Center for Economic Institutions
Working Paper Series

No. 2022-8

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March, 2023

Center for Economic Institutions
Working Paper Series

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CEI Working Paper No. 2022-8

March 2023

Wage Functions in China and Eastern Europe: A Large-Scale Comparative Meta-Analysis*

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Abstract: This paper conducts a meta-analysis using 6453 estimates reported in 216 research works to compare the wage function in China and Eastern Europe. The results indicate that the wage systems in both China and Eastern Europe were structured consistently with economic theories. Nevertheless, it is also revealed that the shape of their wage functions has changed dynamically in recent decades. In fact, both China and Eastern Europe have experienced a flattening of their wage-experience profiles over time. At the same time, China and Eastern Europe have showed quite contrasting changes in the wage effects of education and gender.

JEL classification numbers: D31, I26, J16, J31, P23, P36

Keywords: wage function, research synthesis, meta-regression analysis, publication selection bias, China, Eastern Europe

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*This research work was financially supported by grants-in-aid for scientific research from the Ministry of Education, Culture, Sports, Science and Technology of Japan (JSPS KAKENHI Grant Nos. 19K23256, 19KK0036, and 20H01489). We thank Michie Kano and Eriko Yoshida for their research assistance and Tammy Bicket for her editorial assistance. The usual disclaimer applies.

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1 Introduction

The abandonment of the planned system and the pursuit over the past decades of building economic systems based on market principles have brought about significant changes in various aspects of the socio-economy in China and Eastern European countries (Dallago and Casagrande, 2022). The relationship between firms and workers is no exception. As a means of approaching the process of systemic transformation to a market economy and the accompanying social changes, technological progress, and other factors that affect labor relations in these countries, researchers have made numerus attempts to analyze the wage system. As a result, to the best of our knowledge, from 1990 until today, at least 700 wage studies have been published with respect to China and Eastern European countries; about one-third of these previous studies estimated wage functions using household/individual-level data. In other words, we now have a large number of estimation results of the wage function for China and Eastern Europe.

This rich evidence of the wage function not only provides us with an understanding of the actual situation in China and individual countries in Eastern Europe but also opens up the possibility of comparing them. While China and Eastern Europe share significant commonalities in the sense that they have both promoted the transition from the planned system to a market economy, there are marked differences in the processes of economic transition, underlying institutions, histories, and traditions. Therefore, a comparison of the wage functions in China and Eastern Europe is expected to yield quite interesting findings, not only academically, but also practically and policy wise.

However, the empirical strategies of previous studies are so diverse that it is not easy to make comparisons between China and Eastern European states by simply reviewing them. In fact, there are almost no survey articles covering a wide range of wage studies targeting these countries. In this paper, we attempt to accomplish this very interesting task through a large-scale meta-analysis that covers the full range of wage function estimation results reported in the extant literature. Meta-analysis enables us to synthesize and compare empirical results beyond the differences in the model specification, data type, estimation period, and other study conditions across studies, taking account of the possible influence of literature heterogeneity and publication selection bias on reported estimates (Borenstein et al., 2009; Stanley and Doucouliagos, 2012). Taking these advantages of meta-analysis, Iwasaki et al. (2020, 2022) successfully compared China and Eastern Europe from the perspective of the impact of corporate ownership on managerial turnover and firm performance. This paper shares the same goal with these preceding comparative meta-analyses.

The focus of our meta-analysis is threefold: wage-experience profile, return to education, and gender wage gap. These three factors are essential parts of the so-called Mincer-type wage function in general and, needless to say, also for that in China and Eastern Europe (Gustafsson et al., 2001). However, we have other reasons for paying special attention to them, with the aim of comparing the two from the viewpoint of labor relations.

In China, the central government implemented gradual economic reforms while the Communist Party of China (CPC) maintained a one-party dictatorship. As a consequence, the influence of the state on human resource management (HRM) remains very strong (Lin et al., 1994, 2020; Ma, 2018; Ma and Iwasaki, 2021a). In addition, during the transition period, the Chinese labor market has been divided into public and private sectors, and, as a result, the employment and wage systems now differ greatly between the two (Sun et al., 2022; Ma and Li, 2022). Thus, the effects of gradualism in economic transition and labor market segmentation on the wage seniority in all of China are quite unclear. Furthermore, China has significantly improved its higher education system in order to become a science and technology-based state. At the same time, the country has been working to eliminate the ideological egalitarianism cultivated in the planned system era (Iwasaki and Ma, 2020; Ma and Iwasaki, 2021b). It is likely that these historical facts have strongly influenced both the return to education and the gender wage gap; therefore, a noteworthy time-series change may have occurred in these two wage aspects in addition to the wage-experience profile. In other words, to grasp the shape of the wage function and its historical changes from these three perspectives may greatly serve to help us understand the real impacts of regime change in China.

In contrast, transition countries in Eastern Europe moved from socialist personnel management, with a centralized corporate structure and socialistic corporate culture under strong state control, to decentralized Western-style HRM practices. However, as the meta-analysis by Horie and Kumo (2022) shows, socialist institutional legacies in HRM are still important in many Eastern European countries, especially in the traditional manufacturing sector inherited from the period of socialism. On the other hand, as the new private sector and modern industries grew over time and many countries deepened their integration with the European Union, the variety of HRM practices, including those related to employee motivation and remuneration, has greatly increased in Eastern Europe. Besides, after removing the major barriers to worker mobility between jobs within and outside a given post-socialist country, competition for talents intensified, and HRM practices aimed at attracting and retaining the best employees gained momentum. At the same time, the Eastern European countries transformed their educational systems by eliminating the socialist legacies in post-secondary education and implementing the Bologna Process. Private educational institutions were founded; tuition fees were introduced in public colleges and universities; and the total number of educational institutions, departments, and enrollments substantially increased (Horie and Iwasaki, 2023; Kupets, 2016). We expect that parameters of the wage function, including the wage-experience profile, the return to education, and the gender wage gap, have changed over time in response to substantial changes in the HRM and education systems and that their analysis can help us understand the peculiarities of economic transition in Eastern European countries.

Our meta-analysis, which employs 6453 estimates reported in 216 previous research works, indicates that the wage systems of both China and Eastern Europe were structured consistently with economic theories after the end of the planned system. Nevertheless, it is also revealed that the shapes of their wage functions have changed dynamically in recent decades. Actually, both China and Eastern Europe have experienced a flattening of their wage-experience profiles over time. At the same time, however, there were contrasting changes in the wage effects of education and gender between the two, meaning that the impacts of education and gender on wage levels in China were gradually increasing toward the present, while those in Eastern Europe were declining.

The remainder of the paper is structured as follows: The next section presents our hypotheses to be tested by meta-analysis. Section 3 describes the procedures used to search for and select literature to subject to meta-analysis, and it overviews the collected estimates. Section 4 describes the methodology of meta-analysis applied in this paper. Section 5 reports the results. Lastly, Section 6 summarizes the major findings obtained from the meta-analysis and concludes the paper.

2 Hypothesis Development

In this section, we propose our hypotheses for testing by a meta-analysis of wage studies in China and Eastern Europe. Our meta-analysis is conducted based on the estimation results of Mincer-type wage functions. A typical Mincer-type wage function is formulated in the following equation:

$$wage_i = \mu + \gamma \cdot experience_i + \delta \cdot experience_i^2 + \theta \cdot schooling_i + \vartheta \cdot gender_i + \sum_{n=1}^{N} \varphi_n \cdot x_n + \varepsilon_{i,} \quad (1)$$

where $wage_i$, $experience_i$, $schooling_i$, and $gender_i$ are wage level (log-transformed in most cases), years of work experience, years of schooling, and gender of the *i*-th worker, respectively. $gender_i$ takes a value of one, if the *i-th* worker is a woman. x_n is the other *n*-th wage determinant. ε_i is the error term. η is the constant term. γ, δ, θ, ϑ, and φ are parameters to be estimated.

As Eq. (1) indicates, the coefficient γ of the single term of *experience* gauges the degree of wage seniority, while the coefficient δ of its squared term captures the curvature of the wage curve. These two factors form the so-called wage-experience profile. Coefficient ϑ measures the gender wage gap that is often interpreted by researchers as evidence of labor market discrimination because it measures the female–male difference in wages after controlling for education, experience, and other observable factors that may significantly affect wage levels (Polachek, 2007). Since work experience, education, and gender are indispensable variables for estimating the Mincer-type wage function, both Chinese and Eastern European studies commonly report their estimates, thus providing a valuable opportunity to compare the two.

The human capital theory tells that a worker's wage level is mainly determined by his/her human capital that is directly related with labor productivity. Because the years of schooling and work experience are the indicators of human capital, both variables are expected to have positive coefficients in the Mincer-type wage function (Mincer, 1974). Besides, the squared term of work experience is expected to have a negative coefficient δ, as earnings tend to increase at a decreasing rate throughout one's life until human capital depreciation exceeds its accumulation (Polachek, 2007). According to the employer discrimination hypothesis, employers' tastes for discrimination against women, regardless of their productivity characteristics, may cause a wage differential between men and women, as discriminatory employers would be ready to hire women only at a sufficient wage discount (Becker, 1957). In addition to labor market discrimination and traditional human capital factors, newer explanations for the gender wage gap, such as gender differences in psychological factors and non-cognitive skills, are found in the recent literature (Blau and Kahn, 2017). In any case, the female dummy variable is expected to have a negative coefficient ϑ. These standard economic theories are repeatedly verified in numerous wage studies of China and Eastern European countries that have experienced great transformation from the planned system to a market-oriented system. Therefore, as a starting point for our discussion, we propose the following hypothesis:

Hypothesis H1: *In both China and Eastern Europe, the coefficients of variables* *of work experience, schooling, and gender take on the theoretically predicted signs. Namely, coefficients γ and θ of the wage function in Equation (1) are positive, while coefficients δ and ϑ are negative.*

As mentioned in the Introduction, the issue that we would like to specially argue in this paper is the chronological evolution of the wage-experience profile, return to education, and gender wage gap in China and Eastern Europe. Thus, we hereinafter present our hypotheses regarding how parameters γ, δ, θ, and ϑ could have changed over the past decades.

The second hypothesis touches on the time trend of the wage-experience profile. In China, during the planned economy period (1949–1977), the unified graded wage system established in the public sector was extremely seniority based (Ma and Cheng, 2023). Under the economic transition period (after 1978), although the seniority-based wage system still was implemented as a kind of institutional inertia in the public sector, with the advancement of market-oriented reform, the influence of market mechanism on the wage determination system has increased (Lin et al., 1994; Lin et al., 2020; Ma and Li, 2022). Based on the human capital theory (Becker, 1964; Mincer, 1974), when a worker's wage level is mainly determined by educational attainment, the influence of the seniority wage system will become smaller. Thus, the wage–experience profile in China may become flattened over the past decades.

In Eastern Europe, the advancement of market-oriented reforms and the development of a new dynamic private sector caused a gradual shift from the centralized wage setting system, which often rewarded seniority in line with a predetermined wage grid, to a more flexible and decentralized system of wage determination. However, the pace of labor market reforms and the transformation of labor market institutions differed across countries (Roaf et al., 2014), causing great diversity in wage-setting systems across and within countries in the region. Besides, the restructuring of transition economies and the emergence of new industries and occupations increased rewards for younger and more adaptive people with modern skills. At the same time, sector-, occupation-, and firm-specific human capital accumulated in the old socialist system often became obsolete in the new economic environment. As a result, average returns to labor market experience in Eastern European counties were relatively small, and the wage–experience profiles were flatter as compared to those of Western economies (Rutkowski, 1997; Flanagan, 1998; Gorodnichenko and Sabirianova, 2005). For these reasons, we expect that the wage–experience profiles in Eastern Europe have flattened since the start of transition.

Hypothesis H2: *In both China and Eastern Europe, wage–experience profiles have flattened over the past decades. Namely, coefficients γ and δ approach zero over time both for China and Eastern Europe.*

The third hypothesis deals with changes in the return to education during the transition period. The changes in return to education in China are decided by two effects: (1) the positive effect due to the increase in demand for high-skilled workers, and (2) the negative effect due to the increase in the supply of highly educated workers that was caused by the Higher Education Expansion Policy that has been implemented by the Chinese government since 1999 (Knight et al., 2017; Ma, 2018). Although the number of university graduates increased from 0.95 million in 2000 to 7.97 million in 2020 (National Bureau of Statistics of China, 2021), because the Chinese government has enforced technology upgrading in industrial sectors (especially in high-technology manufacturing industries) since the 2000s (Zhang et al., 2018), the growth in the demand for highly skilled workers may be greater than that in the supply of more highly educated laborers, which may cause the increase in the return to education in China in the past decades.

Meanwhile, in Eastern Europe, it is expected that returns to education have been decreasing over time, especially since the early 2000s. There are several reasons for this. First, education attained under the old socialist system, with high vocational specialization and very weak non-routine cognitive and soft skills, could be inappropriate in a completely different economic system. Brunello et al. (2012) found that such an education was still valuable in the market economies of Eastern Europe more than 10 years after the fall of the Berlin Wall, but "only for females, college-educated males, and those who are fortunate enough to be employed…. Senior males who have attained only primary or secondary education under communism earn significantly lower returns in the post-transition Eastern European labor markets than equally educated Western Europeans employed in the West." The second reason is that the increasing supply of college and university graduates in the 2000s exceeded the growth in demand for highly skilled workers. Moreover, the large number of individuals with tertiary education diplomas did not automatically transform into a large number of highly skilled workers because of the low quality and relevance of education at higher levels (Sondergaard et al., 2012). As a result, many college and university graduates in Eastern European countries took jobs that did not require tertiary education, often facing a wage penalty for being overeducated relative to their matched counterparts with similar levels of education (Kupets 2015, 2016; ILO, 2019). By performing a meta-analysis of existing literature in European emerging markets, Horie and Iwasaki (2023) find support for the hypothesis that the returns to education decreased over time, even though more advanced economies located in the western part of the region still have higher returns to both secondary and higher education than other countries.

