Carlsson, M, and D. O. Ross. 2016. Employment Attitudes, The Marginal Employer, and The Ethnic Wage Gap. *ILR Review*, 69(1): 227–252.

Carneiro, P., J. J. Heckman, and D. V. Masterov 2005. Labor Market Discrimination and Racial Differences in Premarket Factors. *Journal of Law & Economics*, 48(1): 1–39.

Cazachevici, A., T. Havranek, and R. Horvath. 2020. Remittances and Economic Growth: A Meta-Analysis. *World Development,* 134:105021.

Cheng, T. 2011. The Determinants of Gender Role Consciousness of Chinese Women in Rural Regions: An Empirical Study Based on Chinese General Survey. *Collection of Women's Studies,* 103(1):17–22. (In Chinese).

Chen, L. 2019. Review and Prospect of Research on the Policy of Minority College Entrance Examination Bonus. *Education and Examinations*, 3: 10–15. (In Chinese).

Cohen, J. 1988. *Statistical Power Analysis for the Behavioral Sciences*. 2nd edition, Lawrence Erlbaum Associates: Hillsdale.

Dai, D. 2016. A Review of Literature on the Income Distribution Gap of Residents of Different Ethnic Groups in China. *Travel Together* 12: 399. (In Chinese).

Démurger, S., S. Li, and J. Yang, 2012. Earning Differentials between the Public and Private Sectors in China: Exploring Changes for Urban Local Residents in the 2002s. *China Economic Review*, 23 (1): 138-153.

Ding, S. 2012. *Research on the Issues of Labor Migration of Ethnic Minorities in Western Rural Areas Based on Rural Survey Data in Ethnic Regions*. Beijing: China Social Science Publishing House. (In Chinese).

Ding, S. 2015. The Ethnic Difference of the Income Distribution and Its Change in Ningxia Hui Autonomous Region. *Ethno-Nation Studies*, 3: 39–51. (In Chinese).

Ding, S., K. Li, and B. Gustafsson.2015. The Income Gap between Different Ethnic Groups in Western Ethnic Rural Areas and the Reasons. *Journal of Minzu University of China* (*Philosophy and Social Sciences Edition*), 42(4): 36–43. (In Chinese).

Doucouliagos, H. 2011. How Large is Large? Preliminary and Relative Guidelines for Interpreting Partial Correlations in Economics. *School Working Paper No. SWP 2011/5*, School of Accounting, Economics and Finance, Faculty of Business and Law, Deakin University: Melbourne.

Duan Q. 2022. Reform, Development and Perfection of Party Leadership System in State-Owned Enterprises. *Modern SOE Research*, 4: 50–54. (In Chinese).

Fernandes, A. 2017. Is the Brazilian Tale of Peaceful Racial Coexistence True? Some Evidence from School Segregation and the Huge Racial Gap in the Largest Brazilian City. *World Development*, 98: 179–194.

Gustafsson, B., and S. Li. 2000. Economic Transformation and the Gender Earnings Gap in Urban China. *Journal of Population Economics*, 13(2): 305–329.

Gustafsson, B., and S. Li. 2003. The Ethnic Minority-Majority Income Gap in Rural China During Transition. *Economic Development and Cultural Change*, 51(4): 805–822.

Gustafsson, B., and X. Yang. 2017. Earnings among Nine Ethnic Minorities and the Han Majority in China's Cities. *Journal of the Asia Pacific Economy*, 22(3): 525–546.

Haider, L., J., W. J. Boonstra, G. D. Peterson, and M. Schlüter. 2018. Traps and Sustainable Development in Rural Areas: A Review. *World Development*, 101: 311–321.

Hare, D. 2019. Decomposing Growth in the Gender Wage Gap in Urban China: 1989-2011. *Economics of Transition and Institutional Change*, 27(4): 915–941.

Havránek, T., T. D. Stanley, H. Doucouliagos, P. Bom, J. Geyer-Klingeberg, I. Iwasaki, W. Robert Reed, K. Rost, and R. C. M. van Aert. 2020. Reporting Guidelines for Meta-Analysis in Economics. *Journal of Economic Surveys*, 34 83): 469–475.

Havranek, T., and A. Sokolova. 2020. Do Consumers Really Follow a Rule of Thumb? Three Thousand

Estimates from 144 Studies Say "Probably Not". *Review of Economic Dynamics*, 35: 97–122.

Hirsch, B. T. 2014. An Anatomy of Racial and Ethnic Trends in Male Earnings in U.S. *Review of Income and Wealth*, 60(4): 930-947.

Hirsch, B. 2010. *Spatial Monopsony and the Gender Pay Gap*. Springer, Heidelberg Dordrecht London New York.

Horie, N., I. Iwasaki, O. Kupets, X. Ma, S. Mizobata, and M. Satogami. 2024. Wage–Experience Profiles in China and Eastern Europe: A Large Meta-Analysis. *Journal of Economic Surveys*. (Early View: https://doi.org/10.1111/joes.12605)

Hu, R., Z. Ren, and A. Song. 2021. Gender Consciousness and Political Efficacy of Minority women. *Journal of Shandong Women' University*, 6: 1–9. (In Chinese).

Ingwersen, K., and S. L. Thomsen. 2021. The Immigrant-Native Wage Gap in Germany Revisited. *Journal of Economic Inequality*, 19(4): 825–854.

Iwasaki, I. 2020a. Meta-Analysis of Emerging Markets and Economies: An Introductory Note for the Special Issue. *Emerging Markets Finance & Trade*, 56(1): 1–9.

Iwasaki, I. 2020b. *The Economics of Transition: Developing and Reforming Emerging Economies*. Routledge: Abingdon and New York.

Iwasaki, I. 2022. The Finance-Growth Nexus in Latin America and the Caribbean: A meta-Analytic Perspective. *World Development*, 149: 105692.

Iwasaki, I., and X. Ma. 2020. Gender Wage Gap in China: A Large Meta-Analysis. *Journal for Labor Market Research*, 2020(54): 17.

Iwasaki, I., X. Ma, and S. Mizobata. 2020. Corporate Ownership and Managerial Turnover in China and Eastern Europe: A Comparative Meta-Analysis. *Journal of Economics and Business*, 111: 105928.

