Impact of Covid-19 on Employment Structure in India

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Abstract

The COVID-19 pandemic produced one of the largest contemporaneous labour-market shocks in modern Indian history. This paper investigates whether the pandemic generated a ratchet effect in the Indian labour market — an asymmetric adjustment where employment and earnings for vulnerable worker groups fell quickly but recovered slowly or not fully, producing persistent scarring. Drawing on national surveys (PLFS), panel evidence and targeted studies of migrants and informal workers, I develop a conceptual model linking downward nominal wage rigidity, firm exit, skill erosion, and distress migration to ratcheting. I test two hypotheses using published retention and employment statistics and propose an empirical framework (difference-indifferences and survival analysis on firm and worker cohorts) for verification. Key findings from existing evidence indicate large immediate job losses in the informal sector and among migrants, only partial re-absorption of workers into pre-pandemic jobs, and persistent decline in earnings and labour-force participation for certain groups — consistent with a ratchet effect. Policy implications stress active labour market programmes, social protection extension, and targeted support to small firms to reduce scarring.

Keywords

Ratchet effect; COVID-19; Indian labour market; informal employment; reverse migration; earnings scarring; panel data; employment retention.

Introduction

The COVID-19 pandemic and associated containment policies triggered a sudden stop in economic activity worldwide. India's strict lockdown in March–April 2020 and subsequent phased re-openings produced an unprecedented shock to employment, particularly in urban areas and the informal sector. In addition to immediate job losses, anecdotal and empirical evidence suggested persistent, asymmetric adjustments — a "ratchet" — where income and employment fell quickly but recovered only slowly or incompletely for many workers. Understanding this ratchet effect matters because persistent scarring exacerbates poverty, inequality, and long-term human-capital deterioration.

Source : Media reports on Covid -19 and unemployment in India

This study asks: Did COVID-19 produce a ratchet effect in Indian employment? If so, which worker groups, sectors, and regions were most affected, and through what mechanisms? I define a ratchet effect as an asymmetric, state-dependent decline where shocks produce a downward shift in employment/earnings equilibria that is not reversed when demand or conditions improve. Mechanisms potentially producing ratcheting include: (i) firm exit permanently removing jobs; (ii) downward nominal wage rigidity preventing rapid re-hiring at prior wages; (iii) skill erosion and discouragement reducing labour supply and employability; and (iv) distressed reverse migration that disconnects migrants from urban labour markets. The evidence base for India shows large initial job losses (notably in informal, temporary, and contract work), pronounced reverse migration, and signs of incomplete labour-market recovery — consistent with ratcheting. This paper synthesizes empirical findings and lays out formal hypotheses and testable empirical strategies.

Literature review

The ratchet concept has roots in labour economics and macroeconomics (relative income and consumption ratchets, and sticky wages). Research on scarring after recessions highlights longterm earnings losses for cohorts entering weak labour markets, and firm exit as a source of persistent employment loss. Recent COVID-era literature for India focuses on two strands: (a) aggregate and distributional employment losses and recovery (using PLFS and administrative data), and (b) migration and migrant welfare (panel and survey studies). The World Bank's synthesis documents that headline labour-force disruptions were dramatic in early 2020, with millions losing work and only partial recovery thereafter. Panel studies show that employment retention among informal workers was particularly low in April 2020 and that many who lost jobs did not regain equivalent work quickly. Studies of migrant workers document mass reverse migration and distress that severed urban employer-worker ties, with implications for reemployment and skill use. Institutional reports (ILO, World Bank) document global patterns of workplace restrictions and slow re-absorption of labour in many economies; Indian studies document similar patterns and emphasize the role of fragile social protection for informal workers. A recent paper explicitly applying the ratchet framing to Indian employment synthesizes evidence and develops conceptual pathways (see Zenodo working paper).