Hypothesis H3: *The wage effect of education in China has strengthened over time, while weakening in Eastern Europe. Namely, coefficient θ of the Chinese wage function has an increasing time trend, while that of Eastern Europe has a decreasing time trend.*

The fourth hypothesis predicts historical changes in the gender wage gap. In theory, the spread of a market mechanism could contribute to reducing the gender wage gap because, in a competitive market, companies should determine wage levels based on a worker's labor productivity, which may reduce the unreasonable wage discrimination against women. However, the growth of privately owned enterprises (POEs) in China may have the opposite effect, as employers may easily discriminate against female workers based on the employer discrimination hypothesis (Becker, 1957). Furthermore, with the progress of state-owned enterprise (SOE) reform, the influence of gender equality policies on the employment and wage decision-making processes in the public sector has been weakened (Ma, 2022), which may expand the gender wage gap in SOEs as well. Gustafsson and Li (2000), Li and Song (2013), Iwasaki and Ma (2020), and Ma (2022) indicate that the gender wage gap in China is likely to have widened during the transition period.

In contrast, the gender wage gap in Eastern Europe is likely to have narrowed over time. Iwasaki and Satogami (2023) highlight the major factors that may have contributed to a decrease in the gender wage gap in Eastern European countries during their transition to a market-oriented economy, including EU membership, intensified market competition, the presence of Western multinational corporations, and the integration of local companies into global supply chains, along with the increasing educational attainment of women. In addition to market forces, labor market institutions may also help reduce the gender wage gap over time. For example, Ganguli and Terrell (2006) find that the minimum wage played an important role in lowering the growth in inequality in Ukraine. This was more true for women than for men because a lion's share of women worked in low-paying formal jobs in post services, education, healthcare, social work, etc. Evidence from other countries shows that legislative changes aimed at promoting equal pay for work of equal value and removing barriers for women to previously male-dominated sectors and occupations, gender-sensitive collective bargaining, and even some active labor market policies can be effective in reducing gender pay gaps (World Bank, 2012; ILO, 2018).

Hypothesis H4: *The wage gap between male and female workers in China has widened over time, while shrinking in Eastern Europe. Namely, coefficient ϑ of the Chinese wage function has an increasing time trend, while that of Eastern Europe has a decreasing time trend.*

In the following sections, we examine the above four hypotheses by performing a large-scale comparative meta-analysis of the existing literature.

3 Literature Selection and Overview of Estimates Included in Meta-Analysis

This section describes how we searched for and identified papers to be included in the meta-analysis in this paper and then provides an overview of the estimates extracted from selected research works.[1]

As the first step in searching for studies in which coefficients γ, δ, θ, and ϑ obtained as outcomes from regression estimation of a Mincer-type wage function in China and Eastern Europe are available, we utilized the electronic literature databases of EconLit and Web of Science and accessed the websites of major academic publishers to identify relevant research works. The search covered the period from 1990 to fall of 2022.[2] We conducted an AND search for article titles using the term "*wage*" in combination with one of the terms "*emerging markets*," "*Central Europe*," "*Eastern Europe*," or "*China*" and the name of one of the Eastern European countries, obtaining approximately 680 articles. We then inspected each of these collected works and narrowed the literature to those studies that report target estimates. As a result, we selected 135 papers on China and 81 papers on Eastern European countries.[3]

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[1] The literature selection and meta-analysis in this paper were carried out in general conformity with the guidelines described in Havránek et al. (2020).

[2] The publishers include Emerald Insight, Oxford University Press, Sage Journals, ScienceDirect, Springer Link, Taylor & Francis Online, and Wiley Online Library. The final literature search was conducted in December 2022.

[3] **Appendix Table A1** lists the 216 selected studies. The literature included in the meta-analysis in this paper covers only studies in English in order to avoid a kind of selection bias that arises from the fact that we understand only Chinese and some Eastern European languages.

From the above 216 selected research works, we extracted a total of 6453 estimates.[4] The mean (median) of the number of collected estimates per study is 29.9 (20). The breakdown of the 6453 estimates is as follows: Both coefficients γ and δ account for 1549, coefficient θ accounts for 1634, and coefficient ϑ accounts for 1721. Note that each coefficient γ (i.e., estimate of a single term of experience) always accompanies its corresponding coefficient γ (i.e., estimate of a squared term of experience). With regard to coefficient ϑ, we use the reversed values of the estimates of male dummy variables together with the estimates of female dummy variables in order to focus on discrimination against women in terms of wage level. Hereinafter, we call collected estimates of coefficients γ, δ, θ, and ϑ studies of wage seniority, wage curve, return to education, and gender wage gap, respectively.

We transformed all 6453 collected estimates to partial correlation coefficients (PCCs) in order to adjust differences in the units of estimation results with or without logarithmic transformation of the wage variable. The PCC is a unitless statistic that measures the association of a dependent variable and the independent variable in question when other variables are held constant. It ranges between -1.0 and 1.0. When t_k and df_k denote the t value and the degree of freedom of the k-th estimate (k = 1, ..., K), respectively, the PCC (r_k) is calculated with the following equation:

$$r_k = \frac{t_k}{\sqrt{t_k^2 + df_k}}. \qquad (2)$$

Table 1 shows the descriptive statistics of the PCCs of the collected estimates, as well as the results of a t-test of means by study type and period. **Figure 1** illustrates the corresponding kernel density estimation results. To examine Hypotheses H2, H3, and H4, we computed the descriptive statistics and estimated the kernel density by dividing the collected estimates into three different time periods, consisting of (1) 1995 or before, (2) 1996–2005, and (3) 2006 or later, in addition to those for all studies, to test Hypothesis H1.

According to **Table 1**, the means of the estimates extracted from studies of wage seniority and return to education are statistically significantly different from zero and take a positive value, while those from studies of wage curve and gender wage gap are significantly negative, irrespective of the difference in target country/region. In addition, **Figure 1** displays their highly skewed distribution toward the positive side in Panels (a),

[4] Estimates of interaction terms of either experience, schooling, or gender dummy variable and other independent variables are not included in the meta-analysis in this paper.

(b), (e), and (f); in contrast, they are highly skewed toward the negative side in Panels (c), (d), (g), and (h). These observations are highly consistent with Hypothesis H1, which predicts the presence of a typical Mincer-type wage function in both China and Eastern Europe. The mean and distribution of the estimates by period share the same result with those of the whole period, suggesting that this fact has remained true throughout the past decades.

Furthermore, the descriptive statistics by period in **Table 1** indicate that the absolute values of the PCCs of coefficients γ and δ for both China and Eastern Europe and those of coefficients θ and ϑ for Eastern Europe tend to diminish as the time period approaches the present, while the absolute values of the PCCs of coefficients θ and ϑ for China show an upward trend in line with Hypotheses H2, H3, and H4. Panels (b), (d), (g), and (h) of **Figure 1** also demonstrate a similar time trend. We cannot say, however, that Panels (a), (c), (e), and (f) strongly back up the observations in **Table 1**.

In sum, the descriptive statistics and kernel density distributions of the collected estimates in **Table 1** and **Figure 1** overall support the hypotheses described in the previous section. However, we must interpret these findings with caution because the simple aggregation of the reported empirical results and an illustration of their distribution may lead us to a false conclusion. In other words, we should synthesize and compare the collected estimates, taking into account their precision and heterogeneity, as well as the possible influence of publication selection bias. The next section briefly introduces meta-analytic techniques to deal with these critical issues from the viewpoint of research synthesis.

4 Methodology of Meta-Analysis: A Brief Note

According to Stanley and Doucouliagos (2012) and Iwasaki (2020a), a meta-analysis conventionally consists of three steps: (a) meta-synthesis of collected estimates, (b) meta-regression analysis (MRA) of heterogeneity across studies, and (c) testing for publication selection bias. This paper follows this standard procedure.[5]

To synthesize PCCs, we use the meta fixed-effect model and the meta random-effects model. According to Cochran's Q test of homogeneity and I^2 and H^2 heterogeneity measures, we adopt the synthesized effect size of one of these two models.

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[5] The methodological description of the meta-analysis presented in this paper is kept to a minimum due to space limitations. For more details, see Borenstein et al. (2009), Stanley and Doucouliagos (2012), and Iwasaki (2020b, Chapter 1).

In addition to this traditional synthesis method, we also utilize the unrestricted weighted least squares average (UWA) approach proposed by Stanley and Doucouliagos (2017) and Stanley et al. (2017) as a new synthesis method. The UWA is less subject to influence from excess heterogeneity than the fixed-effect model. The UWA method regards as the synthesized effect size a point estimate obtained from the regression that takes the standardized effect size as the dependent variable and the estimation precision as the independent variable. Specifically, we estimate Eq. (3), in which there is no intercept term, and the coefficient, α, is utilized as the synthesized value of the PCCs:

$$t_k = \alpha(1/SE_k) + \varepsilon_k, \qquad (3)$$

where SE is the standard error of the PCC of the k-th estimate, and ε_k is a residual term. In theory, α in Eq. (3) is consistent with the estimate of the meta fixed-effect model.

Further, Stanley et al. (2017) proposed conducting a UWA of estimates, the statistical power of which exceeds the threshold of 0.80, and called this estimation method the weighted average of the adequately powered (WAAP). They stated that WAAP synthesis has less publication selection bias than the traditional random-effects model. Accordingly, we adopt the WAAP estimate as the best synthesis value whenever available. Otherwise, the traditional synthesized effect size is used as the second-best reference value.

Following the synthesis of collected estimates, we conduct an MRA to explore the factors causing heterogeneity between the selected studies. More concretely, we estimate a meta-regression model:

$$y_k = \beta_0 + \sum_{n=1}^{N-1} \beta_n x_{kn} + \beta_N SE_k + e_k, \qquad (4)$$

where y_k is the PCC of the k-th estimate, β_0 is the constant, x_{kn} denotes a meta-independent variable (also known as a moderator) 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 meta-regression coefficient to be estimated, and e_k is the meta-regression disturbance term.

There is no clear consensus among meta-analysts about the best model for estimating Eq. (4) (Iwasaki et al., 2020, 2022; Ono and Iwasaki, 2022). Hence, 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 weighed by the inverse of standard error as a measure of estimate precision; (2) the cluster-robust WLS weighed by the degrees of freedom to account for sample-size differences among the studies; (3) the cluster-robust WLS weighed by the inverse of the number of estimates in each study to avoid the domination of the results by studies with large numbers of estimates; (4) the multi-level mixed-effects RLM estimator; (5) the cluster-robust random-effects panel generalized least squares (GLS) estimator; and (6) the cluster-robust fixed-effects panel least squares dummy variable (LSDV) estimator. We report either a random-effects model or a fixed-effects model, according to the Hausman test of model specification. In this paper, we assume that meta-independent variables that are statistically significant and have the same sign in at least three of five models constitute robust estimates.

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 meta-independent variables could lead to multicollinearity. Accordingly, we estimate 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. We do this while 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. (4).

As the final stage of meta-analysis, we examine publication selection bias using a funnel plot and by performing an MRA test procedure consisting of 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 used widely in previous meta-studies.

A funnel plot is a scatter plot with the effect size (in the case of this paper, the PCC) on the horizontal axis and the precision of the estimate ($1/SE$) on the vertical axis. In the absence of publication selection bias, effect sizes reported by independent studies vary randomly and symmetrically around the true effect size. Moreover, according to the statistical theory, the dispersion of effect sizes is negatively correlated with the precision of the estimate. Therefore, the shape of the plot must look like an inverted funnel. In other words, if the funnel plot is not bilaterally symmetrical but is deflected to one side, then an arbitrary manipulation of the study area in question is suspected, in the sense that estimates in favor of a specific conclusion (i.e., estimates with an expected sign) are more frequently published.

The FAT–PET–PEESE procedure has been developed to test publication selection bias and the presence of genuine evidence in a more rigid manner: FAT can be performed by regressing the *t* value of the *k*-th estimate on 1/*SE* using Eq. (5), thereby testing the null hypothesis that the intercept term γ_0 is equal to zero:

$$t_k = \gamma_0 + \gamma_1(1/SE_k) + v_k, \qquad (5)$$

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

Even if there is 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 the coefficient γ_1 is equal to zero in Eq. (5). The rejection of the null hypothesis implies the presence of genuine empirical evidence. γ_1 is the coefficient of precision; therefore, it is called a PET.

Furthermore, Stanley and Doucouliagos (2012) also stated that an estimate of the publication selection bias–adjusted effect size can be obtained by estimating the following equation (6), which has no intercept. If the null hypothesis of $\gamma_1 = 0$ is rejected, then the nonzero true effect does actually exist in the literature, and the coefficient γ_1 can be regarded as its estimate.

$$t_k = \gamma_0 SE_k + \gamma_1(1/SE_k) + v_k \qquad (6)$$

This is the PEESE approach.

To test the robustness of the coefficients obtained from the above FAT–PET–PEESE procedure, we estimate Eqs. (5) and (6) using not only the unrestricted WLS estimator, but also the WLS estimator with bootstrapped standard errors, the cluster-robust WLS estimator, and the 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 the standard error. Moreover, the standard error is estimated, which causes attenuation bias in meta-analysis" (Cazachevici et al., 2020, p. 5).

The above FAT–PET–PEESE approach implicitly relies on the assumption that publication selection bias is linearly proportional to the size of the standard error, which might not be practical in some cases (Zigraiova et al., 2021). To deal with the possible nonlinear relationship between the two, some advanced techniques have been developed recently. They include the Top 10 approach, proposed by Stanley et al. (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 kinked 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 bias 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 paper, 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.

5 Results

This section reports the results obtained from a meta-analysis conducted in accordance with the procedure and methodology described in the previous section.

5.1 Meta-Synthesis

Table 2 presents meta-synthesis results subject to studies of wage seniority in China. As in **Table 1** and **Figure 1**, **Table 2** shows the results by period in addition to the result using all 1126 estimates extracted from the related literature.

In Column (b) of **Table 2**, Cochran's Q test of homogeneity rejects the null hypothesis at the 1% significance level, and the I^2 and H^2 statistics strongly suggest the presence of heterogeneity across studies. Therefore, the synthesized effect sizes of the meta random-effects model in Column (a) are preferred to those of the meta fixed-effect model. With respect to the results of the UWA and WAAP estimations in Column (c), a considerable number of estimates whose statistical power exceeds the threshold of 0.80 are secured. Accordingly, we adopt the WAAP synthesis values, which are more reliable than those of the UWA and the meta random-effects model.