Jiang, F., and K. A. Kim. 2020. Corporate Governance in China: A Survey. *Review of Finance*, 24(4):733–773.

Jiang, X., and J. Gao. 2021. Analysis on the Employment Policy of Ethnic Minority Higher Education. *Journal of Yanbian Institute of Education*, 35(4): 141–143. (In Chinese).

Kamal, M., and P. Blacklow. 2022. Attitudes and Personality in the Australian Gender Wage Gap. *Applied Economics*, 54(47): 5442–5459.

Ke, Z. 2021. Company Ownership Structure, Legal Compliance and the Probability of Winning an Employment Lawsuit in China. *Asian Journal of Law and Economics*, 12(3): 269–286.

Kornai, J. 1980. *Economics of Shortage*. Amsterdam: North-holland Publishing Company.

Laible, M. C., and H. Brenzel. 2022. Does Personality Matter? Noncognitive Skills and the Male Migrant Wage Gap in Germany. *International Migration Review*, 56(2): 376–409.

Leping, K.O., and O. Toomet. 2008. Emerging Ethnic Wage Gap: Estonia During Political and Economic Transition. *Journal of Comparative Economics*, 36(4): 599–619.

Leutert, W., and S. Eaton. 2021. Deepening Not Departure: Xi Jinping's Governance of China's State-Owned Economy. *The China Quarterly*, 248 (S1): 200–221.

Li, S., X. Yue, T. Sicular, and H. Sato. 2017. *The New Change of Income Distribution in China: Studies of Chinese Household Income V*. China Financial and Economic Publishing House: Beijing. (In Chinese).

Lin, K. J., X. Lu, J. Zhang, and Y. Zheng. 2020. State-Owned Enterprises in China: A Review of 40 Years of Research and Practice. *China Journal of Accounting Research*,13(1): 31–55.

Lozano, F., and J. S. Cheng. 2016. Religious Workers' Density and the Racial Earnings Gap. *American*

Economic Review,106(5):355–359.
Ma, X. 2021. *Female Employment and Gender Gap in China*. Springer Nature: Singapore.
Ma, X. 2022. Political Background and Its Influences on Wage Gaps: Evidence from China. *Journal of the Asia Pacific Economy*. 2022: 2157121.
Ma, X. 2024. Gender Role Attitudes and Gender Wage Gap: Evidence from China. *Journal of Asia Pacific Economy*. (Early View: https://doi.org/10.1080/13547860.2022.2157121).
Ma, X., and J. Cheng. 2019. The Influence of Social Insurance on Wages in China: An Empirical Study Based on Chinese Employee-Employer Matching Data. *Emerging Markets Finance and Trade*, 57(12): 3337–3366**.**
Ma, X., and I. Iwasaki. 2021. Does Party Membership Bring a Wage Premium in China? A Meta-Analysis. *Journal of Chinese Economics and Business Studies*, 19(1): 55–94.
Mai, X. 2019. On the Development, Theme and Trend of National Higher Education Equality. *Contemporary Education and Culture*,11(4): 98–103. (In Chinese).
Mao, Y., W. Hu, and X. Zeng. 2021. Expanding or Narrowing: The Impact of Internet Use on Household Wage Gap: Empirical Evidence based on CGSS Data. *Collected Essays on Finance and Economics*, 2(269): 3–12.
Minami, R., and X. Ma. 2010. The Lewisian Turning Point of Chinese Economy: Comparison with Japanese Experience. *Chinese Economic Journal*, 3(2):165-181.
Mincer, J.1974. *Schooling, Experience and Earning*. Columbia University Press: New York.
Morales, D. X. 2019. Geographic Inequality and Ethnic Stratification in China, 2000 to 2010. *International Journal of Sociology and Social Policy*, 39 (7/8):535–549.
National Bureau of Statistics of China. 2021. *The Seventh National Census Bulletin (No. 2): National Population Situation*. National Bureau of Statistics, Office of the Leading Group for the Seventh National Census of the State Council: Beijing.
National Bureau of Statistics of China. 2023. *China Statistical Yearbook 2023*. China Statistics Press: Beijing. (In Chinese).
Nesbitt-Larking, P., and A. L. Chan. 2024. The Political Leadership of Xi Jinping: Narratives of Integrity Through Ordeal. *Journal of Contemporary China*, 33(145): 135–150.
Nguyen, C. V., T. Q. Tran, H. Van Vu. 2017. Ethnic minorities in northern mountains of Vietnam: employment, poverty and income. *Social Indicators Research*, 134:93–115
Oaxaca, R. L. 1973. Male-Female Wage Differentials in Urban Labor Markets. *International Economic Review*, 14(3): 693–709.
OECD (Organizations for Economic Cooperation and Development) (2023) International Migration Outlook. Paris: OECD.
O'Toole, C. M., E. L.W. Morgenroth, and T. T. Ha. 2016. Investment Efficiency, State-Owned Enterprises and Privatisation: Evidence from Vietnam in Transition. *Journal of Corporate Finance*, 37: 93–108.
Piazzalunga, D. 2015. Is There a Double-Negative Effect? Gender and Ethnic Wage Differentials in Italy. *Labour*, 29(3): 243–269.
Rai, S. M., B. D. Brown, and K. N. Ruwanpura. 2019. SDG 8: Decent Work and Economic Growth: A Gendered Analysis. *World Development*, 113: 368–380.
Ran, Y. 2007. An Analysis of Informal Rules on Income Gap of Ethnic Minority Residents in Qinghai Province. *Oriental Enterprise Culture*, 11: 84–86. (In Chinese).
Ridala, S., and O. Toomet. 2019. Wage Gap in an Ethnically Segmented Labor Market: The Role of

Cognitive Skills. *Eastern European Economics*, 57(1): 20–30.

Sicular, T., S. Li, X. Yue, and H. Sato (Eds.). *Changing Trends in China's Inequality*: *Evidence, Analysis, and Prospects*. Oxford University Press: Oxford UK.

Simon, H. 2012. The Gender Gap in Earnings: An International Comparison with European Matched Employer–Employee Data. *Applied Economics*, 44(15): 1985–1999.

Sinem, B., E. Yilmaz, and I. E. Kilic. 2021. Ethnic Identity and Economic Welfare. *Economic Systems*, 45(2): 100888.

