



ECONOMISTS
FOR UKRAINE

WORKING PAPER SERIES

WORKING PAPER No. 46

SEPTEMBER 2026

MINIMUM WAGE REFORM IN A WARTIME ECONOMY: SIMULATING IMPACTS FROM UKRAINE'S PROPOSED REFORM

**Gordon Betcherman, Maddalena Honorati, and Martin
Moessinger**

The paper is the result of a close collaboration with the Government of Ukraine, in particular with the Ministry of Economy, Environment and Agriculture. We are extremely thankful to the Pension Fund of Ukraine for providing the data. The paper was funded by the UK Government within the framework of the Ukraine Relief, Recovery, Reconstruction and Reform Trust Fund (URTF). The views do not necessarily reflect the UK Government's and the World Bank's official policies or the views of the government counterparts consulted throughout the process. We thank Yana Simutina, Olga Kupets, Katerina Petryna and Iryna Kalachova for valuable inputs. The team is grateful to peer reviewers Matteo Morgandi, Florian Blum and Mariia Chebanova (World Bank) for insightful comments and suggestions, and to Johannes Koettl-Brodmann, Sofia Gomez Martinez (World Bank), Sergiy Savchuk (ILO), Julia Markuts, Vladyslav Ilerusalymov (Kyiv School of Economics) for commenting the early phase of the analysis.

The views expressed herein are those of the author(s) and do not necessarily reflect the views of Economists for Ukraine.

Econ4UA working papers are circulated to encourage discussion. They often represent preliminary work and have not been peer-reviewed.

© 2026 by Gordon Betcherman, Maddalena Honorati, and Martin Moessinger. All rights reserved.

Economists for Ukraine (Econ4UA)

Website: <https://econ4ua.org/> Email: info@econ4ua.org

ABSTRACT

Minimum wage reform in a wartime economy: Simulating impacts from Ukraine's proposed reform

While the literature on the minimum wage is largely retrospective, analyzing impacts of past policy changes, this paper is uniquely forward-looking, forecasting how a proposed reform in Ukraine would affect future employment, earnings, and social contributions. The analysis simulates these effects by mimicking a proposal that would set a minimum wage floor equal to 40 percent of the previous year's average wage once martial law is over and increasing the minimum wage by two percentage points annually until reaching 50 percent of the previous year's average wage. The analysis draws on a 10 percent random sample of 2023 worker-level data from the Pension Fund of Ukraine, covering all jobs with pension contributions in the private sector and nonmilitary public sector. The results indicate that, under the proposal, by the end of the five-year transition period, the minimum wage would be 45 percent above the level it would have reached if adjusted only for wage inflation, which serves as the counterfactual. Projected job losses would be modest (0.51–1.03 percent), while total earnings would increase by up to 3.24 percent. The effect on social contributions and taxes would be the same as the effect on earnings since they are a fixed percentage of earnings in Ukraine. Applied to an administrative data set covering all formal sector workers, the methodology developed in the paper offers a useful tool for policy makers to anticipate the likely effects of the minimum wage reforms that are being considered. The paper concludes by discussing policy implications.

JEL CLASSIFICATION: E24, J31, J38, J46, J48, J8, O1

KEYWORDS: minimum wage; labor markets; wages; contributions; Ukraine

Gordon Betcherman
School of International
Development and Global
Studies, University of Ottawa
gordon.betcherman@uottawa.ca

Maddalena Honorati
World Bank
mhonorati@worldbank.org

Martin Moessinger
World Bank
mmoessinger@worldbank.org

1 Introduction

Minimum wages represent a key element of labor policy, given their implications for the welfare of workers, income distribution, and economic efficiency. Accordingly, it is important for policy makers to anticipate what the effects are likely to be when they introduce changes to the minimum wage. However, they generally need to rely on estimates based on previous minimum wage changes since the evidence base is largely retrospective, typically analyzing impacts of past changes.

In this paper, we present a forward-looking analysis, developing a methodology that allows us to forecast the likely impacts of a new minimum wage proposal using administrative data collected by Ukraine's Pension Fund (PFU). The proposal - put forward as part of the revised Labor Code reform - envisages a new process for setting the minimum wage which relies partly on a formula based on recent wage levels and a minimum wage target based on a percentage of the average wage.¹ Our research question is to quantify the likely effects of a minimum wage set according to this proposal on employment, earnings, and fiscal revenues over the five years following the implementation of the reform.

More specifically, the proposal² studied in this paper stipulates that the minimum wage cannot be less than 50 percent of the average gross nominal wage³ in the first six months of the previous year. The proposal also provides for a transition period where the minimum wage floor would initially be set at 40 percent of the average gross nominal wage in the first six months of the preceding year. The minimum wage floor would then be increased by 2 percent of the 6-month average wage (of the preceding year) at the beginning of each subsequent year until it reaches 50 percent of the average gross wage.

Our analysis is based on a sample of records in the 2023 Pension Fund database which includes information for all workers and jobs where contributions have been made to the Fund. We conducted two experiments. First, we mimic the proposed reform assuming it was implemented in 2025. In this experiment, we analyze the effects year-by-year over the five-year transition period (2025-2030) by creating new worker/job databases for each year, based on expected wage inflation and minimum wages set according to the proposal. Second, we conduct an analysis of what the impacts would have been if the minimum wage proposal had already been introduced in 2023 when we have actual data. In this experiment, the minimum wage proposal is simulated under two scenarios, with the new minimum wage set at 40 percent and at 50 percent of the average wage in 2022 (first six months).

In both exercises, we find that, compared to a 'no-reform' scenario, the impacts of the minimum wage reform on employment, wages, and social contributions/taxes are small when the minimum wage is set at 40 percent of the average wage. This is not surprising since this is similar to the existing minimum wage which was approximately 37 percent of the average wage in 2024. However, as the minimum wage approaches 50 percent of the average wage in the transition exercise, or is set at 50 percent in the 2023 simulation, the effects become considerably more significant. Considering both simulations, when the minimum wage reaches or is set at 50 percent of the average wage, earnings are 2-3 percent higher than they would be in a 'no-reform' scenario

¹A new minimum wage setting process had not yet been adopted by Parliament at the time this study was undertaken. The analysis in this paper is based on the processes developed by government officials for adoption.

²As per the transitional provisions in the draft proposal, the proposed minimum wage would be set upon the adoption of the Labor Code and six months after the date of termination or cancellation of martial law.

³The assumption is that "average" refers to the mean wage which is the practice in most European countries. The EU directive on minimum wages recommends an adequacy standard of 50 percent of the mean wage and 60 percent of the median wage (which will be lower than the mean). See <https://www.socialeurope.eu/after-landmark-eu-court-judgement-the-eu-minimum-wages-directive-is-alive-and-kicking>.

while employment is, at most, 1 percent lower than if there had been no reform. Overall, our analysis indicates that an increased minimum wage will have a greater relative impact in terms of higher wages for low-wage workers than eliminating jobs. This result reflects the low labor demand elasticities that we have assumed are prevailing in the Ukrainian labor market.

There is an extensive literature on the effects of the minimum wage on employment and earnings. While the bulk of the evidence comes from the U.S., the U.K., and other high-income countries, there has been a growing number of studies on effects in emerging and developing countries. Taking stock of the literature across all countries, there may not be a full consensus among labor economists about the effects of the minimum wage. However, as innovative empirical methods using microdata have been increasingly applied,⁴ there has been accumulating evidence that, when the minimum wage is increased, employment impacts tend to be small while the wage benefits for low-paid workers can be significant (Dube, 2019; Manning, 2021; Alzate et al., 2024). While increases in the minimum wage can spill over into higher wages for those earning (slightly) above the minimum wage, the overall distributional effect is generally to reduce wage inequality. Given the characteristics of low-paid workers, the strongest effects – positive and negative – tend to be focused on women, youth, and unskilled employees. In emerging and developing countries,⁵ an important issue is the effects of the minimum wage on informal employment. While higher minimum wages do appear to have a positive impact on informal-sector wages through the lighthouse effect, evidence on whether higher minimum wages increase informality is mixed (Alzate et al., 2024; Betcherman, 2019).

Studies of the impacts of minimum wages have been dominated by ex-post impact evaluations. In his extensive review of the literature, Dube (2019) observes that most modern evaluations study how outcomes change following a change in the minimum wage laws. While the findings from ex-post studies can offer some guidance to policy makers about likely effects of a minimum wage policy change they are considering, there are limits to how much they can be relied on, especially when substantial increases are contemplated (Neumark, 2019).

