Vol. 17 (2026): Proceedings of the International Conference on Research in Accounting, Finance and Management (ICRAFM 2026)
E-ISSN: 3105-0522 P-ISSN: 3105-0514
DOI: https://doi.org/10.70267/icrafm.202617754759

Theoretical Evolution and Empirical Integration of Minimum Wage Employment Effect -- Based on the Literature Review of OECD Countries

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Abstract

The minimum wage system is an important tool for the government to adjust labor remuneration and ensure the income of low-income workers, but its impact on the employment level and wage level has long been controversial in the academic community. Whether the minimum wage system can ensure the stable income of low-income groups and avoid reducing the employment rate has always been the core of labor economics. The competitive labor market theory and the buyer monopoly theory put forward completely opposite predictions, and the cross-border empirical research based on OECD countries has not been consistent. This paper systematically collates the evolution of empirical evidence and theory in the past 40 years, focusing on the latest progress of transnational research panel data. Literature shows that: The relationship between minimum wage and unemployment rate is not simple linear; on the contrary, the nonlinear threshold effect and institutional heterogeneity have been supported by multiple evidences. Although the overall unemployment rate remains controversial, the vulnerability of youth and low-skilled groups has formed a broad consensus. Paragraph offer a comparison that, although the overall unemployment rate remains controversial, the vulnerability of youth and low skilled groups has formed a broad consensus. This paper further evaluates the limitations of the existing research, and puts forward the future research direction from the perspectives of identification strategy improvement, downward scenario investigation and applicability in developing countries. This article set a solid foundation for future research in this field.

Keywords

minimum wage, unemployment rate, nonlinear effect, competitive labor market, buyer monopoly

1. Introduction

1.1 Research Background

Employment status and wage level are two major indicators to measure the labor market. The OECD released the real wage data of G7 countries from 2000 to 2022, which showed that the growth differentiation of countries was obvious. The United States and Canada rose significantly, while Britain, France and Germany

rose steadily. Japan remained almost unchanged for a long time, and Italy even declined slightly. Under the impact of the new crown epidemic, real wages in most countries fell sharply in the short term, while the unemployment rate also fluctuated significantly. Looking at the unemployment rate statistics of OECD member countries in March 2025, there are huge differences among countries. The unemployment rates in Japan and Mexico remain at a low level, while those in Spain and Colombia remain high [1, 2]. Overall, the OECD average unemployment rate is 4.9%. The purpose of this paper is to answer the following questions: under what conditions are the two opposing theories established respectively? Who is more supported by cross-border empirical evidence? Where is the gap of existing research theory?

1.2 Research Meaning

1.2.1 Theoretical Significance

The competitive labor market theory and the buyer monopoly theory put forward completely opposite predictions for the employment effect of the minimum wage. Under the framework of competitive market, when the minimum wage is higher than the average wage in the market, the cost of enterprises will rise, which will reduce the employment of labor force and lead to the rise of unemployment rate; the buyer monopoly theory proposes that when enterprises have the ability to monopolize the market, the moderate increase of the minimum wage will not reduce employment, or even promote employment.

1.2.2 Summary Significance

Most of the existing review literatures focus on the scenario of minimum wage increase, and the scenario of minimum wage decrease is basically not described; and most of the reviews tend to state the conclusions of different studies in parallel, lacking the analysis of the establishment and application conditions of different theories. The purpose of this paper is to put the two theories into a unified analytical framework to clarify the root causes of their differences and the possibility of reconciliation; taking “non-linear effect” and “heterogeneity” as clues, this paper conducts information integration on transnational empirical research, and extracts the knowledge gap and future direction of existing research.

2. Literature Review and Theoretical Framework

2.1 Competitive Labor Market Theory

When it comes to the minimum wage policy, the theory of competitive labor market is usually regarded as a classic basic analysis framework. This theory holds that the price of labor is determined spontaneously by the relationship between supply and demand in the market, and the equilibrium wage level depends on the marginal output of labor [3]. Brown, Gilroy and Kohen have pointed out that if the legal minimum wage is set higher than the market clearing level, enterprises will reduce employment along the demand curve [3]. Neumark and Wascher further deepened this view. They made it clear that raising the minimum wage would push up the labor cost and reduce the employment scale, and this negative effect was particularly obvious in low skilled workers and youth groups [4].

In addition, the theory also has a clear prediction of the short-term effect of policy adjustment: If the government lowers the minimum wage, the labor cost of enterprises will fall, and enterprises will expand the demand for labor in the short term, so the unemployment rate will be reduced. However, this theory does not take into account the overall demand change mechanism at the macro level. In the long run, if the wage level continues to decline, the disposable income and consumption ability of residents will be weakened, the demand of product market will shrink, and the sales income of enterprises will naturally decrease. Finally, enterprises still have to shrink production scale and lay off employees again, and the unemployment rate may rebound back. This means that even according to the logic of the competitive theory, the impact of the minimum wage reduction on the unemployment rate may be the opposite in the short term and the long term.