Shen, J. 2021. Using Scientific Thinking to Integrate Party Leadership into Corporate Governance. *Chinese Cadres Tribune*, 12:77–79. (In Chinese).

Stanley, T. D., and H. Doucouliagos. 2012. *Meta-Regression Analysis in Economics and Business*. Routledge: London and New York.

Stanley, T. D., and H. Doucouliagos. 2017. Neither Fixed nor Random: Weighted Least Squares Meta-Regression. *Research Synthesis Method*, 8(1): 19-42.

Stanley, T. D., and H. Doucouliagos, John P. A. Ioannidis. 2017. Finding the Power to Reduce Publication Bias. *Statistics in Medicine*, 36 (10): 1580–1598.

Stanley, T. D., S. B. Jarrell, and H. Doucouliagos. 2010. Could it Be Better to Discard 90% of the Data? A Statistical Paradox. *The American Statistician*, 64 (1): 70–77.

Trejo, S. J. 1997. Why Do Mexican Americans Earn Low Wages? *Journal of Political Economy*, 105 (6): 1235–1268.

Tian, F. 2020. Discussion on the Legislative Purpose of the Legal System of Minority Employment Preferential Employment. *Academics*, 8: 67–81. (In Chinese).

Tverdostup, M., and T. Paas. 2019. Immigrant–Native Wage Gap in Europe: The Role of Cognitive Skills and Their Use at Work. *International Journal of Manpower*, 40(1): 154–175.

van Aert, R. C., and M. A. L. M. van Assen. 2021. Correcting for Publication Bias in a Meta-Analysis with the *P*-uniform Method. Working paper, Tilburg University and Utrecht University.

Vick, B.2017. Measuring Links between Labor Monopsony and the Gender Pay Gap in Brazil. *IZA Journal of Development and Migration*, 7: 10.

Wang G. 2001. *The Development of Ethnic Regional Autonomy*. Publishing House of Minority Nationalities: Beijing. (In Chinese).

Wu, F., Z. Zhou, and T. Qin. 2022. Women Political Participation from the Perspective of Gender Consciousness: An Empirical Research on the Chinese General Social Survey (CGSS). *Journal of Shandong Women's University*, 2: 26–33. (In Chinese).

Woo, W. T. 1994. The Art of Reforming Centrally Planned Economies: Comparing China, Poland, and Russia. *Journal of Comparative Economics*, 18(3): 276–308.

Xia, Q., L. Song, S. Li, and S. Appleton. 2014. The Effect of the State Sector on Wage Inequality in Urban China: 1988–2007. *Journal of Chinese Economic and Business Studies*, 12(1): 29–45.

Xu, L., and Q. Wang. 2022. Development, Experience and Trend of Ethnic Minority Cadres' Education in the Past Century since the Founding of the Communist of China. *Journal of Qinghai Minzu University*, 2: 13–18. (In Chinese).

Yu, Z., and X. Yang. 2021. Ethnic Minority Cadre Management: Policy Evolution, Implementation Mechanism and Exploration. *The Forum of Leadership Science*, 5: 130–134+160. (In Chinese).

Yu, G., and Z. Lu. 2021. Rural Credit Input, Labor Transfer and Urban–Rural Income Gap: Evidence from China. *China Agricultural Economic Review*, 13(4): 872–893.

Zhang, J., and W. Zhao. 2018. Current Situation of Income Distribution in China and Thoughts of

Reduction of Gap: Measures to Be Taken by the Government to Maintain the Social Stability. *Nikkei Business*. Access on July 20, 2018 (https://business.nikkei.com). (In Japanese).

Zhao X., and Y. Li. 2021. The Development and Empirical Enlightenment of Ethnic Policies of the Communist Party of China in the Past 100 Years. *Journal of North Minzu University*, 3: 15–24. (In Chinese).

Zhou, W., H. Zhang, and Y. Wei. 2022. The Threshold Effect of Urban–Rural Income Gap on Economic Growth in Urbanization: Evidence from China. *Applied Economics Letters*. 2022: 2094874.

Zigraiova, D., T. Havranek, Z. Irsova, and J. Novak. 2021. How Puzzling is the Forward Premium Puzzle? A Meta-Analysis. *European Economic Review*, 134: 103714.

Table 1. Descriptive statistics of the partial correlation coefficients, t test, and Shapiro–Wilk normality test of collected estimates

Study type	K	Mean	Median	S.D.	Max.	Min.	Kurtosis	Skewness	t test [a]	Shapiro-Wilk normality test (z) [b]
All studies (Hypothesis H_1)	472	-0.014	-0.009	0.037	0.124	-0.234	7.166	-1.008	-8.193 ***	7.225 †††
Target gender (Hypothesis H_2)										
Male	51	-0.003	0.002	0.030	0.072	-0.073	3.092	-0.228	-0.609	0.317
Female	53	-0.021	-0.016	0.047	0.124	-0.112	3.609	0.056	-3.285 ***	1.814 ††
Gender unspecified	366	-0.014	-0.010	0.036	0.098	-0.234	8.555	-1.333	-7.742 ***	-7.742 †††
Target region (Hypothesis H_3)										
Urban region	308	-0.015	-0.010	0.038	0.124	-0.234	8.042	-1.281	-6.863 ***	6.861 †††
Rural region	52	-0.015	-0.014	0.029	0.061	-0.073	2.846	0.205	-3.762 ***	-0.173
Region unspecified	112	-0.010	-0.008	0.036	0.098	-0.118	4.288	-0.414	-3.022 ***	3.504 †††
Target corporate sector (Hypothesis H_4)										
Public sector	25	-0.018	-0.007	0.053	0.124	-0.139	4.147	0.095	-1.700	0.727
Private sector	31	-0.007	-0.007	0.041	0.072	-0.108	3.909	-0.604	-0.990	1.688 ††
Corporate sector unspecified	416	-0.014	-0.010	0.035	0.098	-0.234	7.887	-1.230	-8.146 ***	7.160 †††
Target period (Hypothesis H_5)										
1990s or before	51	-0.033	-0.025	0.035	0.029	-0.118	3.151	-0.992	-6.732 ***	3.801 †††
2000s	181	-0.008	-0.003	0.032	0.070	-0.139	5.452	-1.201	-3.342 ***	5.433 †††
2010s	240	-0.014	-0.010	0.039	0.124	-0.234	8.575	-0.940	-5.636 ***	5.854 †††

Note:

[a] *** denotes that the null hypothesis that mean is zero is rejected at the 1% level.