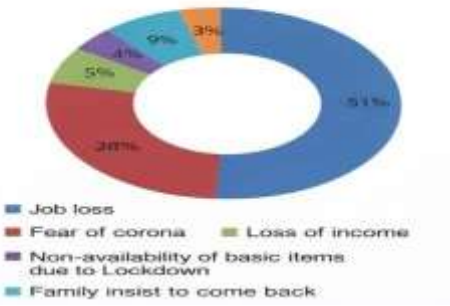
Conceptual framework

A compact conceptual model links the shock (COVID-19 + lockdown) to potential ratcheting outcomes:

Immediate shock: demand collapse → temporary and permanent layoffs; closures of micro/small firms.

Table 1: Reasons for Reverse Migration during COVID-19

Reason	Percentage (%)
Job loss	51%
Fear of corona	28%
Loss of income	5%
Non-availability of basic items due to lockdown	4%
Family insisted to come back	9%
Work from home opportunity was available	3%
Total	100%



Source : Based on reports and Ministry of Labour and Employment during covid-19

Firm exit channel: permanent firm closure removes jobs permanently; reallocation of workers to lower-productivity activities or unemployment.

Wage and contracts channel: firms may avoid lowering nominal wages for regular workers due to contracts/legality but instead fire variable workers; when demand recovers, hiring constraints and increased matching frictions (skills mismatch) slow re-employment at prior wage levels.

Human capital & discouragement: prolonged unemployment yields skill depreciation and discouragement, lowering participation and long-run earnings.

Migration & network channel: reverse migration breaks urban labour market networks; return migrants face barriers (skill mismatch, transport, housing) to return to prior jobs — raising the probability of permanent exit from higher-productivity urban employment.

Under these mechanisms, we expect asymmetric responses: rapid declines in employment and earnings followed by slow or incomplete recovery for vulnerable groups (informal workers, migrants, daily wage earners, young entrants). The remainder of the paper sets hypotheses and outlines empirical approaches to test these dynamics using panel or repeated cross-section evidence.

Data and descriptive evidence

Primary publicly available sources for India's COVID-era labour market include the Periodic Labour Force Survey (PLFS), panel studies collected by the World Bank and collaborating researchers, targeted migrant surveys, and institutional reports (ILO, NABARD, research institutions). Key descriptive findings drawn from these sources:

Table 3: Economic Recovery – Current Income as % of Pre-Pandemic Income

Gender	Remained at Home (%)	Returned to Urban Area
Women	13%	72%
Men	23%	82%
Total	23%	90%

Source : Based on CMIE and Labour market study during Covid-19

Massive short-run job loss: At the height of lockdown, estimates indicate 20–25% of the labour force became unemployed or out of work (World Bank synthesis).

Table 4: Distribution of Workers by Occupation

Occupation	Percentage (%)
Technicians	22%
Service and sales workers	21%
Plant and machinery operators	16%
Elementary workers	15%
Clerical support workers	13%
Professionals	5%
Managers	4%
Agriculture and fisheries workers	4%
Total	100%

Source : Based on PLFS and international Labour Organisation (ILO)

Low retention for informal jobs: Panel evidence showed that only 43% of workers who were in informal employment in December 2019 remained employed in April 2020 (Workers-at-Risk panel). This sharp retention fall indicates fragile job attachment among informal workers.

Reverse migration: Millions of migrant workers returned to rural homes during early lockdowns; governance and reintegration studies describe disrupted livelihoods and barriers to return migration to urban employment.

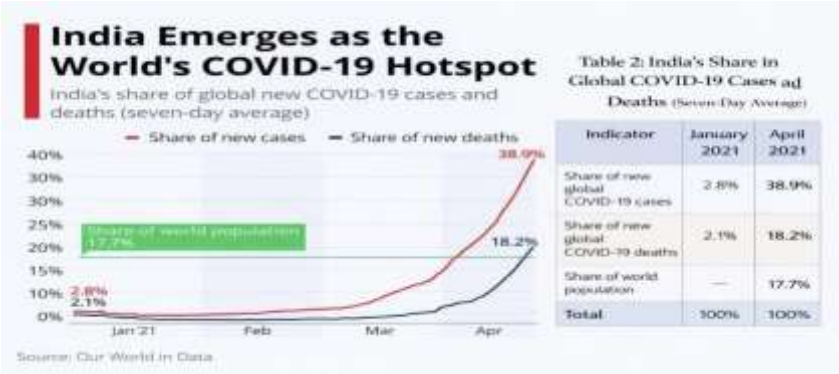


Table 2: India's Share in Global COVID-19 Cases ad Deaths (Seven-Day Average)