As shown in the first row in Column (c) of **Table 2**, the synthesized effect size for all studies using the WAAP approach is statistically significant at the 1% level and takes a value of 0.115 in terms of PCC. This result suggests that, throughout the entire observation period, economically meaningful wage seniority existed in China, as

Hypothesis H1 predicts. At the same time, the WAAP synthesis values by period indicate that the degree of wage seniority in China experienced a gradual decline through the three periods. Actually, the synthesized effect size takes a value of 0.181 in the period of 1995 or before, while those in the years of 1996–2005 and the period of 2006 or later are estimated to be 0.092 and 0.095 in terms of PCC, respectively, which is consistent with Hypothesis H2.

We also performed a meta-synthesis of collected estimates by study type and period in addition to that of studies of wage seniority in China mentioned above. As a result, we obtained WAAP synthesis values with statistical significance at the 1% level for all cases.[6] **Figure 2** illustrates the WAAP synthesis results, with those of studies of wage seniority in China in Panel (a). As shown in the figure, the synthesized effect sizes in Panels (b), (e), and (f) show a positive sign as in Panel (a), while those in Panels (c), (d), (g), and (h) reveal a negative sign. All these findings strongly support Hypothesis H1. With regard to time-series changes in effect size, **Figure 2** verifies Hypotheses H2 to H4 except for the studies of the return to education and the gender wage gap in China. In fact, both Panels (e) and (g) demonstrate a U-shaped change in the synthesized effect size through the three periods, although they do not deny our expectation of the increasing tendency of the return to education and female wage discrimination in China from the era of the planned system to the present.

It is possible that the coarse division of the observation periods may mislead us. Hence, to examine the reliability of the synthesis results by period in **Table 2** and **Figure 2**, we examined changes over time in the scale of PCC through a more detailed subdivision of collected estimates. **Figure 3** shows the results. In all panels of the figure, the slopes of the approximate line are estimated statistically significant at the 1% level with a predicted sign. For instance, in line with Hypothesis H2, Panels (a) and (b) show that, as the average estimation year approaches the present year by year, the degree of wage seniority decreases by 0.0031 in China and by 0.0027 in Eastern Europe toward zero in terms of the PCC. In other words, our prediction is more strongly supported when the estimation period is divided into single-year units.

5.2 Meta-Regression Analysis

The meta-synthesis presented in the previous subsection enables explicit hypothesis testing by providing point estimates as synthesized effect sizes. Nevertheless, it fails to

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[6] **Appendix Table A2** reports the synthesis results in detail.

sufficiently consider the influence of heterogeneity across the selected studies on their reported estimates. This subsection, therefore, examines the credibility of synthesis results by estimating a multivariate meta-regression model in which diversity in study conditions and attributes is simultaneously controlled for.

As meta-independent variable x_{kn}, in addition to the variable of the average estimation year that is a key to hypothesis testing, we employed a series of moderators—length of estimation period, target region, target firm ownership, data type, survey data used, with/without log-transformation of the wage variable and estimation of independent variable in question with an intercepted variable(s), estimator, presence of control for selection bias and endogeneity, and selection of control variables—with potentially significant impact on the reported estimates. As expounded in the previous section, the meta-independent variables are estimated along with the standard errors of the PCCs using six different estimators.[7]

Estimation results of Eq. (4), with moderators selected through a BMA analysis and a WALS estimation using estimates available in studies of wage seniority in China as the dependent variable, are reported in **Table 3**. As shown in the table, five meta-independent variables—from original household survey to health—were chosen as moderators for this study type by the BMA-WALS estimation procedure.[8] Further, this table reports the cluster-robust random-effects panel GLS model as Model [5] because the Hausman test did not reject the null hypothesis that the errors are uncorrelated with the independent variables ($\chi^2 = 4.68$, $p = 0.5858$).

In **Table 3**, average estimation year, the key variable for testing Hypothesis H2, shows a negative coefficient with statistical significance at the 1% level in all five models. This implies that the effect size of a single term of experience reported in Chinese wage studies tends to decrease by 0.0021–0.0045 per year through the observation period, *ceteris paribus*. This result well corresponds with synthesis results in **Table 2** and **Figure 1**, as well as the single regression analysis in **Figure 3**. Thus, our expectation of the diminishing time trend of wage seniority in China is strongly

[7] The names, definitions, and descriptive statistics of the meta-independent variables are provided in **Appendix Table A3**. To avoid the multicollinearity that can arise from the simultaneous estimation of a large number of independent variables, we have inspected the correlation matrix and variance inflation factor (VIF) of all of the coded variables. As a result, we narrowed down the variables to the 27 listed in this table that fully met the criteria of a correlation coefficient of less than 0.7 and a VIF of less than 10.

[8] See **Appendix Table A4** for the procedure for selecting moderators.

reinforced.

We repeated the same MRA procedure by study type, in addition to that subject to studies of wage seniority in China mentioned above. **Table 4** exhibits estimates of average estimation year obtained from these additional MRA trials. From this table, we find that the variable of average estimation year is given a statistically robust coefficient with a predicted sign in all cases except for studies of the wage curve in Eastern Europe. Actually, in this study type, average estimation year shows a significant positive estimate in only two of five models; thus, it does not satisfy the criteria of robustness.

To sum up, the results of MRA in **Tables 3** and **4** provide overall strong support for the findings from meta-synthesis in the previous subsection, but with certain reservations about the time trend of the wage curve in Eastern Europe.

5.3 Test for Publication Selection Bias

As the final step of meta-analysis, this subsection tests for publication selection bias and the presence of genuine evidence in the literature.

Figure 4 illustrates a funnel plot by study type and period. As explained in the previous section, in the absence of publication selection bias, reported estimates vary randomly and symmetrically around the true effect size; as a consequence, the shape of the plot must look like an inverted funnel. If the true effect is assumed to be zero, as the dotted line in the figure depicts, it is clear that no study type has so-called "funnel symmetry" at all. If the WAAP synthesis value reported in **Table 2** and **Figure 2** is assumed to be the approximate value of the true effect, as drawn by the solid line, Panels (a), (c), and (e) seem to form an ideal distribution of collected estimates from the viewpoint of statistical theory. In sum, the funnel plots in **Figure 4** cannot deny that there is a risk of publication selection bias in most study types.

Test results of publication selection bias using the FAT–PET–PEESE procedure for studies of wage seniority in China are reported in **Table 5**. Panel (a) of the table shows that the null hypothesis that the intercept γ_0 is zero is rejected by the FAT in two of five models, suggesting that publication selection bias is unlikely to occur in this study type. Furthermore, the PET rejects the null hypothesis that the coefficient of the inverse of the standard errors (γ_1) is zero in all five models, meaning that the collected estimates do contain evidence of a nonzero true effect of wage seniority in China. Also, the PEESE approach in Panel (b) shows that the coefficient (γ_1) is statistically significantly different from zero in five models, implying that the real scale of wage seniority should be in a range from 0.1170 to 0.1641 during the entire observation period, in terms of PCC.

As pointed out in the previous section, the FAT–PET–PEESE method implicitly assumes a linear relationship between the standard error and publication selection bias, which may not be real in the case of this study type. For a robustness check, therefore, we performed alternative estimations of the publication selection bias–corrected effect size. **Table 6** shows the results. Although the synthesis value varies depending on the method applied, all of the estimates demonstrate the existence of a statistically significant and economically meaningful effect of work experience on wage levels in China, as the FAT-PET-PEESE test suggests.

We carried out the same test procedure subject to other study types using all collected estimates and those divided by period.[9] As a result, although publication selection bias was detected by the FAT in several study types, both the PET–PEESE approach and the alternative estimation methods—from the Top 10 to the *p*-uniform model—successfully generated a non-zero publication selection bias–corrected effect size for all cases in addition to that of wage seniority in China. **Figure 5** illustrates the PEESE and alternative estimates of the true effect size by study type and period. All panels in the figure provide evidence supporting Hypotheses H1 to H4 except for Panel (e), which indicates a U-shaped time-series change in the return to education in China.

In sum, although there is one exceptional case, irrespective of its methodology, the test results of publication selection bias generally support our predictions, as the meta-synthesis and the MRA did in the previous subsections.

6 Conclusions

In this paper, we compared the wage functions in China and Eastern Europe from the viewpoint of the impacts of work experience, education, and gender on wage levels through a comprehensive meta-analysis using 6453 estimates reported in 216 previous research works.

The results indicate that the wage systems of both China and Eastern Europe were structured consistently with economic theories after the end of the planned system. Nevertheless, it is also revealed that the shapes of their wage functions have changed dynamically through the past decades. Actually, we found that both China and Eastern Europe have experienced a flattening of their wage–experience profiles, implying that the impact of work experience on wage level was gradually diminishing, and, as a

[9] The test results are summarized in **Appendix Table A5**.

consequence, the wage seniority system was dissolving over time. At the same time, however, China and Eastern Europe showed quite contrasting changes in the wage effect of education and gender. In fact, according to our results, it is highly likely that the impact of education and gender on wage levels in China have been gradually increasing toward the present, while those in Eastern Europe have been declining. This evolutionary diversity of wage function is likely driven by differences in the transition process, the path-dependency of economic development, as well as social institutions of China and Eastern European countries.

Since the 1990s, both Eastern Europe and China have experienced significant changes in their economic systems. Their economies have become more market-oriented, globalization has progressed, and technological innovation, including digitalization, has advanced to a level comparable to that in developed countries. As well as significantly increased competition in the market, market transition policies have been accompanied by early retirement, the accelerated obsolescence of traditional skills, and accelerated early turnover due to hardening budget constraints of firms, all of which may have worked to flatten their wage–experience profiles. However, significant disparities in the economic development of China and Eastern Europe become apparent from the 2000s onward.

China has succeeded in creating a major manufacturing base as the world's factory on the back of its low-wage labor force. This success has led to an increasingly sophisticated industrial structure and a level of competitive innovation that has caused economic friction between the United States and China. In fact, the economic growth rate in the 2000s was remarkably high and remained high, although it declined slightly after the 2008 global economic crisis. Economic growth has led in parallel to higher education levels, with human capital bringing higher remuneration to workers and higher skills to firms, which has further encouraged increased human capital investment (Fang, 2019). However, while the vast Chinese market has expanded the skilled and highly qualified labor sphere with accumulated human capital, industries that rely on unskilled and semi-skilled labor have been also preserved. Women’s share of total employment in labor-intensive sectors such as agriculture, services and distribution, and the textile industry is high, which preserves the gender gap (Dasgupta et al., 2015).

Eastern Europe achieved economic growth after the transformational recession in the 1990s, but the growth could not continue stably. Since the global economic crisis, they have faced a slowdown in growth. Even though the market transition, the EU accession, and globalization have led to higher levels of education and higher qualifications, there was not sufficient demand for highly qualified labor under the international division of labor in Europe, which is biased toward labor-intensive sectors (Ikemoto and Shimuta, 2022), resulting in over-education or labor outflows of highly educated workers.

The findings reported in this paper have not received much attention from researchers so far; therefore, they may generate a great deal of controversy in the future.

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Table 1. Descriptive statistics of partial correlation coefficients, *t* -test, and Shapiro–Wilk normality test of collected estimates by study type and period

Study type and period	Number of estimates (K)	Mean	Median	S.D.	Max.	Min.	*t*- test[a]
Studies of wage seniority in China	1126	0.107	0.094	0.087	0.580	-0.125	41.271 ***
1995 or before	265	0.157	0.141	0.114	0.580	-0.125	22.290 ***
1996–2005	474	0.092	0.080	0.073	0.382	-0.092	27.281 ***
2006 or later	387	0.091	0.090	0.065	0.545	-0.045	27.463 ***
Studies of wage seniority in Eastern Europe	423	0.079	0.064	0.082	0.651	-0.125	19.917 ***
1995 or before	99	0.097	0.095	0.073	0.402	-0.047	13.300 ***
1996–2005	222	0.077	0.066	0.067	0.639	-0.074	17.120 ***
2006 or later	102	0.066	0.024	0.112	0.651	-0.125	6.010 ***
Studies of the wage curve in China	1126	-0.084	-0.068	0.095	0.190	-0.858	-29.687 ***
1995 or before	265	-0.117	-0.084	0.128	0.190	-0.858	-14.826 ***
1996–2005	474	-0.073	-0.057	0.089	0.127	-0.626	-17.846 ***
2006 or later	387	-0.075	-0.066	0.065	0.033	-0.428	-22.521 ***
Studies of the wage curve in Eastern Europe	423	-0.056	-0.046	0.065	0.277	-0.395	-17.935 ***
1995 or before	99	-0.081	-0.074	0.071	0.028	-0.395	-11.327 ***
1996–2005	222	-0.057	-0.049	0.048	0.096	-0.208	-17.719 ***
2006 or later	102	-0.031	-0.012	0.080	0.277	-0.268	-3.962 ***
Studies of the return to education in China	1278	0.180	0.171	0.111	0.566	-0.234	57.919 ***
1995 or before	266	0.139	0.116	0.120	0.528	-0.130	18.908 ***
1996–2005	450	0.194	0.188	0.100	0.566	-0.033	41.076 ***
2006 or later	562	0.188	0.183	0.111	0.554	-0.234	40.313 ***
Studies of the return to education in Eastern Europe	356	0.190	0.146	0.152	0.971	-0.039	23.596 ***
1995 or before	65	0.229	0.194	0.151	0.538	0.003	12.189 ***
1996–2005	109	0.222	0.180	0.160	0.709	-0.006	14.510 ***
2006 or later	182	0.156	0.133	0.140	0.971	-0.039	15.099 ***
Studies of the gender wage gap in China	951	-0.125	-0.115	0.085	0.213	-0.826	-45.356 ***
1995 or before	144	-0.097	-0.079	0.075	0.018	-0.671	-15.530 ***
1996–2005	374	-0.119	-0.110	0.084	0.088	-0.826	-27.370 ***
2006 or later	433	-0.141	-0.145	0.087	0.213	-0.589	-33.751 ***
Studies of the gender wage gap in Eastern Europe	770	-0.188	-0.164	0.144	0.055	-0.944	-36.297 ***
1995 or before	200	-0.286	-0.291	0.164	0.024	-0.910	-24.667 ***
1996–2005	305	-0.189	-0.182	0.124	0.055	-0.944	-26.735 ***
2006 or later	265	-0.112	-0.106	0.095	0.054	-0.517	-19.131 ***

Note: ***: Null hypothesis that the mean is zero is rejected at the 1% level.