[b] ††† and †† denote that the null hypothesis of normal distribution is rejected at the 1% and 5% levels, respectively.

Table 2. Synthesis of estimates

Study type	Number of estimates (K)	(a) Traditional synthesis		(b) Heterogeneity test and measures			(c) Unrestricted weighted least squares average (UWA)				
		Fixed-effect model (z value) [a]	Random-effects model (z value) [a]	Cochran Q test of homogeneity (p value) [b]	I^2 statistic [c]	H^2 statistic [d]	UWA of all estimates (t value) [a e]	Number of the adequately powered estimates [f]	WAAP (weighted average of the adequately powered estimates) (t value) [a]	Median S.E. of estimates	Median statistical power
All studies (Hypothesis H_1)	472	-0.016 *** (-34.08)	-0.013 *** (-9.11)	3319.10 *** (0.00)	85.69	6.99	-0.016 *** (-12.84)	30	-0.020 *** (-4.18)	0.017	0.159
Target gender (Hypothesis H_2)											
Male	52	-0.002 (-1.07)	-0.003 (-0.75)	106.13 *** (0.00)	57.79	2.37	-0.002 (-0.74)	0	- (-)	0.023	0.032
Female	54	-0.014 *** (-4.66)	-0.019 *** (-3.95)	112.50 *** (0.00)	49.21	1.97	-0.014 *** (-3.20)	0	- (-)	0.028	0.072
Gender unspecified	366	-0.017 *** (-34.29)	-0.014 *** (-8.50)	3063.49 *** (0.00)	88.23	8.5	-0.017 *** (-11.84)	31	-0.020 *** (-4.19)	0.014	0.229
Target region (Hypothesis H_3)											
Urban region	308	-0.016 *** (-27.28)	-0.013 *** (-7.36)	2094.15 *** (0.00)	84.92	6.63	-0.016 *** (-10.44)	20	-0.021 *** (-3.56)	0.017	0.151
Rural region	52	-0.021 *** (-11.65)	-0.018 *** (-4.76)	181.39 *** (0.00)	74.53	3.93	-0.021 *** (-6.18)	0	- (-)	0.016	0.269
Region unspecified	112	-0.016 *** (-17.01)	-0.011 *** (-3.50)	1035.70 *** (0.00)	89.31	9.36	-0.016 *** (-5.57)	10	-0.018 * (-2.04)	0.015	0.182
Target corporate sector (Hypothesis H_4)											
Public sector	25	-0.020 *** (-6.95)	-0.020 ** (-2.05)	230.00 *** (0.00)	90.17	10.18	-0.020 ** (-2.25)	0	- (-)	0.013	0.330
Private sector	31	-0.004 (-1.29)	-0.007 (-1.34)	65.440 *** (0.000)	58.91	2.43	-0.004 (-0.88)	0	- (-)	0.026	0.035
Corporate sector unspecified	416	-0.016 *** (-33.64)	-0.013 *** (-8.84)	3003.25 *** (0.00)	85.31	6.81	-0.016 *** (-12.51)	31	-0.020 *** (-4.19)	0.016	0.173
Target period (Hypothesis H_5)											
1990s or before	51	-0.023 *** (-14.18)	-0.026 *** (-6.28)	323.54 *** (0.00)	81.54	5.42	-0.023 *** (-5.57)	7	-0.027 (-1.65)	0.012	0.461
2000s	181	-0.011 *** (-15.18)	-0.007 *** (-3.02)	1499.34 *** (0.00)	87.28	7.86	-0.011 *** (-5.26)	6	-0.012 * (-2.50)	0.017	0.091
2010s	240	-0.021 *** (-29.15)	-0.015 *** (-7.42)	1376.38 *** (0.00)	83.52	6.07	-0.021 *** (-12.15)	21	-0.028 *** (-4.93)	0.017	0.223

Notes: ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

[a] Null hypothesis: The synthesized effect size is zero.

[b] Null hypothesis: Effect sizes are homogeneous.

[c] Ranges between 0 and 100% with larger scores indicating heterogeneity.

[d] Takes zero in the case of homogeneity

[e] Synthesis method advocated by Stanley and Doucouliagos (2017) and Stanley et al. (2017).

[f] Denotes the number of estimates with statistical power of 0.80 or more, which is computed in reference to the UWA of all collected estimates.

