Minimum Wage and Occupational Dynamics in Russia

Evidence from RLMS 1994-2024

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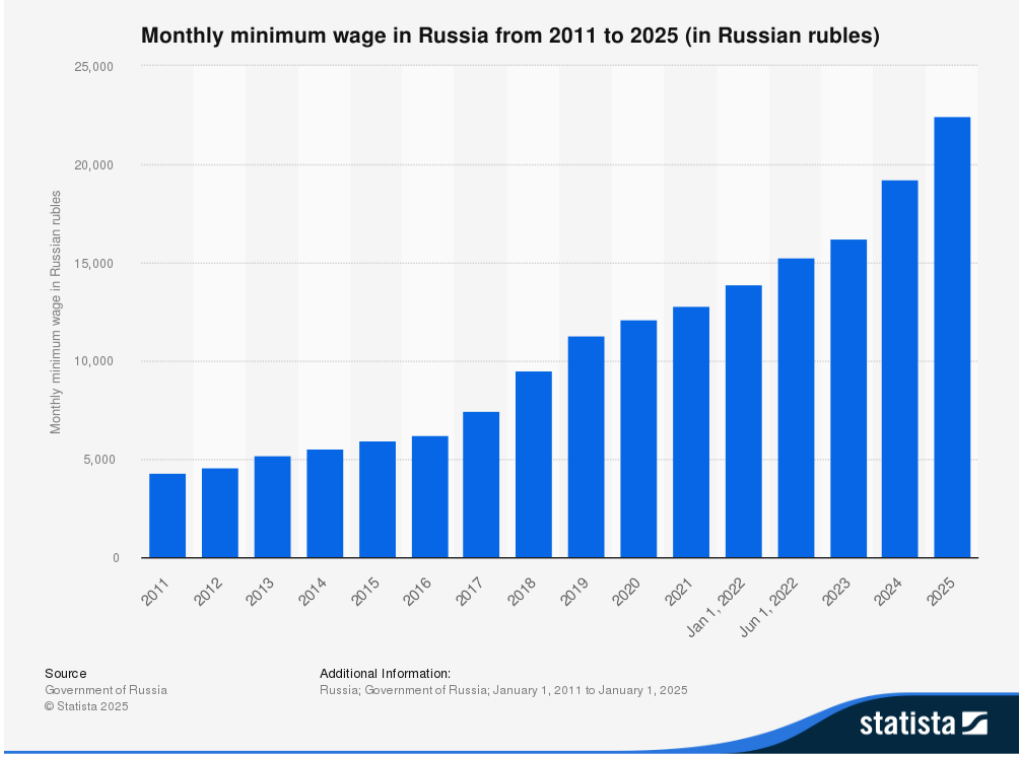
Introduction

What Is the Minimum Wage?

The minimum wage is a government-mandated wage floor designed to protect workers from excessively low pay.



In Russia, minimum wage serves as a key labor policy instrument aimed at:

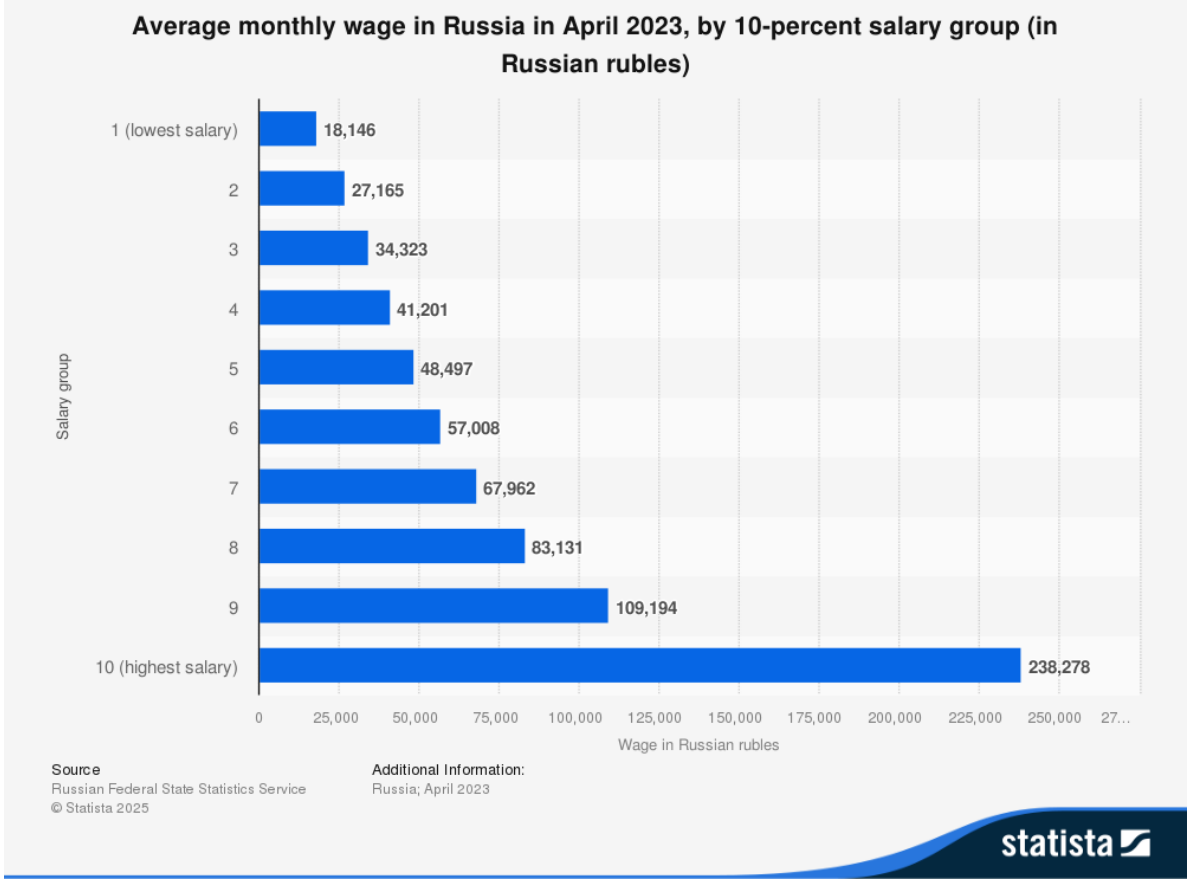
- Ensuring basic income security
- Preventing in-work poverty
- Shaping employment conditions across sectors and regions

Beyond social protection, minimum wage policy can influence:

- Employers' hiring and task allocation decisions
- Workers' occupational choices and sectoral mobility
- The distribution of employment across occupations

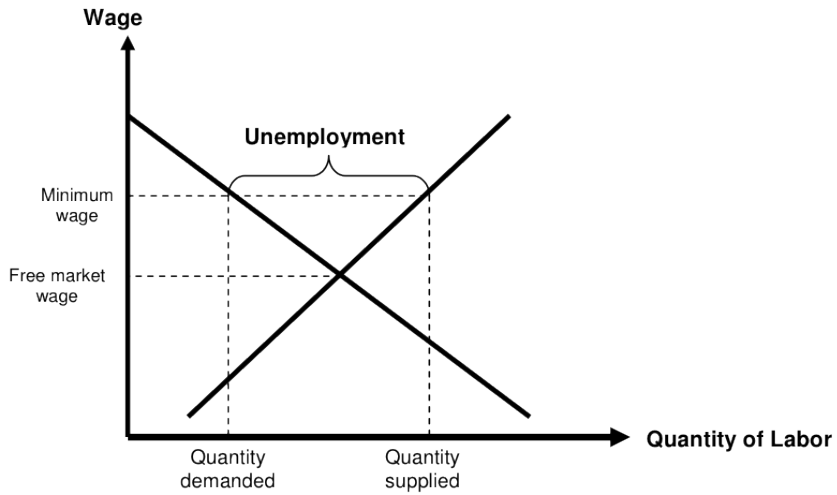
Average Monthly Wages by Salary Group

Distribution of Earnings in Russia



Minimum wage policy has long been debated in economic theory.

- Classical models predicted negative employment effects
- Since the 1990s, empirical research shows heterogeneous outcomes
- Recent studies emphasize institutions and market structure