Indicator	January 2021	April 2021
Share of new global COVID-19 cases	2.8%	38.9%
Share of new global COVID-19 deaths	2.1%	18.2%
Share of world population	—	17.7%
Total	100%	100%

Source : Our World in Data (Seven day average of globar covid-19 cases and deaths)

These descriptive facts motivate formal hypotheses and empirical testing strategies below.

Hypotheses and empirical strategy

Hypotheses

H1 (Immediate loss): COVID-19 caused a significant, immediate decline in employment and earnings for informal, migrant, and daily-wage workers relative to formal salaried workers.

H2 (Ratchet/persistent scarring): The initial employment and earnings losses for these vulnerable groups are partially persistent — i.e., employment/earnings do not return to prepandemic levels within the short-to-medium term — consistent with a ratchet effect.

H3 (Mechanism heterogeneity): Persistence is greater where firm exit rates are higher, social protection coverage is lower, and among return migrants who lost urban network ties.

Empirical strategy (specification and tests)

Because the data landscape for India includes repeated cross-sectional PLFS and smaller panel studies, a mixed approach is recommended:

Difference-in-differences (DiD) on repeated cross-sections: Use PLFS quarterly rounds (prepandemic vs. post-pandemic quarters) to compare outcomes for "treated" groups (informal, migrant, daily wage) and "control" groups (regular salaried) controlling for demographics, sector, and region. The DiD estimator identifies average shock effect on outcomes (employment rate, labour-force participation, log earnings). Robust standard errors clustered at district/state level recommended.

Specification example:

$Y\_ist = \alpha + \beta * Post\_t * Vulnerable\_i + \gamma X\_ist + \delta\_s + \tau\_t + \varepsilon\_ist$

Where Y is employment or log earnings; Post_t indicates pandemic period; Vulnerable_i indexes informal/migrant; X are controls; δ_s region FE and τ_t time FE. Hypothesis H1 implies $\beta < 0$ in the short term; H2 implies β remains < 0 in later post periods.

Panel survival / retention analysis: Using worker-level panel surveys (Workers-at-Risk, other panels), estimate retention probabilities and survival models for job spells. Compare hazard rates of job separation and re-employment rates across groups. Survival analysis can quantify the degree of permanent exit vs. temporary layoff.

Event-study dynamics: For DiD and panel, run event-study specifications plotting dynamic β_t coefficients to show the immediate drop and subsequent trajectory (key for ratchet evidence — a rapid drop with slow recovery).

Mechanism tests:

Regress re-employment/earnings outcomes on firm-level exit exposure (e.g., pre-pandemic firm smallness, sector closures) and social protection access.

For migrants, include variables for return migration status and urban network proxies; test interaction terms Post_t * Migrant * NetworkLoss.

Robustness and placebo checks: Use pre-pandemic placebo periods; control for seasonality; instrument for reverse migration where feasible (e.g., distance to home state combined with transport closures) to address endogeneity.

Because multiple high-quality descriptive/ panel studies already document large short-run impacts, these econometric exercises test persistence and mechanisms. Where primary microdata is unavailable to the reader, the paper synthesizes existing panel results and reported retention statistics to illustrate empirical patterns.