Table 3. Definitions and descriptive statistics of meta-independent variables

Variable name	Definition	Descriptive statistics		
		Mean	Median	S.D.
Male	1 = if the sample is limited to male workers, 0 = otherwise	0.110	0	0.313
Female	1 = if the sample is limited to female workers, 0 = otherwise	0.114	0	0.319
Urban region	1 = if the target region is an urban region, 0 = otherwise	0.653	1	0.477
Rural region	1 = if the target region is a rural region, 0 = otherwise	0.110	0	0.313
Public sector	1 = if the sample is limited to workers of state-owned enterprises, 0 = otherwise	0.053	0	0.224
Private sector	1 = if the sample is limited to workers of privately owned enterprises, 0 = otherwise	0.066	0	0.248
2000s	1 = if the average estimation year is in the 2000s, 0 = otherwise	0.383	0	0.487
2010s	1 = if the average estimation year is in the 2010s, 0 = otherwise	0.508	1	0.500
Urban residents	1= if the sample is limited to workers who are urban residents, 0 = otherwise	0.083	0	0.276
Migrants	1= if the sample is limited to workers who are migrants, 0 = otherwise	0.182	0	0.386
CHNS	1 = if the survey results of China's Health and Nutrition Survey (CHNS) are used as the data source, 0 = otherwise	0.017	0	0.129
CGSS	1 = if the survey results of the Chinese General Social Survey (CGSS) are used as the data source, 0 = otherwise	0.081	0	0.272
Other household survey	1 = if the results of a household survey other than CHIP, CHNS, or CGSS are used as the data source, 0 = otherwise	0.413	0	0.493
Regular wages	1 = if regular wage is employed for empirical analysis, 0 = otherwise	0.593	1	0.492
Monthly	1 = if monthly wage is employed for empirical analysis, 0 = otherwise	0.275	0	0.447
Daily	1 = if daily wage is employed for empirical analysis, 0 = otherwise	0.017	0	0.129
Hourly	1 = if hourly wage is employed for empirical analysis, 0 = otherwise	0.383	0	0.487
Logarithm value	1 = if a logarithmic value of wage is used as the dependent variable, 0 = otherwise	0.886	1	0.319
OLS	1 = if an OLS estimator is used for estimation, 0 = otherwise	0.691	1	0.463
IV/2SLS/3SLS	1 = if an IV, 2SLS, or 3SLS estimator is used for estimation, 0 = otherwise	0.104	0	0.305
Control for selection bias	1 = if the selection bias due to endogeneous labor participation is controlled for, 0 = otherwise	0.072	0	0.259
Occupation	1 = if the estimation simultaneously controls for occupation, 0 = otherwise	0.320	0	0.467
Age/age group	1 = if the estimation simultaneously controls for age or age group, 0 = otherwise	0.314	0	0.464
Work experience/tenure	1 = if the estimation simultaneously controls for work experience and/or tenure, 0 = otherwise	0.714	1	0.452
Health condition	1 = if the estimation simultaneously controls for the health of workers, 0 = otherwise	0.176	0	0.381
Firm size	1 = if the estimation simultaneously controls for the size of firms to which workers belong, 0 = otherwise	0.032	0	0.176
Trade union	1 = if the estimation simultaneously controls for trade unions, 0 = otherwise	0.021	0	0.144
Location fixed effects	1 = if the estimation simultaneously controls for location fixed effects, 0 = otherwise	0.595	1	0.491
Industry fixed effects	1 = if the estimation simultaneously controls for industry fixed effects, 0 = otherwise	0.430	0	0.496
With an interaction term(s)	1 = if the estimation is conducted with an interaction term(s), 0 = otherwise	0.032	0	0.176
S.E.	Standard error of patial correlation coefficient	0.019	0.017	0.012

Table 4. Meta-regression analysis of literature heterogeneity: Estimation with selected moderators

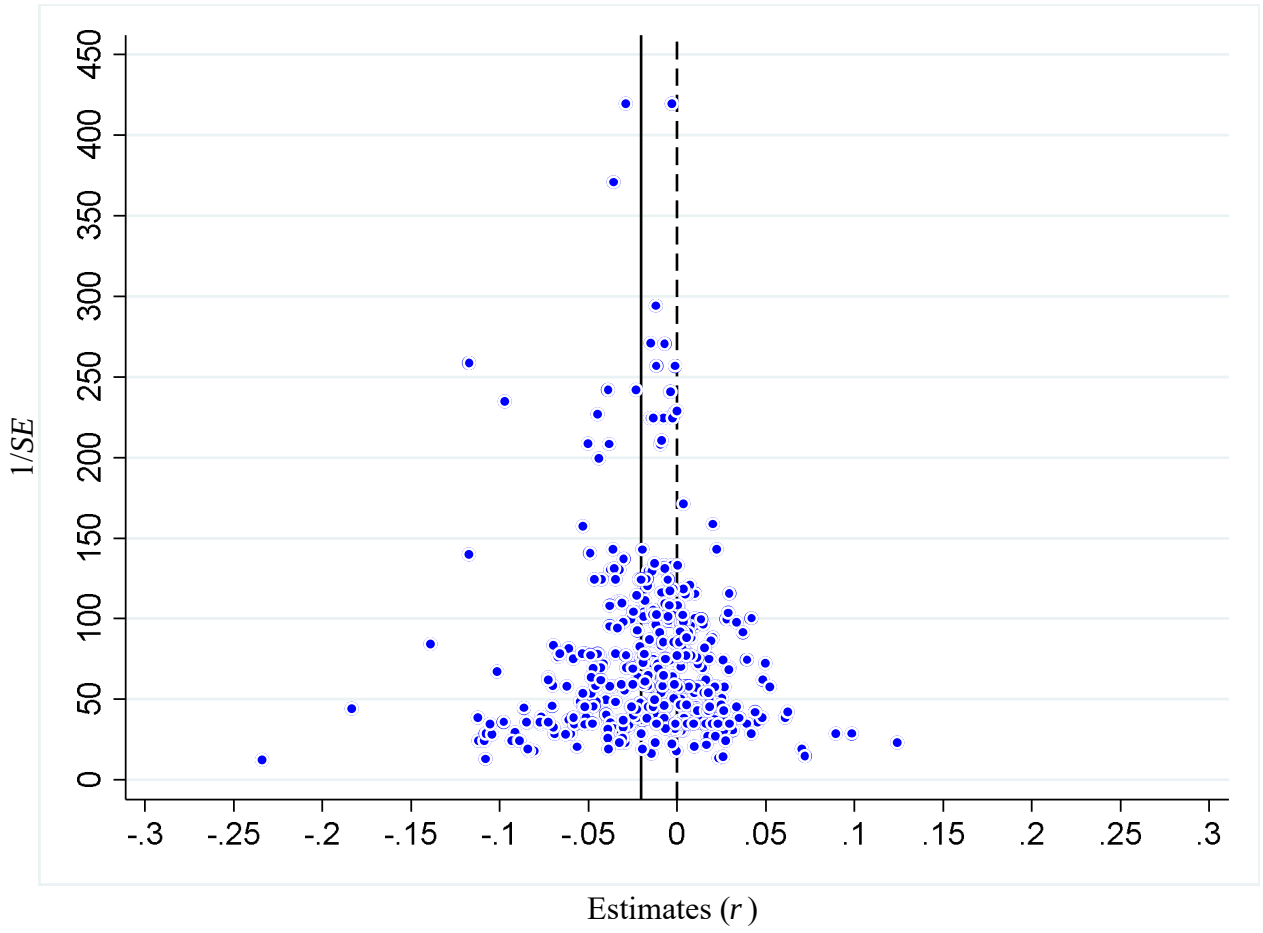
Estimator	Cluster-robust WLS [1/*SE*]	Cluster-robust WLS [*df*]	Cluster-robust WLS [1/*EST*]	Multi-level mixed effects RML	Cluster-robust random-effects panel GLS
Meta-independent variable (default study type)/model	[1]	[2]	[3]	[4]	[5] [a]
Sample gender (gender unspecified)—Hypothesis H_2					
Male	0.0190 **	0.0239 **	0.0144 *	0.0115	0.0117
	(0.008)	(0.009)	(0.008)	(0.008)	(0.008)
Female	-0.0003	0.0030	-0.0068	0.0002	0.0003
	(0.010)	(0.008)	(0.010)	(0.012)	(0.012)
Target region (urban region)—Hypothesis H_3					
Rural region	0.0008	0.0011	-0.0021	-0.0022	-0.0023
	(0.006)	(0.007)	(0.006)	(0.006)	(0.006)
Region unspecified	-0.0099	-0.0122	-0.0032	-0.0055	-0.0056
	(0.009)	(0.008)	(0.009)	(0.009)	(0.009)
Target corporate sector (corporate sector unspecified)—Hypothesis H_4					
Public sector	-0.0158 **	-0.0162 ***	-0.0120	-0.0120	-0.0143 *
	(0.006)	(0.005)	(0.012)	(0.010)	(0.008)
Private sector	-0.0005	0.0005	-0.0043	0.0062	0.0061
	(0.006)	(0.006)	(0.014)	(0.009)	(0.009)
Target period (1990s or before) —Hypothesis H_5					
2000s	0.0207 ***	0.0205 **	0.0200 ***	0.0225 ***	0.0226 ***
	(0.007)	(0.008)	(0.006)	(0.005)	(0.006)
2010s	0.0146 *	0.0106	0.0131 *	0.0164 ***	0.0165 ***
	(0.008)	(0.009)	(0.007)	(0.006)	(0.006)
Selected moderators					
Other household survey	0.0059	0.0038	0.0165 ***	0.0143 **	0.0142 **
	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)
Work experience/tenure	0.0140 **	0.0149 **	0.0121 *	0.0131 **	0.0132 **
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Industry fixed effects	0.0102 **	0.0066	0.0133 **	0.0139 ***	0.0140 ***
	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)
Standard error of patial correlation coefficient					
S.E.	-0.3331	-0.0564	-0.5844	-0.8369 **	-0.8312 **
	(0.280)	(0.345)	(0.363)	(0.355)	(0.358)
Constant	-0.0402 ***	-0.0404 ***	-0.0375 ***	-0.0357 ***	-0.0359 ***
	(0.012)	(0.015)	(0.013)	(0.012)	(0.012)
K	472	472	472	472	472
R^2	0.103	0.113	0.162	-	0.123