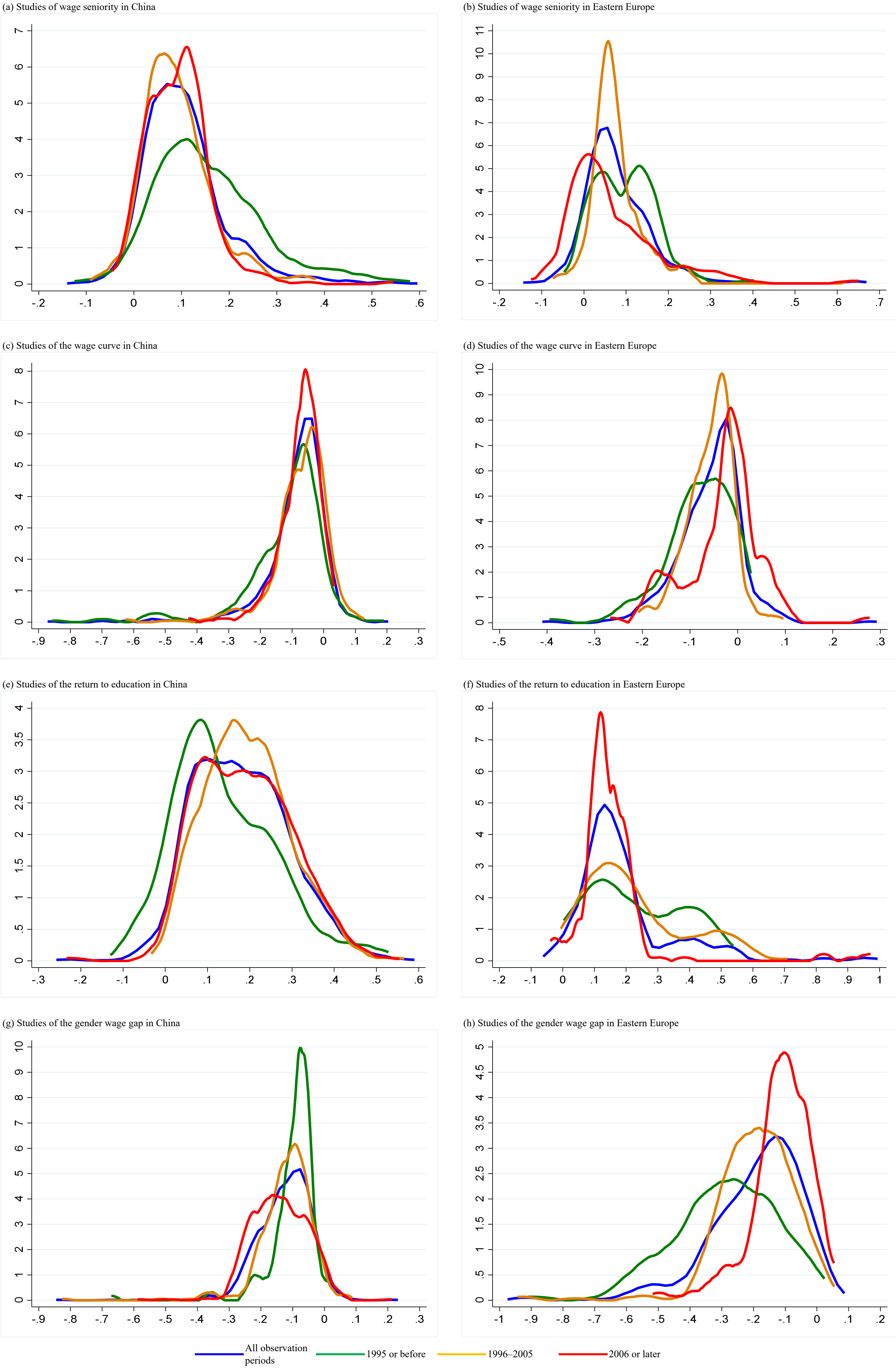

Figure 1. Kernel density estimation of collected estimates by study type and period

Note: The vertical axis is the kernel density. The horizontal axis is the partial correlation coefficient of collected estimates. See Table 1 for the descriptive statistics of estimates.

Table 2. Synthesis of estimates: Studies of wage seniority in China

	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's 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	1126	0.115 *** (222.79)	0.106 *** (42.67)	25396.12 *** (0.00)	95.28	21.17	0.115 *** (46.89)	890	0.115 *** (41.95)	0.023	0.999
1995 or before	265	0.181 *** (172.75)	0.157 *** (22.73)	10073.76 *** (0.00)	97.46	39.32	0.181 *** (27.97)	225	0.181 *** (25.83)	0.028	1.000
1996–2005	474	0.095 *** (122.91)	0.091 *** (29.83)	5778.52 *** (0.00)	92.95	14.19	0.095 *** (35.16)	358	0.095 *** (31.36)	0.021	0.994
2006 or later	387	0.092 *** (99.95)	0.091 *** (27.63)	4241.02 *** (0.00)	91.24	11.42	0.092 *** (30.15)	299	0.092 *** (26.55)	0.022	0.986

Notes: *** and ** denote statistical significance at the 1% and 5% 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 a statistical power of 0.80 or more, which is computed by referring to the UWA of all collected estimates

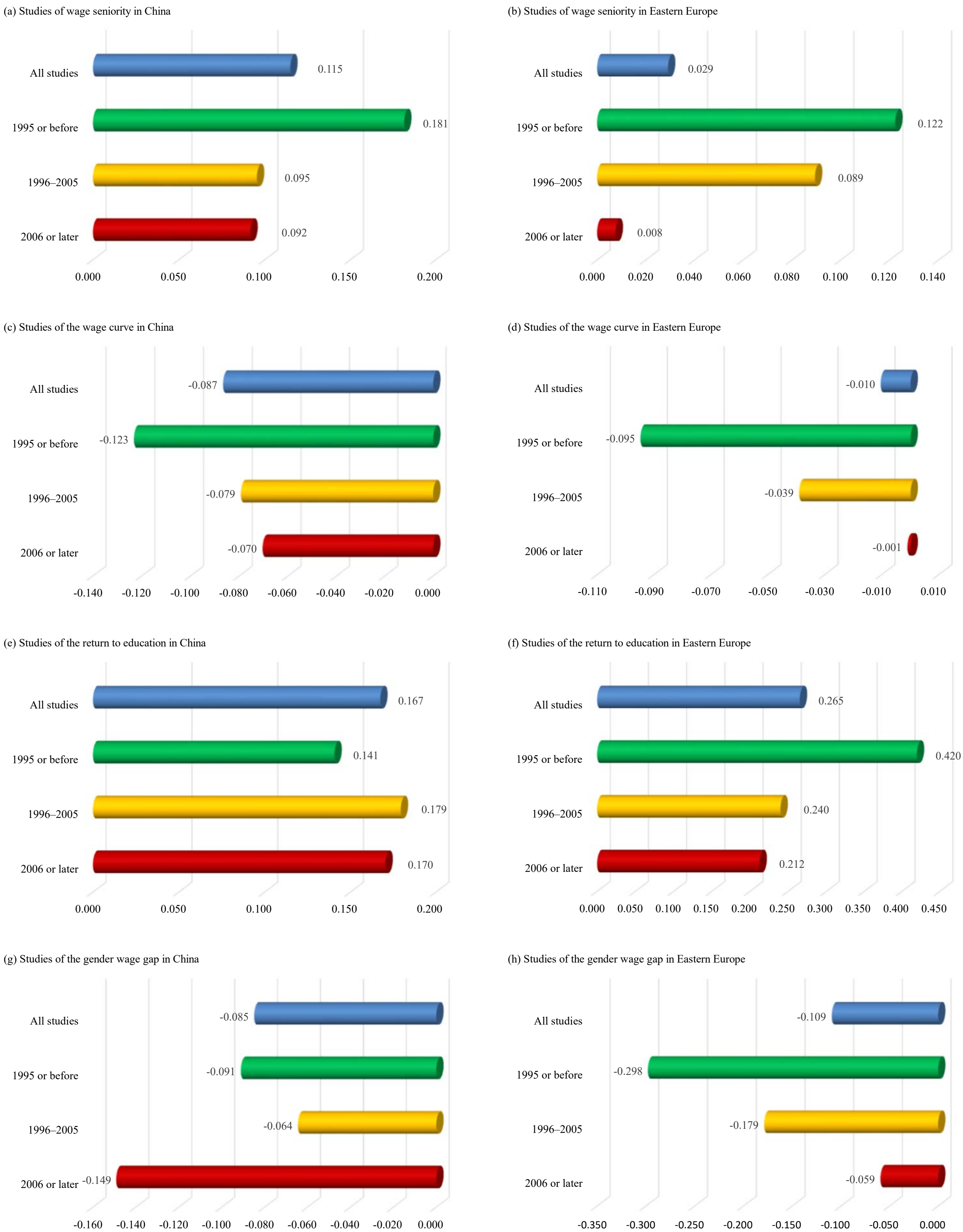

Figure 2. Illustrated comparison of synthesis results by study type and period

Notes: This figure uses the synthesized effect size by WAAP estimation reported in Appendix Table A2.

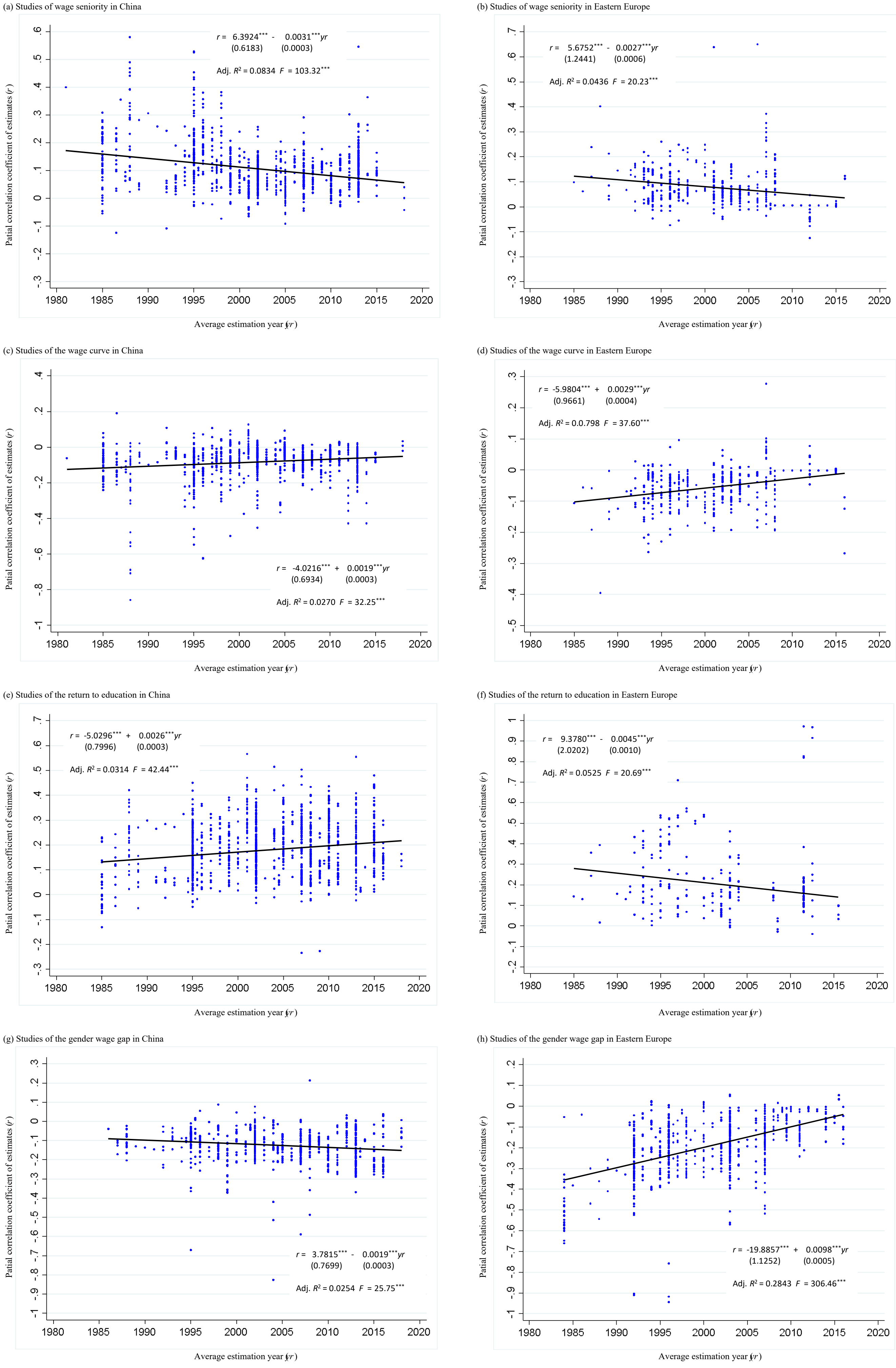

Figure 3. Chronological order of partial correlation coefficients by study type

Notes: The values in parentheses below the coefficients in the equations are robustness standard errors. *** denotes statistical significance at the 1% level.