On the whole, the theory of competitive labor market provides a basic analytical framework for this paper. However, the conclusion of this theory is based on some strict and unrealistic assumptions. Whether these assumptions can be applied to the real mixed labor market structure needs to be tested again. It is difficult for this theory to fully explain the complexity and heterogeneity that the minimum wage policy brings to employment in reality. It is also for this reason that we need to introduce the buyer monopoly theory (see 2.2),

and then do empirical tests based on the OECD cross-border panel data, which provide sufficient theoretical space for this paper.

2.2 Buyer Monopoly Theory

How to see the employment effect of minimum wage from the perspective of buyer monopoly theory? It gives a completely different perspective from the competitive theory. The core premise of this theory is that the labor market in reality is not perfect competition, and there is widespread buyer monopoly power. That is to say, enterprises, as the only or main purchaser of labor, have the right to price wages. Under the buyer monopoly structure, the labor supply curve faced by enterprises is not completely elastic. If enterprises want to expand employment, they must raise wages for all workers. As a result, the marginal labor cost of the enterprise will be higher than the average labor cost.

Boeri and van ours systematically elaborated the policy implications of the buyer monopoly model in their classic textbook that the economics of the perfect labor market: Enterprises that maximize profits will determine employment at a level where the marginal labor cost equals the marginal output of labor, while the wage level will be depressed below the marginal output [5]. At this time, the equilibrium of the labor market is in a suboptimal state of "low wages and low employment", and there is room for Pareto improvement in the market. In this situation, the government sets a minimum wage standard that is moderately higher than the monopoly equilibrium wage, which can have double positive effects: On the one hand, the wage level is approaching the competitive equilibrium level, and the income of workers is improving. On the other hand, enterprises will expand employment to take advantage of cheap marginal labor, and the employment level will rise instead of fall.

Azar and Marinescu, in their review published in the annual review of economics, used a large number of empirical evidence to further support the practical explanatory power of the buyer monopoly theory [6]. Their analysis based on online job vacancy data and administrative employer-employee matching data shows that the labor supply curve of a considerable number of industries and regions in the U.S. labor market does show upward tilt, and enterprises have significant room for wage compression. In such markets, the moderate increase of the minimum wage will not reduce employment, but help to improve economic efficiency. However, the theory also clearly points out that this positive employment effect can only be established on the premise of moderate adjustment of the minimum wage. If the minimum wage rises too sharply, beyond the critical point of buyer monopoly, it will still lead to unemployment.

It can be seen that the buyer monopoly theory and the competitive theory have completely opposite policy predictions on the minimum wage. The former warns of unemployment, while the latter promises to improve employment. The opposition between the two theories provides the core research conjecture for this paper: In real data, which is more powerful? Or can both be true under different conditions? This needs to be answered by subsequent empirical tests. At the same time, the buyer monopoly theory also suggests that the impact of the minimum wage on employment may have nonlinear characteristics – the consequences of moderate adjustment and radical adjustment are quite different – this inference is highly consistent with the design idea of subsequent heterogeneity analysis and robustness test in this paper.

2.3 Transnational Empirical Study on the Employment Effect of Minimum Wage

In recent years, using cross-border panel data to study the employment effect of minimum wage has become an important branch of labor economics. Compared with the case study of a single country, the cross-border panel data can provide a wider range of samples of institutional differences and policy changes, so the estimation results are more objective and accurate.

Ramos Herrera used the long-term panel data of 33 OECD countries from 1980 to 2020 to run a dynamic fixed-effect panel threshold model to retest the relationship between the minimum wage and the unemployment rate [7]. He found that the impact of the minimum wage on the unemployment rate is not a linear monotone relationship, but an obvious threshold effect: When the ratio of minimum wage to average wage is lower than a certain threshold, raising the minimum wage has little effect on the unemployment rate; when the threshold is exceeded, the unemployment rate will rise significantly. This discovery partially reconciles the opposition between the competitive theory and the buyer monopoly theory – the two theories have their own reasons under different institutional environments and policy forces, and are not completely mutually exclusive.

Sturn focused on low skilled workers and youth employment groups, using data from 19 OECD countries to assess the differential impact of the minimum wage on the employment of workers with different skills [8]. Using the double difference strategy and propensity score matching method, he found that the negative effect of the minimum wage on the overall employment rate was limited, and there was no significant negative impact on the employment of youth and low skilled groups [8]. This conclusion is closer to the prediction of the buyer monopoly theory. However, Sturn also acknowledged that the results vary greatly among different countries, and the labor market system has a significant regulatory effect on the policy effect.