There is a small literature on ex-ante studies that aim to predict the effects of potential minimum wage policy changes. These studies offer more direct and context-specific evidence than the ex-post evaluations by forecasting the effects of a proposed change. Ex-ante studies employ various methodologies including structural and general equilibrium modeling approaches (Berger et al., 2022), surveys of employers to understand how they would respond to minimum wage increases (Bossler et al., 2020), and microsimulation modeling. This last method is the closest to our analysis. A prominent example is the U.S. Congressional Budget Office (2019) analysis of what the impacts would be if the federal minimum wage was increased. Robayo-Abril et al. (2020) carried out a similar analysis of potential minimum wage increases in Kosovo. The empirical analysis in both studies uses micro data from household surveys (U.S. Current Population Survey and Kosovo Labor Force Survey), adjusting wages of low-paid workers according to minimum wage increase options and using labor demand elasticities to estimate employment effects.

Wars obviously have serious consequences for how labor markets operate, but empirical evidence is scarce (Anastasia et al., 2026). To our knowledge, there have been no systematic studies analyzing the impacts of minimum wage increases in fragile country settings and labor markets operating amid conflicts. Since 2022, Ukraine's labor market statistics have had to rely on incomplete and often unofficial data. The collection of representative labor force and household budget surveys has been

⁴For a detailed review of these empirical methods, see Dube and Lindner (2024).

⁵For reviews of minimum wages in emerging and developing economies, see Belman and Wolfson (2016), Betcherman (2019) and Broecke et al. (2017).

interrupted. However, it is clear that the war has resulted in major shocks to both labor supply and labor demand. Because of outmigration, mobilization, and casualties, the potential labor force has decreased by roughly one-quarter (Anastasia et al., 2026). And with the inactivity rate close to 50 percent, labor supply is a huge challenge (based on the Household Socio-Economic Status Survey 2023/2024 collected by UNICEF in collaboration with the Ministry of Social Policy of Ukraine). Labor demand declined substantially right after the invasion although it has rebounded to some extent. The structure of employment has been altered by the conflict, with labor demand migrating west and industrial and occupational compositions changing in important ways (Honorati, 2026; Helvetas, 2025). This, coupled with the labor supply shock, has led to unfilled jobs, with three-quarters of employers reporting shortages (National Bank of Ukraine, 2025). Many employers have responded by offering higher salaries, which has led to some wage inflation (World Bank, 2026).

Skills mismatches are mostly due to the declining labor supply, the displacement of people and firms, the decreased number of young graduates entering the labor market, and the misalignment of the formal education and training system with labor market demand. Fewer than a third of the unemployed have the required professional skills for these jobs (Honorati, 2026). Finally, informality is a prevalent feature in the Ukrainian labor market. While there are no official estimates, the share of informal workers is estimated to be about 13%, with another 4 percent in unregistered self-employment (UNICEF, 2024). The overall level of informality is considerably higher when partially informal work (underreported wages, earnings) is considered.

This study makes three contributions to the minimum wage literature. First, it adds to the nascent body of evidence on minimum wage effects in fragile and conflict-affected settings. While the literature has expanded considerably in recent decades — moving from a near-exclusive focus on the United States and the United Kingdom to a broader set of middle-income economies — systematic evidence on how minimum wage policies operate in active conflict zones remains essentially absent. By grounding our analysis in administrative data collected during Ukraine’s full-scale wartime economy (2023), we provide what is, to our knowledge, the first ex-ante minimum wage study conducted in such a setting, offering a benchmark for future research in fragile states.

Second, we contribute to the relatively small ex-ante evaluation literature on minimum wages. Unlike the dominant ex-post evaluation tradition — which identifies causal effects of past minimum wage changes using difference-in-differences or bunching estimators — ex-ante studies simulate distributional impacts prospectively, typically using the "spike" approach to estimate the fraction of workers directly affected by a new minimum wage floor and a calibrated labor demand elasticity to impute employment responses. Our study extends this strand by producing year-by-year empirical predictions across a multi-step reform trajectory, rather than a single counterfactual scenario as in most prior ex-ante work (U.S. Congressional Budget Office, 2019; Robayo-Abril et al., 2020). This sequential simulation approach is better suited to evaluating the cumulative effects of phased reforms and the compounding role of wage inflation in determining the effects of the minimum wage over time.

Third, we exploit administrative records — specifically a sample from Ukraine’s Pension Fund (PFU) database — rather than household survey data, which is the standard source in ex-ante minimum wage studies. Administrative data offer two material advantages in this context: wages are officially recorded rather than self-reported, reducing classical measurement error that can distort estimates of the wage distribution near the minimum; and coverage of formal-sector workers is near-complete, virtually eliminating the item non-response that plagues survey-based wage

distributions. These properties make administrative records particularly well suited to analyzing minimum wage impacts on formal employment, where compliance and wage spillovers are most directly observable.

Another noteworthy feature of our analysis is that we adapt our simulation methodology to the distinctive features of a wartime labor market characterized by reduced labor supply, skills mismatches and generalized upward wage pressure, by calibrating labor demand elasticities from the international literature toward the lower end of available estimates. We provide a structured qualitative discussion of the direction and magnitude of these adjustments, acknowledging that the inability to estimate Ukraine-specific elasticities directly (due to missing wage data) is a limitation that future research, as richer post-war data become available, should address.

The paper is structured as follows: Section 2 describes the PFU database and the minimum wage effects that can be measured with the data. Section 3 presents the characteristics of low-wage jobs in 2023. Section 4 discusses how a change in the minimum wage can affect employment, earnings, and public finances and presents the two lines of analysis we have conducted. Section 5 proposes a methodology developed to simulate the impacts of the proposed minimum wage increase during a transition period from 2025 to 2030 and presents the results. Section 6 proposes a methodology developed to simulate the impacts of the proposed minimum wage increase if reform had been in place in 2023 and presents the estimated employment, earnings, and tax and social contribution impacts. Finally, conclusions and policy recommendations are drawn in section 7.

2 Data

The analysis presented in this paper is based on a 10 percent random sample of jobs in the 2023 Pension Fund of Ukraine (PFU) database. The database includes all contributors (private and nonmilitary public sector) who acquire pension rights by making contributions. The PFU data includes information on the employment status of the contributor (employee, self-employed, or contractor) which allows us to restrict the analysis to records related to employees' jobs subject to the minimum wage.⁶

For each record, we have information on the gender, age, and experience of the employee; years of service in the job; industry of the enterprise; and reported earnings and contributions. The database includes earnings up to the ceiling on which contributions were paid (including bonuses, overtime, night work, secondary or tertiary jobs, self-employment income, and contractual work). While the earnings data are truncated at the contribution ceiling, this is not an issue for our analysis because the contribution ceiling is 15 times the minimum wage and thus well above wage levels that would be affected by the minimum wage. Section A summarizes the issues that needed to be addressed in preparing the database for our analysis, and the approaches taken to address them.

Table 1 summarizes the distribution of reported number of jobs per worker and the average number of contribution months per job in 2021, 2022 and 2023. In 2023, just under 20 percent of wage workers reported more than one job. Workers with only one job made contributions for about 10 months on average in each of these years.

A change in the minimum wage can affect employment, earnings, and public finances in various ways. The PFU database is well suited for analysis of some of these effects. As we have noted, by including all jobs where contributions have been made to the Pension Fund, it represents a good

⁶In the 2023 database, this restriction resulted in 889,408 observations (i.e., jobs) out of 1,048,575 total records.

Table 1: Distribution of number of jobs per worker and contribution months.

Number of jobs per worker	2023			2022			2021		
	N. of workers	Share of total workers	Avg. number of contrib. months	N. of workers	Share of total workers	Avg. number of contrib. months	N. of workers	Share of total workers	Avg. number of contrib. months
1	570,224	80.4%	10.2	707,442	83.5%	9.9	738,642	82.2%	10.1
2	109,785	15.5%	7.2	110,112	13.0%	6.9	131,772	14.7%	6.5
3	22,442	3.2%	6.2	23,097	2.7%	6.2	21,692	2.4%	5.7
4	5,133	0.7%	5.7	4,705	0.6%	6.0	4,497	0.5%	5.8
5	1,212	0.2%	6.1	1,050	0.1%	6.7	1,194	0.1%	6.1
6 and more	714	0.1%	7.1	697	0.1%	7.4	975	0.1%	6.6
Total	709,510	100.0%	9.0	847,103	100.0%	8.9	898,772	100.0%	8.8

Source: PFU, 10 percent random sample in each respective year.

approximation of the population of jobs affected by the minimum wage. It provides us with the necessary information on earnings and some basic demographic information to analyze low-wage work and estimate the impacts of minimum wage changes. However, there are some limitations. Most importantly, the data do not include information on hours worked or whether work in a given month was for less than the complete month. We observed certain reporting errors that affected some observations on the number of jobs a worker held during the year and on the earnings for a very small share of jobs. Finally, any effects on informal employment cannot be observed.