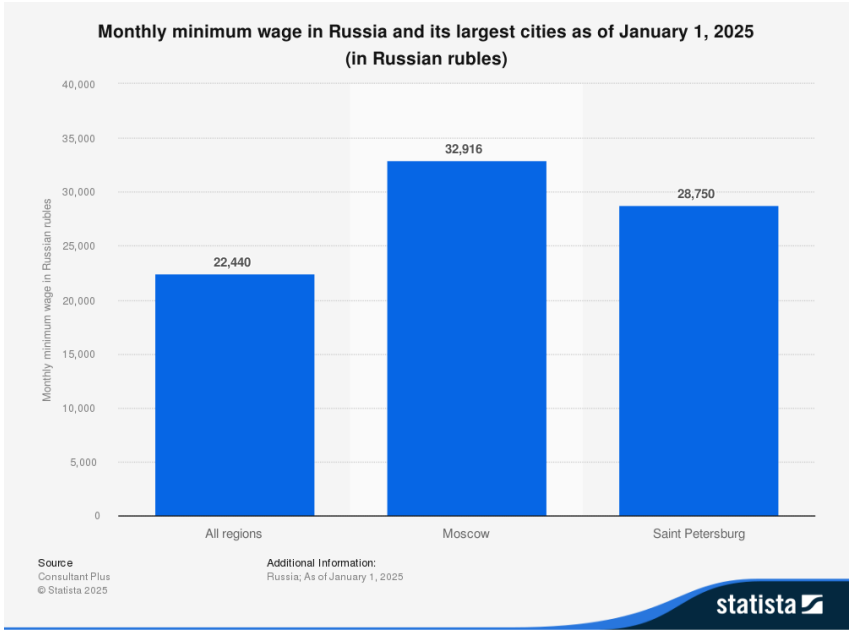


Classical Economics View of Minimum Wage

Background

Russian Institutional Context

- Minimum wages are implemented at the regional level



- Regions differ in economic structure and composition
- Formal and informal employment coexist
- Major reforms: 2005, 2007, 2009, 2016-2018

International Evidence:

- Card & Krueger (1994): Small employment effects in US
- Neumark & Wascher (2007): Negative effects in some contexts
- Autor et al. (2016): Task-based vulnerability to labor shocks

Russian Studies:

- Lukiyanova (2010): MW compressed wage inequality
- Gimpelson & Kapeliushnikov (2011): Weak labor institutions
- Regional MW studies limited to wage effects

Gap: No occupation-level analysis in Russian context

Research Gap and Contribution

Why This Study Matters

Research Gaps:

- Limited evidence on occupational-level effects
- Understudied regional heterogeneity
- Few studies connect MW with occupational mobility

Original Contribution:

- **Pioneers** occupation-level analysis of MW effects in Russia's transition economy
- **Leverages** regional natural experiment for causal identification
- **Integrates** task-based approaches with institutional analysis
- **Delivers** policy-relevant evidence for targeted regional interventions

Research Questions

Primary Focus

Main Question:
How do minimum wage changes affect occupational mobility and structure across Russian regions?

Specific Questions:

1. Which occupations are most exposed to minimum wage increases?
2. Do minimum wage changes induce occupational transitions across sectors and employment forms?
3. How do occupational adjustment responses differ across regions?

Working Hypotheses

Proposed Testable Predictions

Note: These hypotheses are considered preliminary and may be refined during the analysis.

H1: Occupational Exposure

- Low-skill and routine service occupations exhibit the highest exposure to minimum wage increases.
- Exposure intensity varies across regions.

H2: Occupational Adjustment

- Minimum wage increases raise occupational transition rates among exposed workers.
- Transitions occur primarily within similar skill-level occupations.

H4: Informal Sector Response

- Informal employment rises in high-MW regions for occupations heavily exposed to the minimum wage.

H3: Regional Heterogeneity

- High minimum-wage regions experience greater occupational displacement among exposed workers.
- Border regions exhibit higher cross-regional labor reallocation following minimum wage changes.

H5: Sectoral Spillovers

- Minimum wage increases in one sector may affect wages and employment in adjacent sectors.
- Spillover magnitude depends on occupational similarity and regional labor market tightness.

Hypotheses and Methodology Mapping

How Each Hypothesis Will Be Tested

This mapping guides the empirical approach for each working hypothesis.

Hypothesis	**Methodology / Approach**
H1: Occupational Exposure	Stage 1: Descriptive Mapping of MW concentration by occupation and region. Identify which occupations have the highest share of workers near the MW.
H2: Occupational Adjustment	Stage 2: Difference-in-Differences (DiD) analysis with leads/lags of MW exposure. Track occupational transitions over time across treated and control regions.
H3: Regional Heterogeneity	Stage 2 DiD with subsample analysis (high vs low MW regions, urban vs rural) and Stage 3 Border Analysis to capture cross-regional reallocation.
H4: Informal Sector Response	Stage 2 DiD with subsample analysis of formal vs informal workers. Compare changes in informal employment among exposed occupations.
H5: Sectoral Spillovers	Stage 2 and Stage 3 event-study regressions with continuous treatment to detect wage/employment effects in adjacent sectors. Include occupation fixed effects for spillover detection.