Notes: Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. See Table 3 for definitions and descriptive statistics of the meta-independent variables. Selected moderators denote meta-independent variables with a PIP of 0.50 or more in the Bayesian model averaging (BMA) estimation and with a t value of 1.00 or more in the weighted-average least squares (WALS) estimation as reported in Appendix Table A2.

[a] Hausman test: χ^2=11.65, p=0.3902

Source : See Table 3 for definitions and descriptive statistics of meta-independent variables.

Figure 1. Funnel plot of patial correlation coefficients (K=472)



Note: The solid line indicates the synthesized effect size by WAAP estimation as reported in Table 2.

Table 5. Meta-regression analysis of publication selection bias

(a) FAT-PET test (Equation: $t=\gamma_0+\gamma_1(1/SE)+v$)

Estimator	Unrestricted WLS	WLS with bootstrapped standard errors	Cluster-robust WLS	Cluster-robust random-effects panel GLS	IV
Model	[1]	[2]	[3]	[4][a]	[5]
Intercept (FAT: H_0: $\gamma_0=0$)	0.4218	0.4218	0.4218	0.4362	0.0531
	(0.291)	(0.346)	(0.422)	(0.282)	(0.262)
$1/SE$ (PET: H_0: $\gamma_1=0$)	-0.0197 ***	-0.0197 ***	-0.0197 ***	-0.0196 ***	-0.0149 ***
	(0.005)	(0.006)	(0.004)	(0.003)	(0.003)
K	472	472	472	472	472
R^2	0.160	0.160	0.160	0.160	0.151

(b) PEESE approach (Equation: $t=\gamma_0 SE+\gamma_1(1/SE)+v$)

Estimator	Unrestricted WLS	WLS with bootstrapped standard errors	Cluster-robust WLS	Random-effects panel ML	IV
Model	[6]	[7]	[8]	[9]	[10]
SE	5.8599	5.8599	5.8599	1.0327	4.6462
	(6.064)	(5.575)	(6.685)	(7.973)	(14.073)
$1/SE$ (H_0: $\gamma_1=0$)	-0.0168 ***	-0.0168 ***	-0.0168 ***	-0.0165 ***	-0.0162 **
	(0.003)	(0.003)	(0.003)	(0.002)	(0.007)
K	472	472	472	472	472
R^2	0.261	0.261	0.261	-	-

Notes: Figures in parentheses beneath the regression coefficients are standard errors. Models [3], [4], and [8] report standard errors clustered by study. Models [5] and [10] use the inverse of the square root of the number of observations used as an instrument of the standard error. *** and ** denote statistical significance at the 1% and 5% levels, respectively.
[a] Hausman test: $\chi^2=1.23$, $p=0.2682$

Table 6. Alternative estimates of publication selection bias–corrected effect size

Method	Top 10[a]	Selection model[b]	Endogeous kinked model[c]	*p* -uniform[d]
Model	[1]	[2]	[3]	[4]
Publication selection bias–corrected effect size	-0.0217 ***	-0.0120 ***	-0.0197 ***	-0.0161 ***
	(0.004)	(0.004)	(0.002)	(0.001)
K	46	472	472	472

Notes: Figures in parentheses are standard errors. *** denotes that the coefficient is statistically significantly different from zero at the 1% level.