3 Who would be affected by a minimum wage change?

In this section, we begin by describing the distribution of earnings reported in the PFU database to understand the number of jobs that could be affected by a change in the minimum wage. Then we analyze the characteristics of workers in low-wage jobs to see who are likely to be affected. As a reference, the minimum wage in 2023 was UAH 6,700, about 40 percent of the national average monthly wage (UAH 16,666), estimated projecting data from the State Statistical Service.⁷ The minimum wage in 2024 and 2025 was UAH 8,000 and was raised to UAH 8,647 at the beginning of 2026.

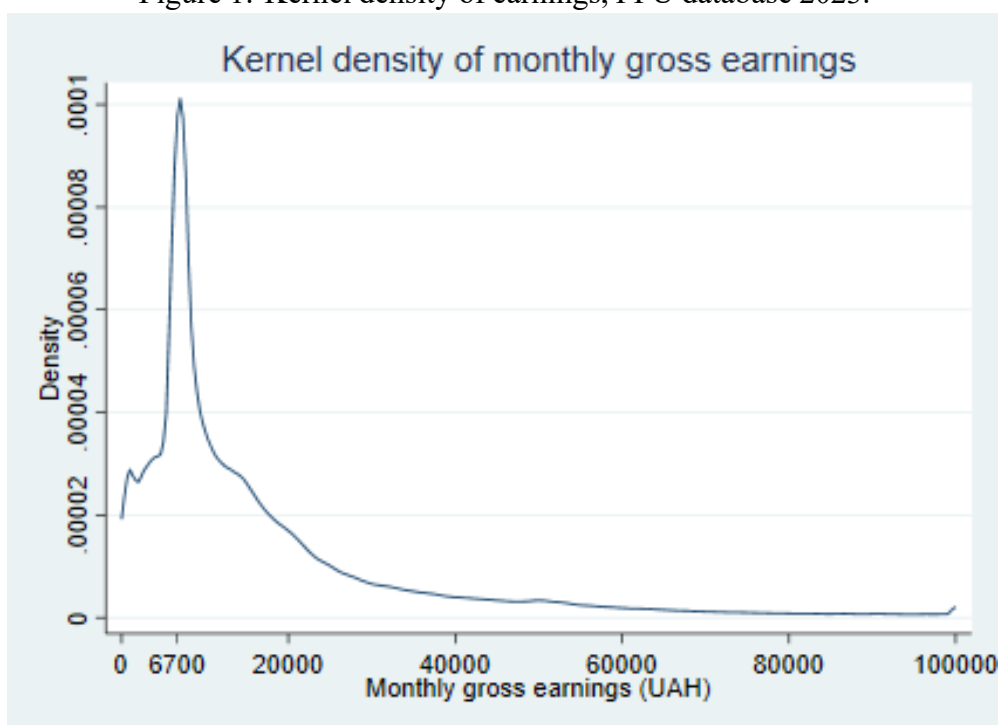
There are two important aspects of low-wage work that we cannot cover because of data limitations. One is the many low-wage jobs in the informal sector, which is not included in the PFU database. The other is the correlation of low-wage work with household poverty. Minimum wages are often seen by policy makers as an anti-poverty measure so it would be very useful to understand the extent to which poor households would benefit from higher minimum wages.

3.1 Distribution of earnings

Figure 1 shows the Kernel density of monthly earnings reported in the 2023 PFU database. Two things stand out. One is the expected spike at the 2023 minimum wage of UAH 6,700. The other is the significant number of observations below the minimum wage. There are various reasons that could explain this, most importantly that the reported monthly earnings may apply to jobs that were part-time or part-month, neither of which can be observed in the PFU data.

⁷Due to the large-scale conflict in Ukraine, the State Statistics Service suspended the monthly publication of average wage data between February 2022 and June 2025. As of July 2025, the publication of these data has been resumed.

Figure 1: Kernel density of earnings, PFU database 2023.



Note: The figure has been truncated at UAH 100,000. Less than 5 percent of the PFU records have earnings above UAH 100,000.

Table 2 shows the same information using earnings bands. The bands have been set to provide details on the lower portion of the wage distribution. The table indicates that large numbers of jobs could be affected by an increase in the minimum wage. While the number of reported earnings exactly equal to UAH 6,700 is much larger than the number at any other distinct wage (and thus the spike in the Kernel distribution), they represent, in fact, only 2.0 percent of jobs in the sample. But almost 24 percent of the records have reported earnings below the minimum wage, presumably for reasons noted above. Table 2 also shows that 13.4 percent of jobs are right above the minimum wage level, between the minimum wage and UAH 8,000 – which is 20 percent above the minimum wage in 2023 – and in a zone where jobs would be most affected by the minimum wage. UAH 8,000 is also the minimum wage in 2024 and 2025. The table also identifies the UAH 8,000-10,000 group of jobs; while these jobs would not be as affected by a minimum wage increase as the lower-wage ones, they could experience some spillover effect, depending on the size of the increase. Finally, over half of the jobs have earnings of UAH 10,000 or more; we would expect that these jobs would be unaffected by a minimum wage increase, as proposed in the reform.

3.2 Who holds the low-wage jobs?

To describe the characteristics of formal-sector low-wage jobs in terms of gender, age, and industry,⁸ we present distributions for jobs where reported earnings in 2023 were below the minimum wage, at the minimum wage, and in a range slightly above the minimum wage (UAH 6,700-8,000) where a change in the minimum wage is most likely have a spillover effect. To show which groups are over/underrepresented in low-wage work, we also show the distribution of all jobs in the sample.

⁸These (along with years of service) are the only variables in the PFU database that describe the workers and enterprises associated with each record.

Table 2: Distribution of earnings, PFU sample 2023.

Earnings (UAH)	Number of jobs	Percent
Less than 6,700	203,236	23.9%
6,700 (minimum wage)	16,987	2.0%
6,700–8,000	113,834	13.4%
8,000–10,000	75,057	8.8%
10,000 and above	442,447	52.0%
Total	851,561	100.0%

Source: PFU sample, 2023.

Women are overrepresented in low-wage work (Table 3). They accounted for most workers (53-56 percent) in jobs below, at, and slightly above the minimum wage. In contrast, only 48.2 percent of all jobs in the database were held by women.

Table 3: Low-wage jobs and sample distribution by gender, PFU sample 2023.

	< 6,700 UAH	6,700 UAH	6,700–8,000 UAH	All jobs
Male	45.1%	46.9%	44.0%	51.8%
Female	54.9%	53.1%	56.0%	48.2%

Source: PFU sample, 2023.

The distribution of low-wage workers by age is roughly similar to the distribution of all jobs in the database (Table 4). It is notable that, while youth tend to be significantly overrepresented among low-wage workers in many countries, this is not strongly the case in Ukraine, based on the PFU database. Compared to their employment share, workers in the 14–24-year-old group do account for a larger percentage of jobs below or at the minimum wage, but the difference is not large. In terms of numbers, most low-wage workers are in the prime-age groups: individuals between 25 and 54 account for 66 percent, 74 percent, and 65 percent of those with earnings below, at, or just above the minimum wage, respectively.

Table 4: Low-wage jobs and sample distribution by age, PFU sample 2023.

	< 6,700 UAH	6,700 UAH	6,700–8,000 UAH	All jobs
14–24 years	10.2%	8.5%	6.9%	7.2%
25–34 years	18.5%	22.4%	16.3%	18.6%
35–44 years	25.4%	28.1%	24.7%	26.9%
45–54 years	22.4%	23.2%	24.0%	24.3%
55–64 years	17.1%	14.6%	21.1%	17.5%
65–74 years	5.7%	3.0%	6.3%	5.0%
75 years and older	0.7%	0.3%	0.6%	0.5%

Source: PFU sample, 2023.

Wholesale and retail trade is the dominant low-wage sector with more than twice as many jobs below, at, or just above the minimum wage than any other industry (Table 5). Moreover, the incidence of low-wage work is high in the wholesale and retail trade sector relative to its share

of total employment. Manufacturing, public administration,⁹ education, and health also have significant shares of low-wage work, but these shares are relatively similar to their shares of total employment. The information and communication sector has a large number of jobs at the minimum wage (second to wholesale and retail trade) but few jobs below or just above the minimum.

Table 5: Low-wage jobs and sample distribution by industry, PFU sample 2023.