At the same time, Allegretto and others re-evaluated the impact of the minimum wage on the employment of low-wage service industry by using the U.S. state panel data, and found that there were systematic differences between the conclusions of the traditional fixed effect model and the event study method, suggesting that the model setting had a decisive impact on the estimation results [9]. Cengiz's research based on large-scale micro-administrative data further shows that the employment effect of the minimum wage increase is statistically highly concentrated in workers near the low-wage percentile, and the average effect on the overall unemployment rate is almost zero. This finding raises questions about the external effectiveness of the "average treatment effect" [10].

Based on the above cross-border empirical research, the existing literature has not yet reached an agreement on whether the minimum wage damages employment. The differences may come from the composition of sample countries, the differences in model settings, and the heterogeneity of national labor market institutional environment. More importantly, almost all the existing cross-border literatures focus on the scenario of minimum wage increase, and the investigation of the scenario of minimum wage decrease is extremely scarce, which provides a clear knowledge gap for subsequent research.

3. Integrated Review

3.1 Theoretical Analysis and Integration

Comparing the two theories, their differences are rooted in the fundamental difference of the hypothesis of labor market structure–perfect competition vs. buyer monopoly–but the two are not irreconcilable. The key is to identify the boundary conditions applicable to the theory: In the industry with high degree of market competition, the competitive logic is dominant, and the buyer monopoly mechanism is more prominent in the market with a high concentration of employers. In reality, the labor market is a mixed structure, and the two mechanisms may exist at the same time and offset each other. This understanding provides an analytical basis for understanding the nonlinear effects and heterogeneity in the cross-border empirical study below.

3.2 Consensus on the Accuracy of Existing Studies

Despite the significant controversy, the following judgments have accumulated multiple evidences to support: First, the employment effect of the minimum wage has nonlinear characteristics. Ramos Herrera's threshold model finds that it is consistent with the "moderate range" prediction direction of the buyer's monopoly theory; Second, group heterogeneity is a widespread stable phenomenon, and young and low skilled workers are the most sensitive to policy changes [4, 8]; Third, the pure competitive hypothesis is not unconditionally supported by empirical data.

3.3 Pending Core Disputes

Go hand in hand with the consensus, and the following disputes are still significant: First, the direction of the overall effect is not clear. Even if there are similar samples and similar test methods, different studies' estimates of the overall unemployment rate are still opposite; Second, the short-term and long-term benefits lack sufficient empirical support. The existing panel data are not only limited in time, but also static, so it is difficult to draw a complete conclusion; Third, the external validity boundary of transnational evidence has not been clearly defined. OECD countries are mostly high-income mature economies, and their conclusions cannot be simply extrapolated to developing countries.

3.4 Suggestions for China and Other Developing Countries

For China and other developing countries in the process of labor market transition, OECD literature provides important methods and suggestions, rather than conclusions. China's minimum wage system has abundant adjustments and changes at the provincial level, which provides a natural scenario for identifying causal effects using the event study method. However, there may be errors in the model setting directly applied to OECD research: The difference between urban and rural labor markets in China makes the meaning of "unemployment rate" fundamentally different from OECD countries. Future research should construct a model suitable for China's labor market.

4. Research Limitations and Future Prospects

This paper uses cross-border panel data. There are differences in social security systems and Trade Union forces in different countries. Although they are controlled as much as possible through fixed effects, there are still some unobservable factors that are difficult to completely peel off. Future research can further subdivide industries, focus on manufacturing and service industries, and deeply explore the differential impact of the minimum wage on employment in different industries. At the same time, combined with microenterprise data, the transmission mechanism is further clarified from the micro perspective of enterprise employment and salary distribution. Future research can seek breakthroughs in the following directions: (1) With the help of higher frequency micro administrative data, combined with the event research method, this paper depicts the dynamic response path of employment before and after the policy adjustment; (2) To test the asymmetry of the effects of the increase and decrease of the minimum wage, the national samples of the event of the decrease of the minimum wage were collected; (3) Carry out localization test based on rigorous identification strategy in China and other large emerging economies to expand the external boundary of the issue.

5. Conclusion

The change of the minimum wage standard will not have a uniform and fixed impact on the unemployment rate. The effect of the policy is highly dependent on the domestic labor market institutional environment, the original wage level, and the industrial structure. At the same time, there are also short-term and long-term effect differentiation. Youth and vulnerable groups with low skills are more vulnerable to policy shocks and need to be given special attention. Competitive labor market theory and buyer monopoly theory are not mutually exclusive. They can play different roles under different realistic conditions.

For policymakers, the minimum wage policy should not stick to the single judgment of "up regulation" or "down regulation", but should seek the policy logic of "moderation", "accuracy" and "dynamic evaluation" based on the structure of the domestic labor market, the institutional environment and the characteristics of vulnerable groups.

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Funding

This research received no external funding.

Conflicts of Interest

The authors declare no conflict of interest.

Acknowledgment

This paper is an output of the science project.

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