Data Source

Russian Longitudinal Monitoring Survey (RLMS)

- Household panel: 1994-2024 (30 years)
- 171,965 household-year observations
- Nationally representative with regional identifiers
- Occupational codes (3-digit OKZ)

Sample Selection:

- Working-age population (18-65)
- Wage and salary workers
- Complete occupation information

Limitations:

- Underrepresents informal sector
- Occupational codes changed over time
- Wage reporting may have measurement error

Key Variables

RLMS Data Structure

Variable	RLMS Code
Monthly wage	C4
Alternative wage measure	G1_1
Occupation	C7_1
Employment status	C1
Sector	C2
Firm type	C3
Formal status	C8
Hours worked	C5
Region	REGION

- Additional controls: Age, gender, education
- Regional economic indicators
- Time dummies for economic cycles
- **Note:** In formulas, w = C4 (Monthly wage)

Empirical Strategy

Three-Stage Approach

Stage 1: Descriptive Mapping

$$\text{MW Concentration}_{ort} = \frac{Emp_{ort,w \leq MW}}{Emp_{rt,w \leq MW}}, \quad w = \text{C4}$$

Identify occupations most exposed to minimum wage increases.

Stage 2: Difference-in-Differences (DiD)

$$Y_{irt} = \beta_0 + \beta_1(\text{Post}_t \times \text{HighMW}_r) + \gamma_r + \delta_t + X_{irt}\theta + \epsilon_{irt}$$

- **Assumptions:** parallel trends across regions, no spillovers beyond treatment
- Regional (γ_r) and year (δ_t) fixed effects
- Controls: age, gender, education, sector (C2), firm type (C3), formal status (C8)
- Dynamic effects: include leads/lags of MW exposure
- Subsample analysis: formal vs informal, urban vs rural regions, high vs low MW regions

Stage 3: Border Analysis

$$Y_i = \alpha + \beta \cdot \mathbf{1}\{\text{MW}_r > \text{MW}_{r'}\} + \epsilon_i$$

- Exploit differences across adjacent regions to approximate quasi-experimental variation
- Capture cross-regional occupational reallocation
- Assumption: neighboring regions are comparable except for MW differences

Methodology

Identification and Robustness

Identification Strategy:

- Regional MW differences post-2007
- Federal MW temporal changes
- Interaction of region and time effects
- Explicitly account for heterogeneity: occupation-level, sector-level, urban/rural

Statistical Approach:

- Regional and year fixed effects
- Clustered standard errors at region-occupation level
- Dynamic event study for temporal adjustment patterns
- Pre-trend checks for DiD validity

Robustness Checks:

- Alternative wage measures (C4 vs G1_1)
- Different MW bite thresholds: 25%, 30%, 35%
- Placebo tests: false reform dates
- Occupation fixed effects to control for systematic differences
- Continuous treatment: MW relative to regional median wage
- Subsample checks: formal vs informal sector, urban vs rural regions, high vs low MW regions
- Link robustness to key assumptions (parallel trends, comparability of regions)

Expected Findings

Preliminary Expectations

Based on literature and descriptive patterns:

- 5-8% of workers directly affected by MW (higher in low-wage regions)
- Routine occupations (retail, cleaning) most concentrated at MW
- Public sector shows larger spillover effects due to wage grids
- Border regions show occupational mobility toward lower-MW areas
- Informal employment increases in high-MW regions for affected occupations

Policy implication: Targeted MW adjustments needed by occupation/region

Expected Contributions

Academic Value

- First comprehensive occupation-level analysis for Russia
- Novel evidence on regional heterogeneity in transition economies
- Methodological: Integrating occupational mobility with MW analysis
- Advances understanding of institutional mediation in labor markets

Policy Relevance:

- Evidence for targeted social protection to vulnerable occupations
- Guidelines for optimal regional differentiation of MW policies
- Sector-specific enforcement strategies for labor inspectorates

Research Timeline

5-Month Schedule

Month 1: Preparation

- Literature review completion
- RLMS data cleaning & preparation

Month 2: Descriptive Analysis

- Occupational incidence mapping
- Regional heterogeneity patterns

Month 3: Causal Analysis

- Difference-in-Differences estimation
- Border discontinuity design

Month 4: Writing & Extensions

- Thesis drafting
- Heterogeneity analysis

Month 5: Completion

- Final revisions
- Presentation preparation
- Defense

Conclusion

This study provides first analysis of MW effects on occupational dynamics in Russia.

Key Innovations:

- Occupational-level analysis rather than aggregate effects
- Regional natural experiment (post-2007 differentiation)
- Long-term dynamics (1994-2024)
- Multiple adjustment mechanisms
- Policy-relevant regional focus

Significance: Provides evidence for optimizing Russia's regional MW policy while advancing understanding of occupational adjustment mechanisms in transition economies.

Thank You

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