	< 6,700 UAH	6,700 UAH	6,700–8,000 UAH	All jobs
A Agriculture	3.2%	5.3%	4.8%	3.6%
B Mining and Quarrying	0.8%	0.1%	0.5%	1.2%
C Manufacturing	10.1%	6.2%	9.0%	9.3%
D Electricity	1.0%	0.2%	0.7%	2.8%
E Water Supply	0.9%	0.6%	0.9%	1.2%
F Construction	4.7%	3.1%	3.5%	2.9%
G Wholesale and Retail Trade	24.2%	36.8%	27.2%	16.3%
H Transportation and Storage	6.9%	7.1%	7.4%	6.9%
I Accommodation and Food	4.4%	4.8%	3.4%	1.9%
J Information and Communication	1.6%	14.1%	1.7%	1.7%
K Financial and Insurance	2.0%	0.3%	1.1%	1.8%
L Real Estate	2.3%	3.9%	2.1%	1.4%
M Professional	4.1%	3.1%	2.9%	3.2%
N Administrative	4.7%	4.2%	4.5%	3.2%
O Public Administration	10.4%	1.8%	11.1%	24.8%
P Education	8.2%	2.0%	8.9%	7.4%
Q Human Health	7.4%	2.7%	8.0%	8.4%
R Arts Sports	1.4%	0.6%	1.2%	1.0%
S Other Service	1.7%	3.0%	1.2%	1.0%
T Households as Employers	0.0%	0.0%	0.0%	0.0%
U Extraterritorial Organizations	0.0%	0.0%	0.0%	0.0%

Source: PFU sample, 2023.

4 Estimating direct and indirect impacts of the minimum wage increases

4.1 Effects on employment

Higher labor costs because of a minimum wage increase can have the direct effect of fewer formal sector jobs, either because of layoffs or reductions in hiring. This effect occurs when employers assess that the productivity of workers in these jobs would be lower than the cost of employing them.¹⁰ This is the employment effect we can directly estimate with the PFU data. The magnitude

⁹The case of public administration is interesting. While the sector has substantial numbers below the minimum wage (though much less than its share of overall employment), if we assume it complies with labor legislation, this is likely due to part-time work or part-month work.

¹⁰This effect can be reduced where employers introduce measures such as training and improved work processes to increase the productivity of low-wage workers which makes them financially viable at the new minimum wage. This is one reason why minimum wage increases do not always result in employment losses (Betcherman, 2015).

of this effect depends on how sensitive labor demand is to changes in labor costs. Our assumptions on this (i.e., labor demand elasticity) are discussed in section 5.

Employers can respond to higher labor costs by reducing hours of employees, rather than eliminating jobs. Also, and this is especially relevant in emerging and developing economies, a higher minimum wage can lead to more informality in the form of either unreported employment or under-reported earnings.¹¹ Unfortunately, as noted earlier, the PFU data do not include hours and it only covers the formal sector so these two effects cannot be directly considered in our analysis.

In Ukraine, minimum wages increases could have indirect impacts on formal job creation through the taxation system. The upper revenue threshold of the simplified tax system in Ukraine is proportional to the minimum wage. As a result, raising the minimum wage increases the number of firms that are eligible for the simplified taxation system and would find it favorable to expand, hire and grow until a certain point (the new revenue threshold). In addition, sole proprietors (FOP) under group one of the simplified tax system pay unified social contributions proportional to the minimum wage. Minimum wage increases raise the tax burden on FOPs which could have a negative impact on their labor supply. At the same time, minimum wage increases could have a positive impact on FOP labor demand. Employers can meet more of their labor demand by substituting independent contractors (who are not covered by minimum wages) for formal wage employees (more expensive under higher minimum wage). Note that the possibilities for this substitution would increase under the proposed Labor Code (art. 38) which allows more scope for employers to use independent contractors by increasing the conditions necessary for defining an “employment relationship”. The PFU database does include independent contractors; however, we do not have a methodology for estimating the extent to which minimum wage increases could affect the substitution of contractors for regular employees. One simple test we could carry out was to see if the ratio between contractors and employees changed in the past when minimum wages increased; we did not find any consistent patterns.

Finally, a higher minimum wage can positively affect employment by increasing labor supply, either by attracting inactive people to the workforce or by encouraging informal workers to join the formal sector. In Ukraine where inactivity rates are still high and workforce shortages are a persistent issue, a higher minimum wage that encouraged formal labor supply could be a potentially important effect. However, we could not estimate this supply-side effect with the PFU data.

4.2 Effect on wages

Most directly, the wages of workers earning below the new minimum wage would be increased to (at least) the new standard. There is also an indirect effect of an increase in the minimum wage on earnings above the minimum wage. This spillover effect, where wages increase for above-minimum wage workers, occurs in order to maintain established wage differentials within the firm and between occupations. This effect is strongest for workers earning just above the minimum wage and diminishes progressively for workers higher in the wage distribution. At some point, any spillover effect of an increase in the minimum wage disappears. The PFU database includes information on earnings which allows us to estimate these wage effects. Calculating the spillover effect requires some assumptions which are discussed in section 5.

¹¹The possibility of increased informality is relevant because underreported employment and earnings are a feature of the Ukrainian labor market. Since February 22, 2022, it has been difficult to get reliable figures on informal work; however, campaigns to combat informality, including inspections, have been scaled back (Government of Ukraine, 2025).

4.3 Effect on public finances

In turn, these effects on employment and wages can also affect public finances in different ways. Most directly, an increase in the minimum wage can affect taxes and social contributions, which are a fixed percentage of gross wages. This can work in two ways. If the increase in total wages paid because of a higher minimum wage is greater than the wages lost due to a decrease in employment, then the net effect on revenue will be positive. However, if wages lost are greater, then the fiscal impact will be negative. We make estimates of this effect for our simulations.

The dynamics created by an increase in the minimum wage can also affect tax and social contributions made by independent contractors. We have outlined how a higher minimum wage can increase employment for this category of labor. There are various considerations involved in capturing the effect of a minimum wage increase on taxes and contributions paid by independent contractors, including estimating the magnitude of the employment and income effect of the higher minimum wage on independent contractors and accounting for the different tax and social contribution rules for different categories of contractors. We have not attempted to make these estimates in this paper.

Another fiscal implication of an increase in the minimum wage is the effect on social protection programs with eligibility rules and benefit levels tied to the minimum wage. Based on a review of social benefits in Ukraine, there are only two programs with eligibility and benefit formulas that are linked with the minimum wage: the Municipal Nanny program and foster care benefits, both administered by the Ministry of Social Policy. Given the small coverage and benefit amount of the programs (1,600 and 541 beneficiaries in 2024, respectively), we would not expect changes in the minimum wage to lead to substantial social spending increases.¹²

To assess the potential impacts of the minimum wage proposal on employment, wages, and public finances, we conduct two complementary analyses with the PFU data. Note that in both exercises, we use jobs as the unit of analysis (as opposed to individual workers/active contributors).

First, we analyze the effects if the minimum wage is initially set at 40 percent of the average wage of the previous year (Jan-June) and is increased by 2 percentage points each year until it reaches 50 percent of average wages (previous year, Jan-June). This simulates what would happen if the minimum wage were set at the initial floor indicated in the proposal and follows the transition set out to reach the eventual 50 percent threshold. For this analysis, we assume the new minimum wage regime is in place in 2025 and that the minimum wage provisions are triggered at that time. This exercise has the advantage of simulating the intended reform proposal. However, assumptions need to be made on the future evolution of wages and the minimum wage.

Second, we conduct an analysis of what the impacts would have been if the minimum wage proposal had already been introduced in 2023. The minimum wage proposal is simulated under two scenarios, with the new minimum wage set at 40 percent and at 50 percent of the average wage in 2022 (Jan-June). This exercise has the advantage of relying on observed data and it also shows the different impacts of the minimum wage when it is set at 50 percent of the average wage, relative to 40 percent. However, it does not capture the transitional dynamics built into the reform.

In summary, each method serves a distinct purpose. The first approach models the reform trajectory as envisaged by the proposal, while the second approach relies on observed data to simulate impacts. Together, they can help illustrate how the minimum wage proposal is likely to affect employment,

¹²The compensation benefit for the “Municipal Nanny” program is calculated based on 100 percent of the hourly minimum wage established as of January 1 of the relevant year, for each hour of childcare provided, but for no more than 165 hours per month. The benefit for foster care is set at the level of three minimum wages per month, while for foster carers registered as individual entrepreneurs, the remuneration amounts to 3.5 minimum wages.

wages, and public finances.