Table 3. Meta-regression analysis of literature heterogeneity: Studies of wage seniority in China

Estimator (Analytical weight in brackets)[a]	Cluster-robust WLS [Precision]	Cluster-robust WLS [Sample size]	Cluster-robust WLS [Study size]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS
Meta-independent variable (default category)/model	[1]	[2]	[3]	[4]	[5][b]
Estimation period					
Average estimation year	-0.0036 ***	-0.0045 ***	-0.0034 ***	-0.0021 ***	-0.0021 ***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Selected moderators					
Original household survey	-0.1758 ***	-0.1835 ***	-0.1739 ***	-0.1842 ***	-0.1844 ***
	(0.011)	(0.014)	(0.011)	(0.011)	(0.011)
Log transformation	0.0086	-0.0009	-0.0222	-0.0096	-0.0102
	(0.014)	(0.018)	(0.019)	(0.012)	(0.012)
With intercepted variable	-0.0557 ***	-0.0692 ***	-0.0538 ***	-0.0576 ***	-0.0577 ***
	(0.011)	(0.017)	(0.017)	(0.011)	(0.011)
Job status	-0.0525 ***	-0.0487 ***	-0.0520 ***	-0.0344 **	-0.0338 **
	(0.011)	(0.011)	(0.016)	(0.014)	(0.014)
Health	-0.0278 **	-0.0224	-0.0380 **	-0.0467 **	-0.0472 **
	(0.013)	(0.015)	(0.016)	(0.019)	(0.020)
SE	-0.1957	-0.8875	-0.2468	0.3118	0.3166
	(0.374)	(0.576)	(0.405)	(0.357)	(0.361)
Intercept	7.4920 ***	9.3597 ***	7.1972 ***	4.5373 ***	4.5021 ***
	(2.085)	(2.425)	(2.614)	(1.468)	(1.478)
K	1126	1126	1126	1126	1126
R^2	0.223	0.287	0.227	-	0.160

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 Appendix Table A3 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 A4.

[a] Precision: inverse of the standard error; Sample size: degree of freedom; Study size: inverse of the number of reported estimates

[b] Hausman test: $\chi^2 = 4.68$, $p = 0.5858$

Table 4. Estimate of the variable of average estimation year obtained from meta-regression analysis by study type

Study type	Estimator (Analytical weight in brackets)[a]						*K*
	Cluster-robust WLS [Precision]	Cluster-robust WLS [Sample size]	Cluster-robust WLS [Study size]	Multilevel mixed-effects RML	Cluster-robust fixed-effects panel LSDV[b]	Cluster-robust random-effects panel GLS[b]	
Studies of wage seniority in Eastern Europe	-0.0054 *** (0.001)	-0.0060 *** (0.0004)	-0.0021 (0.001)	-0.0015 (0.001)	-0.0286 * (0.016)	-	423
Studies of the wage curve in China	0.0027 ** (0.001)	0.0025 *** (0.001)	0.0017 * (0.002)	0.0015 (0.001)	-	0.0015 (0.001)	1126
Studies of the wage curve in Eastern Europe	0.0031 *** (0.001)	0.0033 *** (0.001)	0.0005 (0.002)	0.0006 (0.001)	-	0.0005 (0.001)	423
Studies of the return to education in China	0.0033 *** (0.001)	0.0026 ** (0.001)	0.0045 *** (0.001)	0.0038 *** (0.001)	0.0035 *** (0.001)	-	1278
Studies of the return to education in Eastern Europe	-0.0046 (0.003)	-0.0108 * (0.005)	-0.0043 * (0.002)	-0.0029 (0.002)	-0.0100 ** (0.004)	-	356
Studies of the gender wage gap in China	-0.0028 *** (0.001)	-0.0032 ** (0.001)	-0.0016 (0.001)	-0.0021 *** (0.001)	-	-0.0021 *** (0.001)	951
Studies of the gender wage gap in Eastern Europe	0.0093 *** (0.002)	0.0061 ** (0.002)	0.0064 *** (0.002)	0.0108 *** (0.003)	0.0034 ** (0.005)	-	770

Notes: Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. The variable of the average estimation year was estimated with a standard error of partial correlation coefficient and selected moderators that were estimated 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.

[a] Precision: inverse of the standard error; Sample size: degree of freedom; Study size: inverse of the number of reported estimates

[b] Reported estimates are obtained from the selected model by Hausman test of model specification of cluster-robust fixed-effects and random-effects panel models. Otherwise, a dash "-" is described.

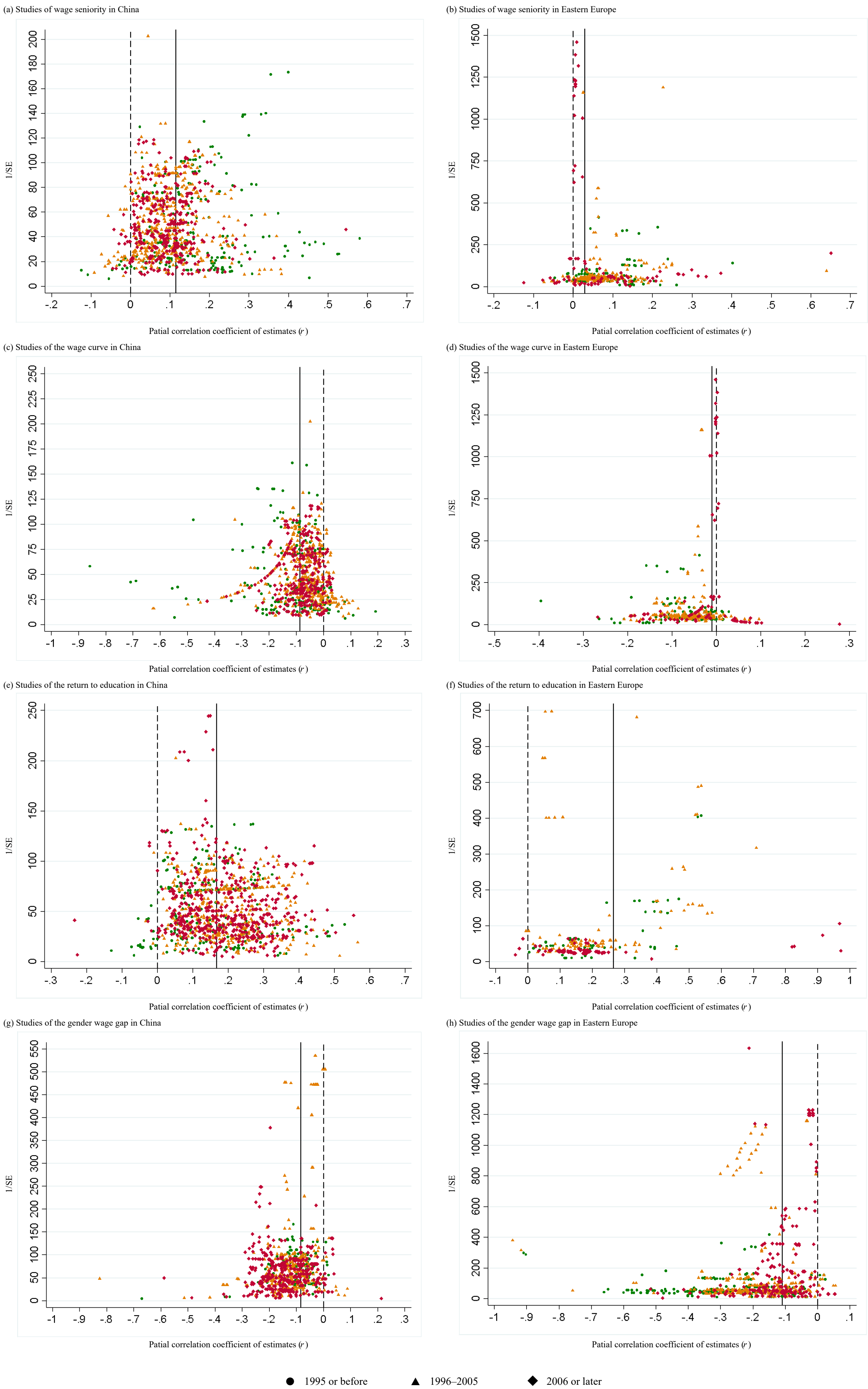

Figure 4. Funnel plot of partial correlation coefficients by study type and period

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

Table 5. Meta-regression analysis of publication selection bias: Studies of wage seniority in China

(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 fixed-effects panel LSDV	IV
Model	[1]	[2]	[3]	[4][a]	[5]
Intercept (FAT: H_0: $\gamma_0 = 0$)	-1.2555 **	-1.2555 **	-1.2555	-0.6312	-0.0528
	(0.494)	(0.517)	(0.849)	(0.762)	(0.347)
$1/SE$ (PET: H_0: $\gamma_1 = 0$)	0.1335 ***	0.1335 ***	0.1335 ***	0.1211 ***	0.1096 ***
	(0.011)	(0.012)	(0.019)	(0.015)	(0.006)
K	1126	1126	1126	1126	1126
R^2	0.395	0.395	0.395	0.395	0.383

(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	-8.1095 *	-8.1095 *	-8.1095	9.6525	-45.6839 ***
	(4.194)	(4.242)	(8.000)	(7.480)	(9.618)
$1/SE$ (H_0: $\gamma_1 = 0$)	0.1170 ***	0.1170 ***	0.1170 ***	0.1267 ***	0.1641 ***
	(0.117)	(0.006)	(0.011)	(0.006)	(0.011)
K	1126	1126	1126	1126	1126
R^2	0.663	0.663	0.663	-	-

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 as an instrument of the standard error. *** and ** denote statistical significance at the 1% and 5% levels, respectively.

[a] Hausman test: $\chi^2 = 10.15$, $p = 0.0014$

Table 6. Alternative estimates of publication selection bias–corrected effect size: Studies of wage seniority in China

Method	Top 10[a]	Selection model[b]	Endogeneous kink model[c]	*p*-uniform[d]
Model	[1]	[2]	[3]	[4]
Publication selection bias–corrected effect size	0.1310 ***	0.1330 ***	0.1335 ***	0.1129 ***
	(0.007)	(0.015)	(0.005)	(0.001)
K	112	1126	1126	1126

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)

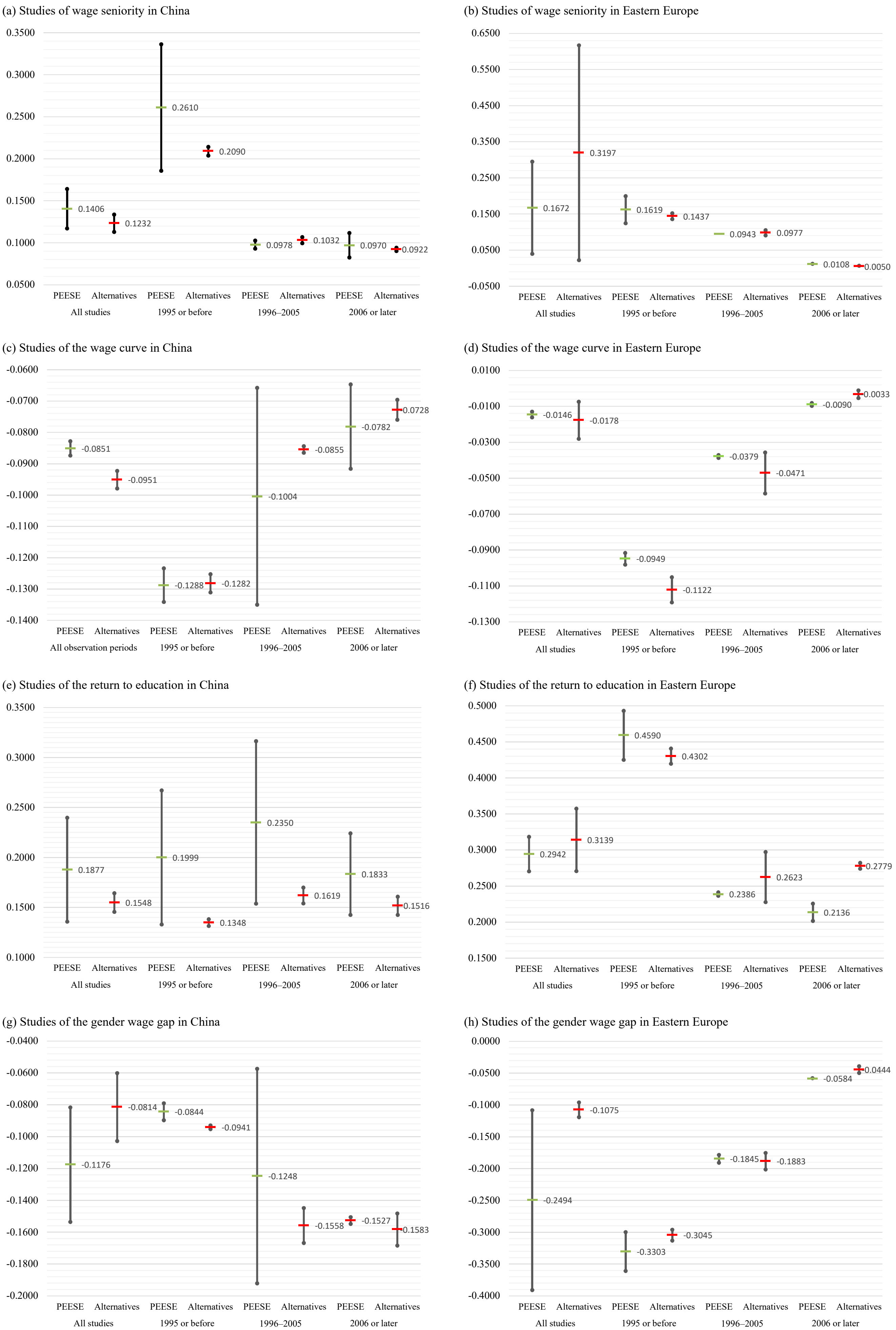

Figure 5. Illustrated comparison of publication selection bias–corrected effect size using the PEESE approach and alternative estimations methods by study type and period

Notes: Illustration based on Appendix Table A5. The straight lines in the figure show the maximum and minimum ranges of the estimated publication selection bias–adjusted effect size, with their intermediate values indicated by a bar.