[a] Arithmetic average of the top 10% most precise estimates (Stanley et al., 2010)

[b] Test for publication selection bias using the conditional probability of publication as a function of a study's results (Andrews and Kasy, 2019)

[c] Piecewise linear meta-regression of estimates on their standard errors with a kink at the cutoff value of the standard error below which publication selection bias is unlikely (Bom and Rachinger, 2019)

[d] Method based on the statistical theory that the distribution of *p* values is uniform conditional on the population effect size (van Aert and van Assen, 2021)

Table 7. Summary of publication selection bias tests

Study type	Number of estimates (K)	Test results [a]		
		Funnel asymmetry test (FAT) (H_0: γ_0=0)	Precision-effect test (PET) (H_0: γ_1=0)	Precision-effect estimate with standard error (PEESE) (H_0: γ_1=0) [b]
All studies (Hypothesis H_1)	472	Not rejected	Rejected	Rejected (-0.0168/-0.0162)
Target gender (Hypothesis H_2)				
Male	52	Not rejected	Not rejected	Not rejected
Female	54	Not rejected	Not rejected	Not rejected
Gender unspecified	366	Not rejected	Rejected	Rejected (-0.0175/-0.0138)
Target region (Hypothesis H_3)				
Urban region	308	Not rejected	Rejected	Rejected (-0.0162/-0.0151)
Rural region	52	Rejected	Rejected	Rejected (-0.0406/-0.0267)
Region unspecified	112	Not rejected	Rejected	Rejected (-0.0173/-0.0168)
Target corporate sector (Hypothesis H_4)				
Public sector	25	Not rejected	Not rejected	Rejected (-0.0627/-0.0222)
Private sector	31	Not rejected	Not rejected	Not rejected
Corporate sector unspecified	416	Not rejected	Rejected	Rejected (-0.0207/-0.0168)
Target period (Hypothesis H_5)				
1990s or before	51	Not rejected	Rejected	Rejected (-0.0277/-0.0192)
2000s	181	Not rejected	Rejected	Rejected (-0.0125/-0.0108)
2010s	240	Rejected	Rejected	Rejected (-0.0230/-0.0218)

Notes:

[a] The null hypothesis is rejected when more than three of five models show a statistically significant estimate; otherwise not rejected.

[b] Figures in parentheses are PSB-adjusted estimates. If two or more estimates are reported, the left and right figures denote the minimum and maximum estimates, respectively.

Appendix Table A1. Meta-regression analysis of model uncertainty for selection of moderators

Estimator	Bayesian model averaging (BMA)				Weighted-average least squares (WALS)		
Meta-independent variables/model	[1]				[2]		
	Coef.	S.E.	*t*	PIP	Coef.	S.E.	*t*
Focus regressors							
Male	0.0124	0.0063	1.96	1.00	0.0093	0.0062	1.50
Female	-0.0018	0.0062	-0.29	1.00	-0.0038	0.0063	-0.61
Urban region	0.0000	0.0048	0.01	1.00	-0.0024	0.0049	-0.50
Rural region	-0.0050	0.0068	-0.73	1.00	-0.0020	0.0069	-0.30
Public sector	-0.0139	0.0080	-1.73	1.00	-0.0135	0.0079	-1.70
Private sector	0.0020	0.0074	0.27	1.00	0.0027	0.0075	0.36
2000s	0.0244	0.0066	3.68	1.00	0.0233	0.0063	3.68
2010s	0.0206	0.0071	2.91	1.00	0.0205	0.0066	3.08
SE	-0.7126	0.2040	-3.49	1.00	-0.7449	0.1785	-4.17
Auxiliary regressors							
Urban residents	0.0009	0.0034	0.27	0.10	0.0065	0.0057	1.14
Migrants	-0.0038	0.0058	-0.66	0.36	-0.0048	0.0044	-1.07
CHNS	-0.0014	0.0067	-0.21	0.09	-0.0163	0.0148	-1.10
CGSS	-0.0001	0.0023	-0.05	0.06	-0.0069	0.0074	-0.93
Other household survey	0.0106	0.0069	1.55	0.79	0.0130	0.0041	3.14
Regular wage	0.0001	0.0011	0.06	0.06	0.0005	0.0040	0.13
Monthly	-0.0003	0.0017	-0.17	0.07	0.0005	0.0045	0.11
Daily	0.0073	0.0138	0.53	0.27	0.0228	0.0113	2.01
Hourly	0.0042	0.0059	0.71	0.40	0.0054	0.0050	1.07
Logarithm value	-0.0010	0.0035	-0.28	0.12	-0.0077	0.0054	-1.43
OLS	0.0000	0.0009	0.01	0.05	0.0000	0.0036	0.01
IV/2SLS/3SLS	-0.0005	0.0024	-0.22	0.08	-0.0042	0.0048	-0.87
Control for selection bias	0.0023	0.0064	0.36	0.16	0.0043	0.0097	0.44
Occupation	0.0052	0.0063	0.83	0.48	0.0050	0.0040	1.24
Age/age group	-0.0001	0.0026	-0.03	0.09	0.0040	0.0068	0.59
Work experience/tenure	0.0095	0.0074	1.27	0.70	0.0124	0.0069	1.79
Health condition	0.0053	0.0070	0.76	0.43	0.0074	0.0050	1.48
Firm size	0.0003	0.0035	0.10	0.06	0.0144	0.0116	1.24
Trade union	0.0007	0.0043	0.17	0.07	0.0134	0.0131	1.03
Location fixed effects	0.0010	0.0029	0.36	0.16	0.0047	0.0039	1.22
Industry fixed effects	0.0122	0.0054	2.27	0.91	0.0096	0.0037	2.61
With an interaction term(s)	0.0008	0.0040	0.21	0.08	0.0104	0.0081	1.29
K	472				472		

Notes: See Table 3 for definitions and descriptive statistics of the meta-independent variables. Estimate of the intercept is omitted. *SE* and PIP denote standard errors and posterior inclusion probability, respectively. In theory, the PIP of focus regressors is always 1.00 in Model [1].