5 Simulation of impacts during a transition period from 2025 to 2030

5.1 Methodology

Under the draft proposal, the minimum wage floor would be set at 40 percent of the previous year's average wage (Jan-June) and would increase by two percentage points per year until it reaches 50 percent. We simulate the effects of this transition, starting at 40 percent of the average wage in 2025, and reaching 50 percent in 2030. For each year, we estimate employment, earnings, social security contributions and taxes under the minimum wage regime set out in the proposal ("reform scenario") and compare this with a "no-reform" scenario where the 2025 actual minimum wage is simply increased year over year according to wage inflation projections. The simulations incorporate both wage spillovers and labor demand elasticities.

The methodology to estimate the impacts of the minimum wage proposal during the transition period from 2025 to 2030 involved the following steps:

1. Datasets were created for each year by multiplying earnings in PFU 2023 by the nominal wage growth rates from the State Statistics Service of Ukraine. To construct the dataset for 2024, all earnings in PFU 2023 are multiplied by the nominal wage growth rate in 2024. This procedure is repeated for each year until 2030 using projected wage inflation rates from the State Statistical Service.
2. To set wages under the "no reform" scenario, we set earnings below the minimum wage to the minimum wage.¹³ For 2004-2026, we use the actual minimum wages since they have already been determined. For later years, we assume the minimum wage increases in line with the nominal wage growth rate.
3. To calculate the new minimum wage for 2025 in the "reform" scenario, we start with the projected 2024 dataset (i.e., the actual 2023 wages increased by wage inflation). We calculate the average wage and adjust it using the ratio of the average wage (first six months/full year) in 2024. The same procedure is applied for subsequent years, using the average ratio of the first six months wage to the full year wage from 2022-2024 to adjust the average wage for the first six months. In the "reform" scenario, the minimum wage is then set at 40 percent of the January-June average for 2024 and is subsequently increased by two percentage points until it reaches 50 percent in 2030.
4. The "naive" wage effect of the minimum wage increase was calculated by comparing the aggregate wage bill for both the "no reform" and "reform" scenarios. This wage effect is naive because the wage spillover and employment impacts of the minimum wage increase have not yet been taken into account.
5. The wage spillover effects were estimated. It is well known that increases in the minimum wage have a spillover effect on the wages of employees earning just above the minimum. This will at least partly maintain established wage differentials. There have been a few empirical estimates of the magnitude of these spillovers (e.g., Neumark et al. 2004; Autor et al. 2016; Dube 2019). However, these estimates are from developed countries, especially the U.S. and the U.K. None are

¹³This is to address the jobs where reported monthly earnings are below the minimum wage, presumably because of part-time or part-month work.

from contexts like Ukraine, especially in a wartime setting. With this caveat, we have adopted the consensus estimates from the existing literature. For all jobs with wages up to 10 percent above the new minimum wage, wages were increased by 50 percent of the minimum wage increase; for jobs in the 10-20 percent zone above the new minimum wage, wages were increased by 15 percent of the minimum wage increase; for jobs with wages 20-30 percent above the new minimum wage, wages were increased by 5 percent of the minimum wage increase. Jobs with wages 30 percent or higher than the new minimum wage were assumed to be unaffected.

6. The total wage bill was then recalculated with the wage spillovers for the “no reform” and “reform” scenarios. The difference between these wage bills is the effect of the minimum wage increase on labor costs. The percentage changes can then be used with assumptions about labor demand elasticity to calculate the employment effects of the minimum wage proposals.

7. The employment effects due to the change in labor costs because of the reform were estimated. These estimates were based on assumptions about labor demand elasticity, which indicates how labor demand changes with changes in the cost of labor. Since we have not found any relevant studies for Ukraine nor a dataset that would allow us to make our own estimates, we have reviewed the international empirical literature to select the most likely labor demand elasticities for our simulations. The seminal work of Hamermesh (1993) leads to the conclusion that the best estimate of the long-run own-wage labor demand elasticity is around -0.30. Lichter et al. (2015) have done the most exhaustive analysis, based on over 900 estimates; their best estimate is that the long-run elasticity is -0.25. However, there is considerable heterogeneity in estimates of labor demand elasticity, so it is best to consider a range, rather than a single estimate. Moreover, these studies, and the literature in general, are dominated by evidence from high-income countries. In general, middle-income countries (with more informality and less scope for capital substitution) tend to have somewhat lower elasticities. As well, much of the literature has been concerned with long-run estimates; short-run (1-2 year) labor demand elasticities are lower. Furthermore, in Ukraine, the structural and idiosyncratic labor supply shortages induced by the conflict would be expected to reduce these elasticities further. With these considerations in mind, we have concluded that the short-run labor demand elasticity would likely be between -0.15 and -0.30. This means that a 10 percent increase in labor costs would result in a decrease in labor demand of 1.5 percent and 3.0 percent, respectively. We use these two elasticities in estimating the range of likely employment effects on the number of jobs in the PFU database.

8. The jobs lost, as estimated in the previous step, were randomly assigned to minimum wage jobs in the PFU database. The selected jobs were then removed from the dataset before calculating the wage effect of the new minimum wages.

9. The new aggregate wage bill was calculated and compared with the actual wage bill in the PFU database to estimate the final effect of the minimum wage change on earnings.

10. Social security contributions and taxes are calculated as a share of the wage bill for both the “no reform” scenario and the “reform” scenario. In Ukraine, the standard social security contribution rate is set at 22 percent of gross earnings for most workers, with lower rates applied to certain categories, such as workers with disabilities. To determine the social security contribution rate used in our analysis, total contributions recorded in PFU 2023 were divided by total earnings, yielding a social security contribution rate of 21.75 percent. This rate was applied to the total wage bill calculated in the previous step to estimate social security contributions under the “reform” scenario. For taxation, a combined tax rate was applied to the total wage bill, consisting of 18 percent personal income tax and a military tax of 5 percent.

5.2 Results

Table 6 presents the minimum wages under both the “no reform” and “reform” scenarios. In 2025, the minimum wage under the “reform” scenario is slightly higher than the actual minimum wage. Over time, the gap between the two scenarios widens, with the minimum wage in 2030 under the “reform” scenario being 5,560 UAH (44.7 percent) higher than the minimum wage under the “no reform” scenario. This effect is primarily driven by the gradual increase in the minimum wage as a share of the average wage, from 40 percent to 50 percent.

Table 6: Monthly minimum wages (actual for 2025 and 2026 and simulated for 2027–2030).

	2025	2026	2027	2028	2029	2030
<i>No reform scenario</i>						
Monthly MW (UAH)	8,000	8,647	9,564	10,549	11,519	12,452
<i>Reform scenario</i>						
Monthly MW (UAH)	8,280	10,221	11,899	13,758	15,835	18,013
Share of average PFU wage	40%	42%	44%	46%	48%	50%
(Jan–June previous year)						
Increase of proposal MW compared to “no reform”	3.50%	18.20%	24.40%	30.40%	37.50%	44.70%

Source: PFU sample, 2023.

If there were no job losses and no wage spillover effects, the new minimum wage under the “reform” scenario would initially have a very small impact on the total wage bill, with a 0.14 percent higher wage bill compared to the “no reform” scenario. Over time, however, the effect grows, with the total wage bill 2.86 percent higher than in the “no reform” scenario by 2030 (Table 7). Once we include wage spillovers in the analysis, a similar pattern is observed, although the difference between total wages in the “reform” scenario and “no reform” scenario is slightly larger. This is because wage spillovers increase the wages of workers slightly above the minimum wage, further raising the wage bill.

Table 7: Estimated effect of proposed minimum wages on total wage bill with and without wage spillovers, projected PFU 2025–2030.

	2025	2026	2027	2028	2029	2030
<i>No reform scenario</i>						
Actual minimum wage bill (trillion UAH)	2.02	2.25	2.49	2.74	2.99	3.24
<i>Reform scenario</i>						
Naïve wage bill (trillion UAH)	2.02	2.27	2.51	2.79	3.06	3.33
% change vs. no reform	0.14%	0.77%	1.12%	1.57%	2.18%	2.86%
Wage bill including wage spillovers (trillion UAH)	2.03	2.27	2.53	2.80	3.07	3.35
% change vs. no reform	0.18%	1.19%	1.59%	2.04%	2.69%	3.43%

Note: Total wage bill estimates refer to all formal employees.

To estimate the employment effects of the minimum wage proposal, we use the labor cost impact estimates shown in Table 7 and apply a low-elasticity scenario (-0.15) and a high-elasticity one (-0.30). The results are presented in Table 8. As the wage bill under the “reform” scenario increases over time relative to the “no reform” scenario, job losses become progressively larger. In 2025, the estimated employment effect ranges from a 0.03 percent decrease in the low-elasticity scenario to a 0.05 percent decrease in the high-elasticity scenario. By 2030, however, the job losses are projected to increase significantly, ranging from 0.51 percent to 1.03 percent decrease. The numbers of jobs lost shown in the table refer to the overall economy.