Appendix Table A1. List of selected studies on wage function in China and Eastern Europe for meta-analysis

(a) Chinese Studies

No.	Author(s) (Publication year)	Publication media	Estimation period		Reported variable type			Number of collected estimates
			From	To	Working years	Schooling years	Gender dummy variable	
1	Knight and Lina (1991)	Oxford Bulletin of Economics and Statistics	1986	1986			✓	2
2	Gregory and Meng (1995)	Journal of Comparative Economics	1985	1985	✓	✓		69
3	Meng (1995)	Education Economics	1985	1985	✓	✓		30
4	Meng (1996)	Applied Economics	1985	1985	✓	✓		60
5	Meng and Kidd (1997)	Journal of Comparative Economics	1981	1987	✓			4
6	Meng (1998)	Applied Economics	1995	1995	✓	✓	✓	22
7	Meng (1998)	Labour Economics	1986	1987	✓	✓		46
8	Maurer-Fazio (1999)	China Economic Review	1989	1992	✓	✓		36
9	Gustafsson et al. (2001)	Economic Development and Cultural Change	1988	1988			✓	1
10	Liu (2001)	Applied Economics Letters	1988	1988	✓	✓	✓	8
11	Meng and Zhang (2001)	Journal of Comparative Economics	1995	1996	✓	✓	✓	12
12	Xiao (2001)	China Review	1997	1997		✓	✓	6
13	Zhao (2001)	China Economic Review	1996	1996	✓	✓	✓	28
14	Dong and Bowles (2002)	China Economic Review	1998	1998	✓	✓	✓	56
15	Ho et al. (2002)	Economics of Transition	1999	1999	✓	✓	✓	80
16	Huang et al. (2002)	LABOUR	1995	1998	✓	✓	✓	46
17	Hughes and Maurer-Fazio (2002)	Pacific Economic Review	1992	1992			✓	4
18	Zhang et al. (2002)	China Economic Review	1988	1996		✓	✓	3
19	Knight and Song (2003)	Economics of Transition	1995	1998			✓	2
20	Li (2003)	Economics of Education Review	1996	1996	✓	✓	✓	48
21	Heckman and Li (2004)	Pacific Economic Review	2000	2000	✓		✓	6
22	Li and Luo (2004)	Pacific Economic Review	1995	1995	✓	✓	✓	35
23	Yueh (2004)	Asian Economic Journal	1995	1999		✓	✓	8
24	Appleton et al. (2005)	Journal of Comparative Economics	1988	2002	✓	✓	✓	32
25	Bishop et al. (2005)	Economics of Transition	1988	1995	✓	✓		70
26	Chen et al. (2005)	Economic Development and Cultural Change	1996	1996	✓	✓		30
27	Dong (2005)	Journal of Comparative Economics	1994	2001	✓		✓	66
28	Lui and Wong (2005)	Applied Economics Letters	2000	2000	✓	✓	✓	8
29	Zhang et al. (2005)	Journal of Comparative Economics	1988	2001	✓	✓	✓	56
30	Knight and Li (2006)	China Economic Review	2000	2000	✓		✓	9
31	Liu and Xiao (2006)	Education Economics	1993	1998		✓	✓	16
32	Shu et al. (2007)	Social Science Quarterly	2000	2000		✓	✓	4
33	Wang and Tokunaga (2007)	Studies in Regional Science	1995	2004		✓	✓	11
34	de Brauw and Rozelle (2008)	Review of Development Economics	2000	2000	✓	✓	✓	20
35	Ma and Ng (2008)	Applied Economics	1997	1997	✓			6
36	Qian and Smyth (2008)	Post-Communist Economies	2005	2005	✓	✓	✓	68
37	Wang and Cai (2008)	Review of Development Economics	2001	2001	✓	✓		24
38	Zhang et al. (2008)	China & World Economy	2005	2005	✓	✓	✓	7
39	Appleton et al. (2009)	Journal of Development Studies	1988	1999	✓		✓	18
40	Bargain et al. (2009)	Review of Income and Wealth	1987	2004	✓			48
41	Deng and Li (2009)	CESifo Economic Studies	1988	2002	✓	✓	✓	12
42	Guo and Hammitt (2009)	Envrionment Resource Economics	1995	1995	✓	✓	✓	32
43	Liu and Sicular (2009)	Chinese Economy	2002	2002		✓		2
44	Gao and Smyth (2010)	Journal of Development Studies	2005	2005	✓	✓		12
45	Hering and Poncet (2010)	Review of Economics and Statistics	1995	1995		✓	✓	38
46	Qiu and Hudson (2010)	Economic Change and Restructuring	1989	2000	✓	✓	✓	16
47	Shi et al. (2010)	China & World Economy	1986	2006		✓		6
48	Wu (2010)	Asian Economic Journal	2003	2006		✓	✓	18
49	Cai and Du (2011)	China Economic Review	2001	2010	✓	✓	✓	21
50	Chi et al. (2011)	China Economic Review	1987	2004			✓	12
51	Gao and Smyth (2011)	Applied Economics Letters	2007	2007	✓	✓	✓	20
52	Li and Dong (2011)	Contemporary Economic Policy	1995	2001	✓	✓		120

53	Mukhopadhyay et al. (2011)	Chinese Economy	2007	2007	✓			12
54	Song et al. (2011)	Chinese Economy	2007	2007		✓	✓	5
55	Zhong (2011)	China Economic Review	2002	2002	✓	✓	✓	120
56	Demurger et al. (2012)	China Economic Review	2002	2007	✓	✓	✓	40
57	Han et al. (2012)	Journal of International Economics	1988	2008			✓	12
58	Kang and Peng (2012)	Post-Communist Economies	1989	2009	✓	✓		71
59	Lee (2012)	China Economic Review	2005	2005	✓	✓	✓	20
60	Magnani and Zhu (2012)	Regional Science and Urban Economics	2002	2002		✓		8
61	Mishra and Smyth (2012)	Journal of Environmental Planning and Management	2007	2007	✓	✓	✓	52
62	Ren and Miller (2012)	Journal of Development Studies	2006	2006	✓	✓	✓	24
63	Rickne (2012)	Review of Income and Wealth	2004	2004			✓	3
64	Yang and Mayston (2012)	Chinese Economy	2003	2003		✓	✓	2
65	Cheng et al. (2013)	Habitat International	2008	2008		✓	✓	24
66	Jia and Dong (2013)	Cambridge Journal of Economics	1990	2005	✓			88
67	Lu and Wang (2013)	Social Science Research	1995	2005			✓	5
68	Messinis (2013)	China Economic Review	2002	2002			✓	11
69	Wang (2013)	Oxford Bulletin of Economics and Statistics	1995	2002		✓		64
70	Xiu and Gunderson (2013)	Contemporary Economic Policy	2008	2008		✓		12
71	Xiu and Gunderson (2013)	LABOUR	1995	2002	✓	✓	✓	134
72	Zuo (2013)	Australian Economic Review	2006	2006	✓	✓	✓	8
73	Mishra and Smyth (2014)	Review of Development Economics	2007	2007	✓	✓	✓	28
74	Xing (2014)	Economics of Transition	2002	2002	✓	✓		30
75	Xue et al. (2014)	China Economic Review	2005	2010	✓	✓	✓	24
76	Bian et al. (2015)	Social Networks	1999	1999		✓	✓	8
77	Cai and Liu (2015)	Journal of Comparative Economics	2002	2002	✓	✓		36
78	Gao and Smyth (2015)	Journal of the Asia Pacific Economy	2001	2010	✓	✓	✓	96
79	Gustafsson et al. (2015)	China Economic Review	2002	2002			✓	2
80	Hu (2015)	World Development	2007	2007		✓		19
81	Kwon et al. (2015)	Pacific Economic Review	1988	2007	✓		✓	27
82	Mishra and Smyth (2015)	Economic Modelling	2007	2011	✓	✓	✓	40
83	Wang et al. (2015)	China Economic Review	2009	2009	✓	✓	✓	55
84	Yamamura et al. (2015)	Economics and Human Biology	2008	2008		✓		15
85	Hare (2016)	China Economic Review	1991	2011	✓			8
86	Qi and Dong (2016)	Feminist Economics	2008	2008	✓	✓		18
87	Whalley and Xing (2016)	International Labour Review	1995	2007		✓		36
88	Zhang et al. (2016)	China Economic Review	2007	2007	✓	✓		15
89	Zhu (2016)	China Economic Review	2002	2007	✓	✓	✓	64
90	Kong (2017)	International Labour Review	2007	2007			✓	5
91	Li et al. (2017)	China Economic Review	1994	2009			✓	15
92	Liu (2017)	Asian Economic Journal	2008	2008	✓	✓	✓	39
93	Long et al. (2017)	Journal of Chinese Economic and Business Studies	2008	2008		✓	✓	14
94	McLaughlin (2017)	Journal of Comparative Economics	1988	2002	✓	✓	✓	95
95	Qu and Zhao (2017)	China Economic Review	2002	2007	✓	✓	✓	48
96	Chen et al. (2018)	Jounrnal of Population Economics	2007	2007		✓		2
97	Li et al. (2018)	Asian Economic Papers	1995	2013	✓	✓	✓	32
98	Ma (2018)	China Economic Review	2002	2013	✓		✓	72
99	Ma (2018)	Post-Communist Economies	2002	2013	✓	✓	✓	66
100	Wang and Lien (2018)	China Economic Review	2013	2013	✓	✓	✓	90
101	Wang et al. (2018)	Review of International Economics	2010	2010			✓	4
102	Wu and Wang (2018)	China Economic Review	2012	2012			✓	12
103	Yao et al. (2018)	China Economic Review	2009	2009	✓	✓	✓	32
104	Lovely et al. (2019)	China Economic Review	1995	2007		✓	✓	40
105	Lyu and Chen (2019)	Urban Studies	2011	2011	✓	✓	✓	22
106	MacDonald and Hasmath (2019)	International Labour Review	2011	2011	✓	✓	✓	69
107	Pan et al. (2019)	China Economic Review	2002	2013	✓	✓	✓	112
108	Peng (2019)	Journal of the Asia Pacific Economy	2010	2010	✓	✓	✓	48
109	Qu et al. (2019)	Economic Research—Ekonomska Istrazivanja	2010	2014	✓			64
110	Wang et al. (2019)	China Agricultural Economic Review	2004	2015	✓	✓	✓	104
111	Zhao et al. (2019)	Economic Research—Ekonomska Istrazivanja	2013	2013	✓	✓	✓	26

112	Asadullah and Xiao (2020)	Structural Change and Economic Dynamics	2010	2015	✓	✓	✓	116
113	Cheng et al. (2020)	Asian Development Review	2015	2015		✓	✓	18
114	Chou et al. (2002)	Economic Research—Ekonomska Istrazivanja	2011	2011	✓	✓	✓	56
115	Gustafsson and Wan (2020)	China Economic Review	1988	2013	✓	✓	✓	40
116	Hou et al. (2020)	China Economic Review	2010	2016		✓		7
117	Howell (2020)	Journal of Urban Economics	2012	2012			✓	7
118	Nikolev et al. (2020)	Pacific Economic Review	1988	2013			✓	5
119	Su et al. (2020)	North American Journal of Economics and Finance	1989	2011	✓		✓	54
120	Zhang (2020)	Australian Journal of Agricultural and Resource Economics	1990	2010	✓	✓		96
121	Zhao (2020)	China Economic Review	2005	2005			✓	12
122	Guo et al. (2021)	China & World Economy	2012	2015		✓	✓	8
123	Hu (2021)	Asian Geographer	2013	2013	✓	✓	✓	60
124	Ma (2021, Chapter 4)	In Ma, Xinxin, Female Employment and Gender Gaps in China	2002	2013	✓	✓	✓	8
125	Ma and Cheng (2021)	Emerging Markets Finance & Trade	2013	2015	✓	✓	✓	12
126	Ren et al. (2021)	Economic Research—Ekonomska Istrazivanja	2013	2013			✓	16
127	Sun et al. (2021)	Economic and Political Studies	1988	2013	✓	✓	✓	39
128	Wu et al. (2021)	Review of Development Economics	2008	2008		✓	✓	28
129	Zhang et al. (2021)	Applied Economics	2016	2016		✓	✓	51
130	Li and Zhang (2022)	Economic Research—Ekonomska Istrazivanja	2004	2013	✓	✓	✓	96
131	Liu and Kawata (2022)	Applied Economics	2008	2008	✓	✓	✓	24
132	Ma (2022)	Journal of Asian Economics	2002	2018			✓	12
133	Ma (2022)	Journal for Labour Market Research	2014	2018			✓	13
134	Ma and Li (2022)	China & World Economy	2013	2018	✓	✓	✓	24
135	Su et al. (2022)	Emerging Markets Finance & Trade	1989	2011			✓	18

(b) Eastern European studies

No.	Author(s) (Publication year)	Publication media	Estimation period		Reported variable type			Number of collected estimates
			From	To	Working years	Schooling years	Gender dummy variable	
1	Flanagan (1995)	IMF Staff Papers	1988	1994	✓		✓	24
2	Newell and Reilly (1996)	Labour Economics	1992	1992		✓		6
3	Rutkowski (1996)	Economics of Transition	1987	1993	✓	✓	✓	24
4	Grogan (1997)	Tinbergen Institutie DP No. 97-075/3	1994	1994		✓	✓	2
5	Rutkowski (1997)	MOST-MOST	1987	1996	✓	✓	✓	32
6	Bedi (1998)	Journal of Development Studies	1996	1996	✓		✓	10
7	Newell and Socha (1998)	Economics of Transition	1996	1996	✓			24
8	Noorkoiv et al. (1998)	Economics of Transition	1989	1995	✓		✓	25
9	Filer et al. (1999)	Labour Economics	1995	1997		✓		12
10	Kroncke and Smith (1999)	Economics of Transition	1994	1994		✓		7
11	Paternostro and Sahn (1999)	World Bank Policy Research WP No. 2113	1994	1994	✓			8
12	Reilly (1999)	Economics of Transition	1992	1996			✓	24
13	Gustafsson et al. (2001)	Economic Development and Cultural Change	1989	1989			✓	1
14	Lehmann and Wadsworth (2001)	IZA DP No. 410	1994	1998			✓	6
15	Newell and Reilly (2001)	Economic Systems	1984	1996			✓	168
16	Deloach and Hoffman (2002)	American Economic Journal	1994	1996	✓			12
17	Jolliffe (2002)	Journal of Comparative Economics	1995	1995			✓	1
18	Puhani (2002)	Economic Systems	1994	1998			✓	6
19	Adamchik et al. (2003)	International Journal of Manpower	1994	2001	✓			48
20	Guariglia and Kim (2003)	Economics of Transition	1994	1998			✓	1
21	Delteil et al. (2004)	Journal of Comparative Economics	1989	1998	✓		✓	34
22	Falaris (2004)	Journal of Comparative Economics	1995	1995	✓			8
23	Andren et al. (2005)	Journal of Comparative Economics	1990	2000	✓	✓	✓	64
24	Co et al. (2005)	Review of Development Economics	1993	1993	✓	✓	✓	40
25	Goh and Javorcik (2005)	World Bank Policy Research WP No. 3552	1994	2001			✓	1
26	Gorodnichenko and Sabirianova (2005)	Journal of Comparative Economics	1985	2002	✓	✓	✓	80
27	Jurajda (2005)	Czech Journal of Economics and Finance	2002	2002		✓		9
28	Munich et al. (2005)	Review of Economics and Statistics	1991	1996	✓	✓		44
29	Ogloblin and Brock (2005)	Economic Systems	2000	2002	✓			4