Appendix Table A2. Meta-regression analysis of literature heterogeneity: Estimation using all moderators

Estimator (analytical weight in brackets)	Cluster-robust WLS [1/*SE*]	Cluster-robust WLS [*df*]	Cluster-robust WLS [1/*EST*]	Multi-level mixed effects RML	Cluster-robust random-effects panel GLS
Meta-independent variable (default study type)/model	[1]	[2]	[3]	[4]	[5] [a]
Sample gender (gender unspecified)—Hypothesis H_2					
Male	0.0102	0.0104	0.0082	0.0074	0.0075
	(0.007)	(0.007)	(0.008)	(0.009)	(0.009)
Female	-0.0062	-0.0066	-0.0092	-0.0039	-0.0028
	(0.010)	(0.010)	(0.011)	(0.012)	(0.012)
Target region (urban region)—Hypothesis I_3					
Rural region	0.0028	0.0054	-0.0020	-0.0015	-0.0011
	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)
Region unspecified	-0.0030	-0.0059	0.0050	-0.0004	-0.0025
	(0.006)	(0.006)	(0.009)	(0.007)	(0.008)
Target corporate sector (corporate sector unspecified)—Hypothesis I_4					
Public sector	-0.0190 ***	-0.0198 ***	-0.0146	-0.0158 **	-0.0146 *
	(0.007)	(0.007)	(0.010)	(0.008)	(0.009)
Private sector	-0.0041	-0.0042	-0.0043	0.0018	0.0039
	(0.007)	(0.007)	(0.012)	(0.007)	(0.008)
Target period (1990s or before) —Hypothesis I_5					
2000s	0.0229 ***	0.0258 ***	0.01911 ***	0.0233 ***	0.0235 ***
	(0.006)	(0.008)	(0.0059)	(0.005)	(0.005)
2010s	0.0199 ***	0.0223 **	0.01333 *	0.0199 ***	0.0191 ***
	(0.007)	(0.009)	(0.0077)	(0.007)	(0.007)
Hukou types (*Hukou* unspecified)					
Urban residents	0.0090 **	0.0125 ***	0.0096	0.0058	0.0026
	(0.004)	(0.003)	(0.006)	(0.004)	(0.004)
Migrants	-0.0059	-0.0013	-0.0035	-0.0077	-0.0102
	(0.006)	(0.006)	(0.007)	(0.008)	(0.009)
Survey data (CHIPs)					
CHNS	-0.0151	-0.0115	-0.0179	-0.0157	-0.0120
	(0.013)	(0.014)	(0.012)	(0.013)	(0.013)
CGSS	-0.0105	-0.0113	-0.0043	-0.0066	-0.0042
	(0.009)	(0.009)	(0.011)	(0.010)	(0.010)
Other household survey	0.0140 **	0.0088	0.0231 ***	0.0182 ***	0.0191 ***
	(0.005)	(0.005)	(0.007)	(0.007)	(0.007)
Wage type (Bonus wage)					
Regular wage	0.0055	0.0105 ***	0.0001	0.0002	-0.0004
	(0.004)	(0.004)	(0.006)	(0.005)	(0.006)
Wage payment period (annual)					
Monthly	-0.0080	-0.0174 ***	-0.0043	-0.0012	-0.0025
	(0.005)	(0.005)	(0.007)	(0.006)	(0.007)
Daily	0.0258 ***	0.0224 ***	0.0339 ***	0.0316 ***	0.0298 ***
	(0.006)	(0.006)	(0.009)	(0.008)	(0.009)
Hourly	-0.0048	-0.0159 ***	0.0052	0.0073	0.0084
	(0.005)	(0.006)	(0.006)	(0.005)	(0.006)
Wage variable type (actual value: Yuan)					
Logarithm value	-0.0116 **	-0.0164 ***	-0.0118 *	-0.0085 *	-0.0076
	(0.004)	(0.004)	(0.006)	(0.005)	(0.005)
Estimator					
OLS (estimators other than OLS)	0.0048	0.0117 **	-0.0084	-0.0002	0.0005
	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)
IV/2SLS/3SLS	0.0060	0.0190 **	-0.0101	-0.0045	-0.0033
	(0.008)	(0.009)	(0.006)	(0.006)	(0.006)
Control for selection bias due to endogeneous labor participation					
Control for selection bias	-0.0009	0.0028	-0.0078	0.0032	0.0029
	(0.009)	(0.008)	(0.010)	(0.011)	(0.010)
Control variables					
Occupation	0.0108 *	0.0111 **	0.0060	0.0045	0.0013
	(0.006)	(0.005)	(0.006)	(0.007)	(0.009)
Age/age group	0.0049	0.0077	0.0071	0.0038	0.0007
	(0.007)	(0.006)	(0.008)	(0.007)	(0.008)
Work experience/tenure	0.0146 **	0.0160 **	0.0183 **	0.0148 **	0.0125 *
	(0.006)	(0.006)	(0.008)	(0.007)	(0.008)
Health status	0.0131 **	0.0113 *	0.0102	0.0096	0.0084
	(0.006)	(0.006)	(0.007)	(0.007)	(0.008)
Firm size	0.0213	0.0233	0.0217	0.0164	0.0140
	(0.016)	(0.017)	(0.015)	(0.016)	(0.017)
Trade union	0.0256 *	0.0361 **	0.0213	0.0171	0.0195
	(0.015)	(0.015)	(0.016)	(0.014)	(0.015)
Location fixed effects	0.0079 **	0.0122 ***	0.0086	0.0065	0.0069
	(0.004)	(0.003)	(0.006)	(0.005)	(0.006)
Industry fixed effects	0.0129 **	0.0147 **	0.0123 **	0.0132 **	0.0128 **
	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)
Estimation with an interaction term(s)					
With an interaction term(s) (without interaction term	0.0120 **	0.0153 ***	0.0179 **	0.0124 ***	0.0127 ***
	(0.005)	(0.005)	(0.007)	(0.004)	(0.003)
Standard error of patial correlation coefficient					
S.E.	-0.4200	-0.0811	-0.8684 **	-0.8687 ***	-0.9106 **
	(0.260)	(0.351)	(0.368)	(0.339)	(0.381)
Constant	-0.0525 ***	-0.0639 ***	-0.0350 **	-0.0422 ***	-0.0392 ***
	(0.013)	(0.015)	(0.014)	(0.014)	(0.014)
K	472	472	472	472	472
R^2	0.197	0.258	0.260	-	0.185

Notes: Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

[a] Hausman test: χ^2=28.45, p=0.3369

Source: See Table 3 for the definitions and descriptive statistics of meta-independent variables.