Table 8: Estimated job loss in the whole economy associated with the proposed minimum wages, projected PFU 2025–2030.

	Low employment effect (elasticity = -0.15)	High employment effect (elasticity = -0.3)
2025	0.03% decrease (2,266 jobs lost)	0.05% decrease (4,532 jobs lost)
2026	0.18% decrease (15,146 jobs lost)	0.36% decrease (30,292 jobs lost)
2027	0.24% decrease (20,123 jobs lost)	0.48% decrease (40,245 jobs lost)
2028	0.31% decrease (25,887 jobs lost)	0.61% decrease (51,775 jobs lost)
2029	0.40% decrease (34,084 jobs lost)	0.81% decrease (68,168 jobs lost)
2030	0.51% decrease (43,479 jobs lost)	1.03% decrease (86,959 jobs lost)

Note: The number of job losses refers to all formal employees.

After accounting for the estimated job losses, we recalculated the total wage bill to finalize our estimate of the wage effects of the minimum wage proposal. We assume that all job losses occur among workers who would have been earning the new minimum wage. The results are presented in Table 9, showing an increased wage bill relative to the original wage bill. The proposal would result in higher total earnings, again only slightly (0.17 percent) at the beginning of the transition but increasing to 3.05-3.24 percent at the end of the transition period when the minimum wage would be 50 percent of the previous year's average wage (Jan-June). Social security contributions and taxes would be affected to a similar extent, as they are proportional to earnings. Detailed tables on the wage bill and fiscal effects under the two elasticity scenarios are shown in Annex Tables A1 and A2.

Table 9: Estimated effect of the proposed minimum wages on the total wage bill relative to the no reform scenario with wage spillovers and employment impacts included, projected PFU 2025–2030.

	Low employment effect (elasticity = –0.15)	High employment effect (elasticity = –0.3)
2025	0.17%	0.17%
2026	1.15%	1.10%
2027	1.52%	1.45%
2028	1.94%	1.85%
2029	2.55%	2.41%
2030	3.24%	3.05%

Note: Total wage bill estimates refer to all formal employees.

6 Simulation of impacts if the reform had been in place in 2023

6.1 Methodology

In this simulation, we impute employment and earnings in 2023 if the proposed reform had already been in place. We look at two scenarios, one where the minimum wage is set at 40 percent of the January-June 2022 average wages, and second, where it is set at 50 percent. In this exercise, we use actual employment and earnings from the PFU database. As before, we consider both wage spillovers and labor demand elasticities.

The methodology included the following steps:

1. Records with wages below UAH 6,550¹⁴ were reset to the prevailing minimum wage in 2022 (6,550 UAH) on the assumption that no formal sector worker could be earning below the minimum.
2. The average wage was calculated for January-June 2022, which would be the basis for the new minimum wage in 2023 as stipulated in the draft proposal. We calculated the average wage based on PFU 2022. In order to estimate the January-June average, we calculated the ratio of the first six months of earnings in 2022 to the estimated annual average and applied this ratio to the annual average.¹⁵
3. The proposed minimum wages of 40% and 50% of this average wage for January-June 2022 were calculated. In the 40 percent scenario, the resulting minimum wage is slightly lower than the actual minimum wage. In contrast, setting the new minimum wage at 50 percent of the average wage produces a substantially larger minimum wage than the actual one. In the 2023 PFU database, records with wages below UAH 6,700 were reset to the prevailing minimum wage in 2023 (UAH 6,700) under the “no reform” scenario, based on the assumption that no formal sector worker could be earning below the minimum wage.
4. Earnings in the 2023 PFU database were adjusted to reflect the scenario where the new minimum wage under the reform proposal was in force. Under the “reform” scenario where the minimum wage is set at 40 percent of the average wage, all jobs earning the original minimum wage were set to the new, lower minimum wage. Under the scenario where the minimum wage is set at 50 percent of the average wage, all earnings falling below that threshold were set to the level of that new minimum wage.
5. The “naive” wage effect of the minimum wage increases was calculated. This involved comparing the new aggregate wage bill (separately for the 40 percent and 50 percent scenarios) with the actual wage bill observed in the PFU database. This wage effect is naive because the wage spillover and employment impacts of the minimum wage increase have not yet been considered.
6. The total wage bill was recalculated with the wage spillovers included for the 50 percent scenario where the new minimum wage is higher than the actual minimum wage. In the 40 percent scenario, where the minimum wage under the proposal is lower than the actual minimum wage, we assume there would be no (negative) wage spillovers. The assumptions on the size of the spillovers are the same as those used in the transition analysis reported in section 5. The difference between this total wage bill and the actual wage bill in the PFU 2023 database is the effect of the minimum wage

¹⁴The minimum wage was set at 6,500 UAH from January to September 2022 and was then increased to 6,700 UAH from October 2022 onwards. We do the following calculation to get to the value of 6,550 UAH: $(9 \times 6,500 + 3 \times 6,700) / 12 = 6,550$.

¹⁵Following the same methodology, we also assess the implications of an alternative benchmark for setting the minimum wage that is being considered by the Ministry of Economy. Specifically, we simulate a scenario where the new minimum wage is calculated using the average wage in January of the previous year rather than the 6 months January-June average.

increase on total labor costs. The percentage changes can then be used with assumptions about labor demand elasticity to calculate the employment effects of the minimum wage proposal. We use the same labor demand elasticities as in the transition analysis.

7. In the 40 percent scenario, the number of jobs gained, based on the calculations from the previous step, was added to the dataset. In the 50 percent scenario, the number of jobs lost was randomly assigned to jobs earning the minimum wage in the PFU database. These jobs were deleted from the database to allow for the calculation of the wage effect of the new minimum wages under the reform proposal.

8. The new aggregate wage bill was calculated and compared with the actual wage bill in the PFU database.

9. Social security contributions and taxes were calculated as a share of the wage bill for the “no reform” scenario and the reform scenarios. This was done in the same way as in the transition analysis.

6.2 Results

Using the methodology described above, the 2023 minimum wages based on the government’s proposal would have been UAH 6,471 (40 percent) or UAH 8,089 (50 percent).¹⁶ The minimum wage based on the 40 percent average is 3.4 percent lower (UAH 229) than the actual 2023 minimum wage of UAH 6,700 and the minimum wage based on the 50 percent average is 20.7 percent higher (UAH 1,389). The size of these differences determines the direction and magnitude of the impacts we describe below, with the new minimum wage based on the 40 percent average having only a very small effect on employment and earnings, and the minimum wage based on the 50 percent average having larger effects and in the opposite direction.

If there was no job loss effect and no spillover wage effects, the new minimum wage based on 40 percent of the average wage would have had a very small impact on the total wage bill (0.2 percent decrease) while a minimum wage based on 50 percent of the average wage would have a significantly larger effect (2.1 percent higher than the actual wage bill) (Table 10).

What happens when we take into account wage spillover effects where workers slightly above the minimum wage receive increases to maintain established wage differentials with minimum wage workers? For the 50 percent scenario, the right column of Table 10 shows an increase in total labor costs of 2.4 percent relative to the actual wage bill. This is the effect of the minimum wage proposal on total labor costs. Note that the calculations in Table 10 do not represent the final wage bill effect of the minimum wage proposals since the employment impacts still need to be considered. In order to estimate these employment effects, we take the labor cost impacts shown in Table 10 and apply our labor demand elasticity scenarios. Table 11 shows the results. The difference in employment impacts between the two minimum wages is significant. In the 40 percent scenario, where the minimum wage under the proposal would be slightly lower than the actual minimum wage in 2023, a small job gain can be observed. When the 50 percent scenario is simulated, the employment effect is larger and negative, with a 0.35 percent and 0.7 percent reduction in the low- and high-elasticity scenarios, respectively. The effects on the number of jobs refer to estimates for the whole economy (i.e., 10 percent sample estimates multiplied by 10).

¹⁶The average wage used to determine the new minimum wage is based on the average wage in the PFU 2022 sample of UAH 16,275; and the January-June 2022 average wage estimated to be UAH 16,177, using the estimate that the first 6 months average is 99.4 percent of the annual

Table 10: Estimated effect of proposed minimum wages on total wage bill with and without wage spillovers, PFU sample 2023.