30	World Bank (2005)	World Bank Ukraine Jobs Study	2003	2004	✓	✓	✓	136
31	Brown et al. (2006)	Journal of Comparative Economics	1997	2003	✓	✓	✓	20
32	Ogloblin and Brock (2006)	Post-Communist Economies	2002	2004			✓	1
33	Pastore and Verashchagina (2006)	Comparative Economic Studies	1996	2001	✓		✓	28
34	Earle and Telegdy (2007)	In Bender et al. eds., The Analysis of Firms and Employees	1992	2003	✓		✓	9
35	Kazakova (2007)	Economics of Transition	1996	2002	✓		✓	44
36	Myck et al. (2007)	Economics of Transition	1996	1996			✓	1
37	Cattaneo (2008)	European Journal of Comparative Economics	2002	2002			✓	1
38	Csengodi et al. (2008)	Review of World Economics	1992	2001	✓		✓	15
39	Dohmen et al. (2008)	Journal for Labour Market Research	1997	2002	✓		✓	62
40	Yamaguchi (2008)	Eastern European Economics	1995	2002			✓	4
41	Jackson and Mach (2009)	Economics of Transition	1988	1998		✓	✓	12
42	Krillo and Masso (2010)	Research in Economics and Business: Central and Eastern Europe	1997	2007	✓			8
43	Nestic (2010)	Croatian Economic Survey	1998	2008	✓		✓	44
44	Bouton et al. (2011)	World Bank Policy Research WP No. 5764	2006	2006	✓		✓	19
45	Eriksson and Pytlikova (2011)	Economics of Transition	2006	2006	✓		✓	10
46	Holscher et al. (2011)	Post-Communist Economies	2007	2007	✓		✓	81
47	Hoti (2011)	SEE Journal	2002	2002		✓		4
48	Kecmanovic and Barrett (2011)	Comparative Economic Studies	2001	2005	✓			32
49	Kovacheva (2011)	Post-Communist Economies	1995	2003	✓	✓	✓	56
50	Pastore and Verashchagina (2011)	Economics of Transition	1996	2006	✓			24
51	Andren (2012)	Economic Modelling	1994	2000			✓	16
52	Kecmanovic (2012)	Economic Systems	2001	2005	✓			8
53	Mysikova (2012)	Prague Economic Papers	2008	2008	✓	✓		24
54	Pignatti (2012)	IZA Journal of Labor & Development	2003	2007			✓	100
55	Voinea and Mihaescu (2012)	Economics of Transition	2004	2009			✓	8
56	Eriksson et al. (2013)	Economics of Transition	1998	2006			✓	18
57	Vodopivec (2014)	Eastern European Economics	1992	2001			✓	2
58	Gustafsson et al. (2015)	China Economic Review	2003	2003			✓	22
59	Tiwari et al. (2015)	World Bank Policy Research WP No. 7291	2006	2010	✓		✓	3
60	Balcar and Gottvald (2016)	Ekonomicky casopis	2008	2014	✓		✓	28
61	Bezeredi and Urban (2016)	Financial Theory and Practice	2012	2012	✓			28
62	Nye et al. (2017)	Economics and Human Biology	2011	2012		✓		144
63	Perugini and Pompei (2017)	World Development	2007	2012			✓	56
64	Zhou and Nelson (2017)	SAFA Conference Paper	2012	2013		✓		8
65	Grotkowska et al. (2018)	Economics of Transition	2012	2012			✓	4
66	Vilerts (2018)	Baltic Journal of Economics	2015	2015			✓	8
67	de Silva and Kupets (2019)	In World Bank, Skills for More and Better Jobs in Serbia	2015	2016		✓	✓	26
68	Rosso (2019)	Labour Economics	1998	2008		✓		1
69	Vahter and Masso (2019)	Review of World Economics	2011	2011			✓	28
70	Vasilescu and Begu (2019)	Applied Economics Letters	2016	2016			✓	1
71	Grabowski and Korczak (2020)	E&M Economics and Management	2010	2016			✓	4
72	Kossova et al. (2020)	Journal of Economic Studies	2016	2016	✓			6
73	Lehmann et al. (2020)	Comparative Economic Studies	2007	2015			✓	3
74	Liwinski (2020)	Eastern European Economics	2001	2005		✓		6
75	Masso et al. (2020)	Unpublished manuscript	2006	2017			✓	1
76	Rudakov and Prakhov (2020)	Higher Education Quarterly	2015	2017			✓	4
77	Tovar-Garcia (2020)	Journal of Education and Work	2000	2017		✓	✓	20
78	Karabchuk et al. (2021)	In Karabchuket al. eds., Gendering Post-Soviet Space	2000	2015	✓			24
79	Laparsek et al. (2021)	Economic Systems	2015	2015	✓			20
80	Krstic (2021)	Economic Systems	2016	2016			✓	3
81	Madga and Salach (2021)	Empirical Economics	2014	2014			✓	12

Notes: Estimation period may differ depending on target country. Deteiled bibliographic information of the selected research works is available upon request.

Appendix Table A2. Synthesis of estimates

Study type and period	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's 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
Studies of wage seniority in Eastern Europe	423	0.030 *** (171.99)	0.079 *** (19.51)	120000.00 *** (0.00)	99.79	469.57	0.030 *** (10.23)	98	0.029 *** (4.76)	0.019	0.367
1995 or before	99	0.122 *** (138.80)	0.094 *** (12.70)	6628.18 *** (0.00)	98.33	59.98	0.122 *** (16.88)	90	0.122 *** (16.07)	0.018	1.000
1996–2005	222	0.089 *** (228.89)	0.078 *** (16.90)	45974.06 *** (0.00)	99.10	110.50	0.089 *** (15.87)	212	0.089 *** (15.51)	0.020	0.996
2006 or later	102	0.010 *** (47.05)	0.067 *** (5.85)	22430.66 *** (0.00)	99.96	222.09	0.010 *** (3.16)	19	0.008 *** (5.31)	0.017	0.083
Studies of the wage curve in China	1126	-0.087 *** (-167.63)	-0.084 *** (-30.60)	22008.08 *** (0.00)	96.13	25.84	-0.087 *** (-37.90)	755	-0.087 *** (-31.89)	0.023	0.967
1995 or before	265	-0.122 *** (-115.67)	-0.118 *** (-14.86)	10477.90 *** (0.00)	98.06	51.63	-0.122 *** (-18.36)	183	-0.123 *** (-15.29)	0.027	0.994
1996–2005	474	-0.078 *** (-100.88)	-0.074 *** (-19.76)	6535.21 *** (0.00)	95.34	21.47	-0.078 *** (-27.14)	295	-0.079 *** (-23.44)	0.021	0.955
2006 or later	387	-0.072 *** (-77.94)	-0.073 *** (-22.86)	3465.01 *** (0.00)	90.70	10.76	-0.072 *** (-26.01)	235	-0.070 *** (-21.07)	0.022	0.901
Studies of the wage curve in Eastern Europe	423	-0.014 *** (-77.52)	-0.057 *** (-0.06)	25575.33 *** (0.00)	99.54	218.27	-0.014 *** (-9.96)	37	-0.010 *** (-3.05)	0.019	0.110
1995 or before	99	-0.095 *** (-107.40)	-0.076 *** (-10.86)	4806.04 *** (0.00)	98.12	53.16	-0.095 *** (-15.34)	88	-0.095 *** (-14.43)	0.018	1.000
1996–2005	222	-0.040 *** (-102.25)	-0.057 *** (-18.64)	2659.85 *** (0.00)	97.74	44.25	-0.040 *** (-29.48)	49	-0.039 *** (-16.51)	0.019	0.541
2006 or later	102	-0.002 *** (-11.65)	-0.038 *** (-5.58)	1993.62 *** (0.00)	99.89	923.94	-0.002 *** (-2.62)	11	-0.001 ** (-2.42)	0.017	0.034
Studies of the return to education in China	1278	0.167 *** (370.99)	0.180 *** (58.71)	50548.22 *** (0.00)	97.69	43.27	0.167 *** (58.97)	1183	0.167 *** (56.84)	0.022	1.000
1995 or before	266	0.140 *** (140.15)	0.140 *** (19.65)	8583.27 *** (0.00)	97.87	46.92	0.140 *** (24.63)	219	0.141 *** (22.54)	0.024	1.000
1996–2005	450	0.180 *** (231.58)	0.192 *** (41.49)	15522.03 *** (0.00)	97.01	33.40	0.180 *** (39.39)	431	0.179 *** (38.54)	0.021	1.000
2006 or later	562	0.171 *** (255.70)	0.188 *** (40.02)	25424.05 *** (0.00)	97.86	46.70	0.171 *** (37.98)	533	0.170 *** (36.97)	0.022	1.000
Studies of the return to education in Eastern Europe	356	0.265 *** (620.62)	0.191 *** (23.26)	250000.00 *** (0.00)	99.71	340.74	0.265 *** (23.49)	354	0.265 *** (23.43)	0.029	1.000
1995 or before	65	0.420 *** (375.37)	0.231 *** (12.07)	13431.65 *** (0.00)	99.61	257.86	0.420 *** (25.91)	65	0.420 *** (25.91)	0.022	1.000
1996–2005	109	0.240 *** (507.85)	0.223 *** (14.45)	200000.00 *** (0.00)	99.90	993.69	0.240 *** (11.84)	109	0.240 *** (11.84)	0.019	1.000
2006 or later	182	0.213 *** (94.06)	0.156 *** (14.69)	13036.29 *** (0.00)	95.40	21.74	0.213 *** (11.08)	181	0.212 *** (11.05)	0.035	1.000
Studies of the gender wage gap in China	951	-0.085 *** (-284.95)	-0.123 *** (-47.45)	55897.70 *** (0.00)	98.52	67.56	-0.085 *** (-37.15)	784	-0.085 *** (-33.66)	0.016	1.000
1995 or before	144	-0.091 *** (-87.02)	-0.090 *** (-22.54)	1790.77 *** (0.00)	92.60	13.51	-0.091 *** (-24.59)	137	-0.091 *** (-24.15)	0.013	1.000
1996–2005	374	-0.066 *** (-183.94)	-0.116 *** (-28.45)	23900.99 *** (0.00)	99.15	118.01	-0.066 *** (-22.98)	267	-0.064 *** (-19.61)	0.015	0.991
2006 or later	433	-0.149 *** (-229.26)	-0.140 *** (-34.31)	17438.18 *** (0.00)	97.19	35.62	-0.149 *** (-36.08)	403	-0.149 *** (-34.80)	0.019	1.000
Studies of the gender wage gap in Eastern Europe	770	-0.109 *** (-903.30)	-0.188 *** (-36.17)	890000.00 *** (0.00)	99.94	1765.81	-0.109 *** (-26.52)	724	-0.109 *** (-25.72)	0.018	1.000
1995 or before	200	-0.298 *** (-412.49)	-0.287 *** (-24.71)	98847.72 *** (0.00)	99.60	247.53	-0.298 *** (-18.51)	200	-0.298 *** (-18.51)	0.019	1.000
1996–2005	305	-0.179 *** (-888.86)	-0.190 *** (-26.55)	320000.00 *** (0.00)	99.92	1187.11	-0.179 *** (-27.48)	295	-0.179 *** (-27.03)	0.018	1.000
2006 or later	265	-0.059 *** (-382.75)	-0.110 *** (-19.78)	180000.00 *** (0.00)	99.91	1166.77	-0.059 *** (-14.49)	183	-0.059 *** (-12.04)	0.013	0.997

Notes: *** and ** denote statistical significance at the 1% and 5% 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 a statistical power of 0.80 or more, which is computed by referring to the UWA of all collected estimates

Appendix Table A3. Name, definition, and descriptive statistics of meta-independent variables by study type