Actual wage bill of PFU sample (UAH trillions)	New wage bill of PFU sample – 40% of Jan–June 2022 average wage (UAH trillions)	New wage bill of PFU sample – 50% of Jan–June 2022 average wage (UAH trillions)	New wage bill of PFU sample using wage spillovers – 50% of Jan–June 2022 average wage (UAH trillions)
1.45	1.45	1.48	1.48
	0.2% decrease relative to actual wage bill	2.1% increase relative to actual wage bill	2.4% increase relative to the actual wage bill

Note: Total wage bill estimates refer to all formal employees.

Table 11: Estimated job effect in the whole economy associated with the proposed minimum wages, PFU database 2023.

	Low employment effect scenario (elasticity –0.15)	High employment effect scenario (elasticity –0.3)
Minimum wage decreases by 3.4% (40% of Jan–June 2022 average wage)	3,053 jobs gained (0.04% increase in labor demand)	6,106 jobs gained (0.07% increase in labor demand)
Minimum wage increases by 20.7% (50% of Jan–June 2022 average wage)	29,812 jobs lost (0.35% reduction in labor demand)	59,625 jobs lost (0.70% reduction in labor demand)

Note: Estimated total job losses refer to all formal employees in the economy.

After considering these employment effects, we have recalculated the total wage bill which finalizes our estimate of the wage effects of the minimum wage proposal. We assumed that all the job losses would be among workers who would be earning the new minimum wage. The results are shown in Table 12. The changes relative to the original wage bill (1,449,163,587,710 UAH) are shown in parentheses. The effects are small (0.2 percent decrease) under both scenarios in the case of the lower minimum wage increase; when the minimum wage is set at 50 percent of the average wage, the total wage bill increases by around 2 percent in both the low- and high-elasticity scenarios. An overview of the change in the wage bill by industry can be found in Table A3.

Table 12: Estimated effect of proposed minimum wages on total wage bill with employment and wage spillover effects included, PFU sample 2023.

	Low employment effect scenario (elasticity –0.15)	High employment effect scenario (elasticity –0.3)
Minimum wage decreases by 3.4% (40% of Jan–June 2022 average wage)	1,445,914,195,015 UAH (0.22% decrease relative to the actual wage bill)	1,446,151,805,880 UAH (0.21% decrease relative to the actual wage bill)
Minimum wage increases by 20.7% (50% of Jan–June 2022 average wage)	1,481,280,437,136 UAH (2.22% increase relative to the actual wage bill)	1,479,367,886,520 UAH (2.08% increase relative to the actual wage bill)

Note: Total wage bill estimates refer to all formal employees.

7 Conclusion

This paper contributes to address three gaps in the minimum wage literature: the lack of evidence from conflict-affected settings, the limited number of ex-ante impact studies, and the underutilization of administrative data for analyzing employment and wage impacts. While much of the literature analyzes the impacts of past changes in the minimum wage, our study is forward-looking by mimicking the features of a proposed reform and estimating what that reform is likely to mean for future employment, earnings, and social contributions and taxes.

The main analytical and policy contribution of our paper is to offer a useful methodology for policy makers to anticipate the likely effects of minimum wage reforms that are being considered. It shows how a proposed reform can be simulated using microdata that includes workers, their earnings, and their social contributions. With this methodology and data, direct and context-specific estimates of the effects of a minimum wage change can be made.

Another unique feature of our analysis is the use of administrative data. Compared to studies that rely on household data, the administrative records accurately represent the formal sector that would be directly affected by a change in the minimum wage policy. The PFU database includes information on earnings and other relevant variables for all jobs where workers have contributed to the Pension Fund. Thus, it provides a very good approximation of the universe of workers and jobs that would be affected by the minimum wage. By offering an accurate and comprehensive picture of the formal sector jobs, wages, and social contributions, the PFU database has advantages compared to household surveys that are often used for minimum wage analysis.

On the composition of low-wage work in wartime Ukraine, the 2023 Pension Fund microdata reveal

that almost one-quarter of jobs had reported earnings at or below the official minimum wage and another 13 percent were in a zone within 20 percent of the minimum. Low-wage jobs were defined as those with wages below, at, or (roughly) within 20 percent of the minimum wage. Clearly, a large number of jobs could potentially be affected by changes in the minimum wage, either through higher wages or the threat of job loss. Women were more likely than men to hold these low-wage jobs. Young people were overrepresented, but only to a slight degree, in these jobs; over two-thirds were held by prime-age workers (25-54 years of age). Wholesale and retail trade was the dominant low-wage sector with more than twice as many jobs below, at, or just above the minimum wage than any other industry.

To assess the impacts of the minimum wage proposal on employment, wages, and public finances, we have conducted two complementary simulation exercises which yield a broadly consistent picture. First, we simulated what would happen if the new minimum wage proposal was put into effect for 2025. In this scenario, the minimum wage is initially set at 40 percent of the previous year's average wage (January–June) in 2025 and increases by 2 percentage points each year until it reaches 50 percent in 2030. Simulations indicate that, by 2030, the minimum wage would be substantially higher, 45 percent above the level it would have reached if adjusted only for wage inflation. This difference is primarily driven by the annual increase in the average wage share from 40 percent to 50 percent. Employment effects are minimal at the start of the transition but grow over time, with projected job losses reaching 0.51–1.03 percent by 2030, depending on labor demand elasticity assumptions. Total earnings also rise, only slightly (0.17 percent) initially but increasing to 3.05–3.24 percent by the end of the period when the minimum wage reaches 50 percent of the previous year's average wage. Since they are a fixed percentage of wages, social contributions and taxes would increase by the same proportion.

Second, we conducted an analysis based on PFU 2023, simulating the impacts as if the proposed minimum wage rules had already been in place in that year. The minimum wage is simulated under two scenarios, set at either 40 percent or 50 percent of the previous year's average wage (January–June). Under the 40 percent scenario, the minimum wage would be UAH 6,471, 3.4 percent lower than the actual 2023 minimum of UAH 6,700. This would result in very small job gains (0.04-0.07 percent, 3,053-6,106 jobs overall). Under the 50 percent scenario, the new minimum wage of UAH 8,089 would be 20.7 percent higher than the actual 2023 minimum, leading to an estimated 0.35–0.70 percent job losses (29,812–59,625 jobs overall). The impact on the total wage bill is modest under the lower minimum wage (0.21-0.22 percent decrease) but rises to over 2 percent when the minimum wage is set at 50 percent of the average wage.

In both scenarios, the impacts of a minimum wage set at 40 percent of the average wage are relatively small in terms of employment, wages, and social contributions/taxes. This is expected since, at this level, the minimum wage would not be very different from the current minimum wage as a ratio of average wages. When the minimum wage is set at 50 percent, the effect on total earnings becomes much more significant, increasing by 2-3 percent (depending on the simulation) over a “no reform” scenario. Job losses increase at the same time but are no more than 1 percent in our estimations.

Overall, our analysis indicates that a higher minimum wage will have a greater relative impact in terms of higher wages for low-wage workers than in eliminating jobs. This result reflects the low labor elasticities that we have assumed are prevailing in the Ukrainian labor market. Unfortunately, there appear to be no estimates of such elasticities in Ukraine, either before or since the large-scale invasion. Thus, we have relied on the consensus of the international literature, interpreted in the

light of the current Ukrainian context, to establish a credible range of elasticities.

Our findings should be interpreted in light of the wartime labor market context that motivated this study's methodological adaptations. The calibrated labor demand elasticities — drawn from the international literature and adjusted toward the lower end of available estimates to reflect reduced labor supply, upward wage pressure, and sectoral reallocation — are the most consequential assumption driving projected job losses. In the absence of Ukraine-specific pre- or post-invasion elasticity estimates, this calibration represents our best estimate but is necessarily uncertain, and future research should treat generating such estimates as a priority as richer longitudinal administrative data become available.

Finally, the analysis is limited to the formal sector: the PFU database does not capture informal employment, hours worked, or household composition and income, which precludes poverty-level or household welfare analysis and limits inference about whether workers who lose formal jobs absorb the shock through informal employment, reduced hours, or labor force exit.

Taken together, the results support two policy conclusions. First, the proposed reform's gradual structure — beginning at 40 percent and phasing up to 50 percent of the average wage over five years — is a reasonable design for managing trade-offs between earnings gains for low-wage workers and employment risk, particularly given the compressed wage distribution and fiscal pressures of a wartime economy. The wage gains are front-loaded for the workers most exposed to the minimum, while employment effects remain small under our conservative elasticity assumptions. Second, and more broadly, the paper demonstrates that an explicit, formula-based process for minimum wage setting — one that ties the floor to a well-defined benchmark wage and is informed prospectively by simulation exercises of the kind presented here — is both feasible and analytically tractable even in settings with significant data constraints. Governments in fragile or conflict-affected states need not wait for ideal data conditions to conduct evidence-based minimum wage policy: administrative payroll records, where available, offer a credible and underutilized alternative to household surveys for this purpose.