Variable name	Definition	Descriptive statistics																							
		Studies of wage seniority						Studies of the wage curve						Studies of the return to education						Studies of the gender wege gap					
		Chinese studies			Eastern European studies			Chinese studies			Eastern European studies			Chinese studies			Eastern European studies			Chinese studies			Eastern European studies		
		Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.
Average estimation year	Average estimation year	2001.759	2002	8.030	2000.597	2001	6.250	2001.763	2002	8.033	2000.597	2001	6.250	2003.321	2002	7.660	2004.671	2008	7.773	2004.530	2004.5	7.111	2000.988	2002	7.796
Length of estimation period	Years of estimation period	2.158	1	3.628	1.943	1	3.042	2.158	1	3.628	1.943	1	3.042	1.541	1	2.909	2.101	2	2.880	1.924	1	3.218	1.869	1	2.621
Nationwide	1 = if the target region is unspecified, 0 = otherwise	0.141	0	0.348	0.936	1	0.245	0.141	0	0.348	0.936	1	0.245	0.168	0	0.374	0.452	0	0.498	0.156	0	0.363	0.903	1	0.297
Urban region	1 = if the target region is urban, 0 = otherwise	0.689	1	0.463	0.059	0	0.236	0.689	1	0.463	0.059	0	0.236	0.691	1	0.462	0.548	1	0.498	0.735	1	0.442	0.096	0	0.295
Rural region	1 = if the target region is rural, 0 = otherwise	0.170	0	0.375	0.005	0	0.069	0.170	0	0.375	0.005	0	0.069	0.141	0	0.348	-	-	-	0.109	0	0.312	0.001	0	0.036
All firms	1 = if the target firm is unspecified, 0 = otherwise	0.866	1	0.341	0.842	1	0.366	0.866	1	0.341	0.842	1	0.366	0.877	1	0.328	0.947	1	0.225	0.918	1	0.275	0.878	1	0.328
State enterprise	1 = if the target firm is a state enterprise, 0 = otherwise	0.042	0	0.200	0.057	0	0.232	0.042	0	0.200	0.057	0	0.232	0.039	0	0.194	0.014	0	0.118	0.035	0	0.183	0.043	0	0.203
Private firm	1 = if the target firm is a private firm, 0 = otherwise	0.092	0	0.290	0.102	0	0.303	0.092	0	0.290	0.102	0	0.303	0.084	0	0.277	0.039	0	0.195	0.047	0	0.212	0.079	0	0.270
Panel data	1 = if panel data is employed for empirical analysis, 0 = otherwise	0.073	0	0.260	0.147	0	0.354	0.073	0	0.260	0.147	0	0.354	0.023	0	0.149	0.087	0	0.282	0.038	0	0.191	0.060	0	0.237
Cross-sectional data	1 = if cross-sectional data is employed for empirical analysis, 0 = otherwise	0.927	1	0.260	0.853	1	0.354	0.927	1	0.260	0.853	1	0.354	0.977	1	0.149	0.913	1	0.282	0.962	1	0.191	0.940	1	0.237
Official household survey	1 = if the results of an official household survey are used as the data source, 0 = otherwise	0.016	0	0.125	0.586	1	0.493	0.016	0	0.125	0.586	1	0.493	0.005	0	0.068	0.264	0	0.441	0.017	0	0.129	0.570	1	0.495
Original household survey	1 = if the results of an original household survey are used as the data source, 0 = otherwise	0.984	1	0.125	0.414	0	0.493	0.984	1	0.125	0.414	0	0.493	0.995	1	0.068	0.736	1	0.441	0.983	1	0.129	0.430	0	0.495
Log transformation	1 = if the wage variable is log transformed, 0 = otherwise	0.777	1	0.416	0.939	1	0.240	0.777	1	0.416	0.939	1	0.240	0.695	1	0.461	0.958	1	0.201	0.791	1	0.407	0.934	1	0.249
With intercepted variable	1 = if the independent variable in question is estimated with an intercepted variable(s), 0 = otherwise	0.036	0	0.185	0.035	0	0.185	0.027	0	0.161	0.035	0	0.185	0.040	0	0.196	0.014	0	0.118	0.049	0	0.217	0.012	0	0.108
Non-OLS	1 = if an estimator rather than OLS is used for estimation, 0 = otherwise	0.240	0	0.427	0.236	0	0.425	0.240	0	0.427	0.236	0	0.425	0.209	0	0.407	0.140	0	0.348	0.180	0	0.384	0.175	0	0.380
OLS	1 = if OLS is used for estimation, 0 = otherwise	0.760	1	0.427	0.764	1	0.425	0.760	1	0.427	0.764	1	0.425	0.791	1	0.407	0.860	1	0.348	0.820	1	0.384	0.825	1	0.380
Control for selection bias	1 = if the sample selection bias of employment is controlled for, 0 = otherwise	0.091	0	0.287	0.087	0	0.283	0.091	0	0.287	0.087	0	0.283	0.063	0	0.244	0.048	0	0.214	0.045	0	0.208	0.100	0	0.300
Control of endogeneity	1 = if endogeneity between wage variable and the independent variable in question is controlled for, 0 = otherwise	0.003	0	0.052	0.014	0	0.118	0.003	0	0.052	0.014	0	0.118	0.104	0	0.305	0.028	0	0.165	0.003	0	0.056	-	-	-
Occupation	1 = if the estimation simultaneously controls for occupation, 0 = otherwise	0.240	0	0.427	0.395	0	0.489	0.238	0	0.426	0.395	0	0.489	0.303	0	0.460	0.062	0	0.241	0.278	0	0.448	0.397	0	0.490
Age	1 = if the estimation simultaneously controls for age or age group, 0 = otherwise	0.066	0	0.248	0.260	0	0.439	0.066	0	0.248	0.260	0	0.439	0.189	0	0.391	0.531	1	0.500	0.287	0	0.453	0.595	1	0.491
Job status	1 = if the estimation simultaneously controls for job status, 0 = otherwise	0.058	0	0.233	-	-	-	0.058	0	0.233	-	-	-	0.023	0	0.151	0.011	0	0.106	0.036	0	0.186	0.004	0	0.062
Health	1 = if the estimation simultaneously controls for health conditions, 0 = otherwise	0.139	0	0.346	0.064	0	0.245	0.139	0	0.346	0.064	0	0.245	0.178	0	0.383	-	-	-	0.140	0	0.347	0.083	0	0.276
Firm size	1 = if the estimation simultaneously controls for the size of firms to which workers belong, 0 = otherwise	0.090	0	0.286	0.407	0	0.492	0.090	0	0.286	0.407	0	0.492	0.088	0	0.284	0.163	0	0.370	0.113	0	0.316	0.400	0	0.490
Trade union	1 = if the estimation simultaneously controls for the presence of trade unions, 0 = otherwise	0.102	0	0.303	0.095	0	0.293	0.102	0	0.303	0.095	0	0.293	0.067	0	0.251	0.051	0	0.219	0.075	0	0.263	0.039	0	0.194
Location fixed effects	1 = if the estimation simultaneously controls for location fixed effects, 0 = otherwise	0.513	1	0.500	0.546	1	0.498	0.512	1	0.500	0.546	1	0.498	0.541	1	0.499	0.213	0	0.410	0.519	1	0.500	0.462	0	0.499
Industry fixed effects	1 = if the estimation simultaneously controls for industry fixed effects, 0 = otherwise	0.334	0	0.472	0.461	0	0.499	0.334	0	0.472	0.461	0	0.499	0.308	0	0.462	0.197	0	0.398	0.332	0	0.471	0.417	0	0.493
SE	Standard error of partial correlation coefficient	0.029	0.023	0.020	0.022	0.019	0.021	0.029	0.023	0.021	0.022	0.019	0.020	0.028	0.0219	0.023	0.028	0.029	0.016	0.023	0.016	0.023	0.019	0.018	0.018

Note: The variables of nationwide, all firms, panel data, official household survey, and non-OLS are default categories. -: Not available

Appendix Table A4. Meta-regression analysis of model uncertainty and multicollinearity for the selection of moderators: Studies of wage seniority in China

Estimator	Bayesian model averaging (BMA)				Weighted-average least squared (WALS)		
Meta-independent variables/Model	[1]				[2]		
	Coef.	S.E.	*t*	PIP	Coef.	S.E.	*t*
Focus regressors							
Average estimation year	-0.0028	0.0004	-7.49	1.00	-0.0031	0.0004	-8.89
SE	0.1054	0.1447	0.73	1.00	0.1409	0.1370	1.03
Auxiliary regressors							
Length of estimation period	-0.0001	0.0004	-0.23	0.08	-0.0016	0.0009	-1.82
Urban region	-0.0005	0.0033	-0.14	0.07	-0.0086	0.0074	-1.16
Rural region	-0.0071	0.0106	-0.67	0.38	-0.0201	0.0095	-2.11
State enterprise	0.0129	0.0169	0.76	0.42	0.0282	0.0101	2.80
Private firm	-0.0002	0.0021	-0.11	0.04	-0.0005	0.0076	-0.06
Cross-sectional data	-0.0002	0.0030	-0.07	0.03	-0.0114	0.0127	-0.90
Original household survey	-0.1773	0.0235	-7.56	1.00	-0.1311	0.0221	-5.93
Log transformation	0.0091	0.0093	0.98	0.56	0.0184	0.0057	3.21
With intercepted variable	-0.0527	0.0185	-2.86	0.96	-0.0373	0.0153	-2.44
OLS	-0.0019	0.0052	-0.37	0.15	-0.0115	0.0075	-1.54
Control for selection bias	0.0003	0.0024	0.11	0.04	-0.0023	0.0097	-0.24
Control of endogeneity	0.0034	0.0176	0.19	0.06	0.0642	0.0398	1.61
Occupation	0.0034	0.0068	0.50	0.24	0.0151	0.0057	2.62
Age	-0.0001	0.0025	-0.05	0.03	-0.0097	0.0115	-0.84
Job status	-0.0516	0.0117	-4.42	1.00	-0.0529	0.0127	-4.16
Health	-0.0338	0.0075	-4.52	1.00	-0.0286	0.0070	-4.07
Firm size	0.0001	0.0027	0.05	0.04	0.0018	0.0106	0.17
Trade union	0.0106	0.0133	0.79	0.45	0.0108	0.0109	0.99
Location fixed effects	-0.0010	0.0033	-0.29	0.11	-0.0085	0.0051	-1.66
Industry fixed effects	-0.0051	0.0074	-0.69	0.38	-0.0133	0.0049	-2.70
K	1126				1126		

Notes: See Appendix Table A3 for the definitions and descriptive statistics of meta-independent variables. The estimate of the intercept is omitted. S.E. and PIP denote standard errors and posterior inclusion probability, respectively. In Model [1], the variables from financial market liberalization to other financial liberalization variables as well as standard errors of partial correlation coefficients (*SE*) are included in the estimation as focus regressors. Therefore, the PIP of these key variables is 1.00.

Appendix Table A5. Summary of publication selection bias test by study type and period

Study type and period	Number of estimates (K)	Test results[a]			
		Funnel asymmetry test (FAT) (H_0: $\gamma_0 = 0$)	Precision-effect test (PET) (H_0: $\gamma_1 = 0$)	Precision-effect estimate with standard error (PEESE) (H_0: $\gamma_1 = 0$)[b]	Alternative estimates of publication selection bias–corrected effect size (H_0: Effect size is zero)[b]
Studies of wage seniority in China	1126	Not rejected	Rejected	Rejected (0.1170/0.1641)	Rejected (0.1129/0.1335)
1995 or before	265	Not rejected	Rejected	Rejected (0.1857/0.3362)	Rejected (0.2038/0.2141)
1996–2005	474	Not rejected	Rejected	Rejected (0.0930/0.1026)	Rejected (0.0996/0.1067)
2006 or later	387	Not rejected	Rejected	Rejected (0.0825/0.1115)	Rejected (0.0903/0.0940)
Studies of wage seniority in Eastern Europe	423	Rejected	Rejected	Rejected (0.0295/0.0394)	Rejected (0.0224/0.0617)
1995 or before	99	Not rejected	Rejected	Rejected (0.1243/0.1995)	Rejected (0.1357/0.1516)
1996–2005	222	Not rejected	Rejected	Rejected (0.0943)	Rejected (0.0905/0.1049)
2006 or later	102	Rejected	Rejected	Rejected (0.0094/0.0121)	Rejected (0.0037/0.0063)
Studies of the wage curve in China	1126	Not rejected	Rejected	Rejected (-0.0874/-0.0828)	Rejected (-0.0979/-0.0923)
1995 or before	265	Not rejected	Rejected	Rejected (-0.1341/-0.1234)	Rejected (-0.1311/-0.1253)
1996–2005	474	Not rejected	Rejected	Rejected (-0.1350/-0.0658)	Rejected (-0.0865/-0.0844)
2006 or later	387	Not rejected	Rejected	Rejected (-0.0916/-0.0647)	Rejected (-0.0760/-0.0696)
Studies of the wage curve in Eastern Europe	423	Rejected	Rejected	Rejected (-0.0161/-0.0130)	Rejected (-0.0075/-0.0281)
1995 or before	99	Not rejected	Rejected	Rejected (-0.0982/-0.0916)	Rejected (-0.1192/-0.1052)
1996–2005	222	Rejected	Rejected	Rejected (-0.0387/-0.0371)	Rejected (-0.0585/-0.0357)
2006 or later	102	Rejected	Rejected	Rejected (-0.0097/-0.0082)	Rejected (-0.0054/-0.0011)
Studies of the return to education in China	1278	Rejected	Rejected	Rejected (0.1358/0.2396)	Rejected (0.1454/0.1642)
1995 or before	266	Not rejected	Rejected	Rejected (0.1328/0.2669)	Rejected (0.1314/0.1382)
1996–2005	450	Not rejected	Rejected	Rejected (0.1537/0.3163)	Rejected (0.1539/0.1698)
2006 or later	562	Rejected	Rejected	Rejected (0.1425/0.2241)	Rejected (0.1424/0.1607)
Studies of the return to education in Eastern Europe	356	Not rejected	Rejected	Rejected (0.2703/0.3181)	Rejected (0.2705/0.3573)
1995 or before	65	Rejected	Rejected	Rejected (0.4250/0.4930)	Rejected (0.4197/0.4407)
1996–2005	109	Not rejected	Rejected	Rejected (0.2362/0.2410)	Rejected (0.2275/0.2970)
2006 or later	182	Rejected	Rejected	Rejected (0.2016/0.2256)	Rejected (0.2738/0.2820)
Studies of the gender wage gap in China	951	Rejected	Rejected	Rejected (-0.1535/-0.0816)	Rejected (-0.1027/-0.0601)
1995 or before	144	Not rejected	Rejected	Rejected (-0.0791/-0.0897)	Rejected (-0.0953/-0.0929)
1996–2005	374	Rejected	Rejected	Rejected (-0.1921/-0.0574)	Rejected (-0.1668/-0.1448)
2006 or later	433	Not rejected	Rejected	Rejected (-0.1548/-0.1505)	Rejected (-0.1684/-0.1482)
Studies of the gender wage gap in Eastern Europe	770	Rejected	Rejected	Rejected (-0.3908/-0.1080)	Rejected (-0.1190/-0.0960)
1995 or before	200	Not rejected	Rejected	Rejected (-0.3606/-0.2999)	Rejected (-0.3129/-0.2960)
1996–2005	305	Not rejected	Rejected	Rejected (-0.1906/-0.1784)	Rejected (-0.2011/-0.1754)
2006 or later	265	Not rejected	Rejected	Rejected (-0.0590/-0.0578)	Rejected (-0.0496/-0.0392)

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 estimates are reported, the left and right figures denote the minimum and maximum estimates, respectively.