Ultimately, minimum wages should support the living standards of workers and their families while encouraging economic development. To achieve this objective, it is important that the setting of the minimum wage follows an explicit process, such as the one set out in the Ukrainian proposal. It is also important that the determination of the minimum wage is evidence based. This should include consideration of social and economic conditions as well as estimations of likely impacts along the lines of the analysis presented in this paper.

References

- Alzate, D., Carranza, E., Duran-Franch, J., Packard, T., and Proffen, C. (2024). How Regulations Impact the Labor Market: A Review of the Literatures on Product and Labor Market Regulations. Working Paper 17536, IZA Discussion Papers.
- Anastasia, G. M., Boeri, T., and Zholud, O. (2026). A Wartime Labour Market: The Case of Ukraine.
- Belman, D. and Wolfson, P. J. (2016). What does the minimum wage do in developing countries? : A review of studies and methodologies. *ILO Working Papers*. Number: 994893283402676.
- Berger, D. W., Herkenhoff, K. F., and Mongey, S. (2022). Minimum Wages, Efficiency and Welfare.
- Betcherman, G. (2015). Labor Market Regulations: What do we know about their Impacts in Developing Countries? *The World Bank Research Observer*, 30(1):124–153.
- Betcherman, G. (2019). Designing labor market regulations in developing countries. *IZA World of Labor*.
- Bossler, M., Oberfichtner, M., and Schnabel, C. (2020). Employment Adjustments Following Rises and Reductions in Minimum Wages: New Insights From a Survey Experiment. *LABOUR*, 34(3):323–346. _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/labr.12168>.
- Broecke, S., Forti, A., and Vandeweyer, M. (2017). The effect of minimum wages on employment in emerging economies: a survey and meta-analysis. *Oxford Development Studies*, 45(3):366–391. _eprint: <https://doi.org/10.1080/13600818.2017.1279134>.
- Dube, A. (2019). Impacts of minimum wages: review of the international evidence.
- Dube, A. and Lindner, A. (2024). Chapter 4 - Minimum wages in the 21st century. In Dustmann, C. and Lemieux, T., editors, *Handbook of Labor Economics*, volume 5, pages 261–383. Elsevier.
- Government of Ukraine (2025). Employment Strategy of Ukraine for the period up to 2030.
- Helvetas (2025). Labor Market Assessment 2024-2025: Business Demand, Challenges, Strategy for Impact.
- Honorati, M. (2026). Promoting Skills Development and Employment in Ukraine: A Review of Active Labor Market Programs (ALMPs) Effectiveness.
- Manning, A. (2021). The Elusive Employment Effect of the Minimum Wage. *Journal of Economic Perspectives*, 35(1):3–26.
- National Bank of Ukraine (2025). Business Outlook Survey 2025.
- Neumark, D. (2019). The Econometrics and Economics of the Employment Effects of Mini-mum Wages: Getting from Known Unknowns to Known Knowns. *German Economic Review*, 20(3):293–329. _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/geer.12184>.
- Robayo-Abril, M., Terskaya, A., and Brodmann, S. (2020). *Ex-Ante Evaluation of the Impact of Increases in Minimum Wages on Labor Market Outcomes in Kosovo*. World Bank, Washington, DC.

UNICEF (2024). Household socio-economic status survey.

U.S. Congressional Budget Office (2019). The Effects on Employment and Family Income of Increasing the Federal Minimum Wage.

World Bank (2026). On the road to recovery: Addressing Ukraine's transport labor shortages.

A Annex 1. Data issues

In preparing the database for our analysis, there were some issues that needed to be addressed.

- For some individuals, there were multiple jobs recorded in 2023. However, there were some cases where the number of jobs associated with a particular worker seemed unreasonable.¹⁷ In the most extreme case, there were 75 for one individual. We deal with this by limiting the sample to individuals with a maximum of five jobs.¹⁸
- For around 23 percent of jobs, reported monthly earnings are below the minimum wage (UAH 6,700 in 2023). This could be for various reasons which we cannot observe, including part-time work, part-month work, or reporting errors. Where monthly earnings are below the minimum wage, we manually reset earnings equal to the minimum wage when we analyze the impact of the minimum wage proposals.
- Earnings are missing for 4.26 percent of records, which have been excluded.
- A very small number of observations had negative earnings (0.02 percent of jobs). We take the absolute value of the earnings in these cases and, if the reported contribution rate is 22 percent (the statutory social insurance rate), we include the record with the absolute value of earnings. Otherwise, these cases are deleted (12 observations deleted).
- Some industry codes have non-numerical symbols, and a few codes do not match NACE classification. Around 4-5 percent of observations cannot be used for any analysis where the industry variable is required.
- There are 31 observations which are coded as missing because of negative age or very young age.
- There are missing values for a few variables. Extremely small numbers of records are missing date of birth and years of service, and these records would be excluded if these variables are part of a future analysis.

¹⁷For around 80 percent of individuals, there is one job record. For around 15 percent, there are two job records and for around 3 percent there are three job records. Four jobs or more for the same individual are only recorded for about 1 percent of the sample.

¹⁸Another way we deal with this is to include only the main job for each individual. This analysis will be reported in the next version of this note.

Annex Table A1: Estimated effect of the proposed minimum wages on the total wage bill in case of low elasticities, projected PFU 2025–2030.

	2025	2026	2027	2028	2029	2030
Total wage bill (trillion UAH)						
“No reform” scenario	2.02	2.25	2.49	2.74	2.99	3.24
“Reform” scenario (low elasticity, and wage spillovers)	2.03	2.27	2.52	2.80	3.07	3.34
Social contributions (22%) (trillion UAH)						
“No reform” scenario	0.44	0.49	0.54	0.60	0.65	0.70
“Reform” scenario (low elasticity, and wage spillovers)	0.44	0.49	0.55	0.61	0.67	0.73
Personal income (18%) and military taxes (5%) (trillion UAH)						
“No reform” scenario	0.47	0.52	0.57	0.63	0.69	0.74
“Reform” scenario (low elasticity, and wage spillovers)	0.47	0.52	0.58	0.64	0.71	0.77

Annex Table A2: Estimated effect of the proposed minimum wages on the total wage bill in case of high elasticities, projected PFU 2025–2030.

	2025	2026	2027	2028	2029	2030
Total wage bill (trillion UAH)						
“No reform” scenario	2.02	2.25	2.49	2.74	2.99	3.24
“Reform” scenario (high elasticity, and wage spillovers)	2.03	2.27	2.52	2.79	3.07	3.34
Social contributions (22%) (trillion UAH)						
“No reform” scenario	0.44	0.49	0.54	0.60	0.65	0.70
“Reform” scenario (high elasticity, and wage spillovers)	0.44	0.49	0.55	0.61	0.67	0.73
Personal income (18%) and military taxes (5%) (trillion UAH)						
“No reform” scenario	0.47	0.52	0.57	0.63	0.69	0.74
“Reform” scenario (high elasticity, and wage spillovers)	0.47	0.52	0.58	0.64	0.71	0.77

Annex Table A3: Estimated effect of the proposed minimum wages on the total wage bill by industry, projected PFU 2025.

	No reform scenario MW = 6,700 UAH billion UAH	Reform scenario MW = 8,089 UAH; 50% of average wage of previous Jan–June period; low elasticity and wage spillover assumptions; billion UAH	Percent change
A Agriculture	37.6	38.8	3.4%
B Mining and Quarrying	20.4	20.6	1.1%
C Manufacturing	112.5	115.7	2.9%
D Electricity	44.9	45.2	0.7%
E Water Supply	13.7	14.0	2.2%
F Construction	23.7	25.0	5.5%
G Wholesale and Retail Trade	133.9	141.2	5.5%
H Transportation and Storage	74.1	76.2	2.8%
I Accommodation and Food	8.9	9.8	10.6%
J Information and Communication	20.7	21.4	3.4%
K Financial and Insurance	34.7	35.2	1.3%
L Real Estate	12.8	13.6	6.0%
M Professional	42.6	43.8	2.8%
N Administrative	28.3	29.6	4.8%
O Public Administration	599.3	602.5	0.5%
P Education	78.2	80.6	3.1%
Q Human Health	99.3	101.9	2.6%
R Arts Sports	10.1	10.5	4.1%
S Other Service	8.9	9.4	5.4%
T Households as Employers	0.0	0.0	20.2%
U Extraterritorial Organisations	0.8	0.8	0.0%
Industry code missing	43.8	45.3	3.5%