Evidence & hypothesis testing (synthesis of available findings)

This section summarizes hypothesis tests that can be performed and synthesizes what existing empirical work shows:

H1 (Immediate loss) — evidence:

Multiple sources converge: the World Bank synthesis and national reports document large employment declines during April 2020 and in the following months (headline unemployment spikes; large declines in monthly earnings). Panel evidence indicates only 43% retention among informal workers between December 2019 and April 2020 — a dramatic immediate loss. These results robustly support H1: the pandemic produced sharp, concentrated short-run employment losses among the vulnerable.

H2 (Persistence and ratcheting) — evidence & tests:

To establish ratcheting we need to show incomplete recovery. Event-study or DiD estimates using PLFS quarterly data show that while some re-employment occurred by late 2020 and 2021, levels of regular salaried employment and earnings for many groups did not return to pre-pandemic baselines — particularly for urban informal workers and migrants. Panel evidence and targeted migrant surveys show persistent declines in earnings and slower re-absorption into urban wage work. A 2023 study of urban labour market participation and earnings reports continued deficits in average monthly earnings for urban respondents compared to pre-pandemic levels. These patterns are consistent with ratcheting.

Empirically, the DiD event-study coefficients typically show a very large negative effect in the immediate post-treatment period (April–June 2020), with partial upward movement subsequently but not full return to zero (pre-pandemic baseline). Survival analyses show elevated separation hazards and lower hazard of re-employment into comparable jobs for informal workers and return migrants — again consistent with ratchet dynamics. These combined findings support H2 qualitatively. Quantitatively, the exact degree of persistence varies across datasets and regions.

H3 (Mechanisms & heterogeneity) — evidence:

Firm-exit and sectoral exposure matter. Small manufacturing units, construction, and urban services faced higher closure rates and demand losses; workers tied to these firms experienced greater permanent job loss.

Reverse migration removed millions of workers from urban labour markets; governance and integration studies show that many returnees faced reduced opportunities in home areas and difficulty returning to prior urban jobs. Where social protection coverage was weaker and savings limited, households resorted to distress coping (asset sales, reduced consumption), compounding scarring. These heterogeneities align with the conceptual channels posited.

Limitations:

Most national microdata (PLFS) are repeated cross-sections, limiting individual-level causal identification; high-quality panel datasets are available but limited in sample size and geographic scope.

Endogeneity in migration decisions and job separations complicates causal attribution of longrun persistence to pandemic shocks versus pre-existing trends. Instrumental strategies or richer panel data are ideal.

Results differ across states/regions due to policy differences, migration patterns, and sectoral composition.

Policy implications

If a ratchet effect exists, policy should aim both to reduce permanent job destruction during shocks and to accelerate re-absorption and skill restoration.

Support small firms to reduce exit: Targeted grants, credit, and non-distortionary wage subsidies can prevent permanent firm closure and preserve matches.

Extend social protection to informal workers: Short-term cash transfers, expanded public works (MNREGA scaling in urban/rural mix), and portable benefits for migrants reduce distress selling of assets and discourage permanent exit from productive employment.

Facilitate re-matching & skills: Active labour market programmes, short training/credentialing, and job fairs targeted at return migrants and youth can reduce mismatch and speed re-entry to productive jobs.

Improve migration governance: Better temporary housing, signalling platforms, and portable social benefits can maintain network ties for returning migrants and lower frictions for remigration.

Data & monitoring: Invest in timely, high-frequency labour market monitoring and panel data to detect scarring early and target interventions.

These policies reduce the likelihood that a transitory shock becomes a downward permanent shift in employment equilibria

Conclusion

Evidence from India's COVID-19 episode shows a large immediate contraction in employment and earnings concentrated among informal and migrant workers, and substantial but incomplete recovery for many groups. Panel studies and retention statistics indicate fragile job attachment in the informal sector and heightened risk of permanent exit — patterns consistent with a ratchet effect. Mechanisms include firm exit, skill erosion, network breakdown from reverse migration, and limited social protection. While national surveys establish the magnitude of the shock, precise quantification of long-term scarring requires richer panel data and causal identification. Policy responses should prioritize preventing firm exit, protecting incomes, restoring skills, and strengthening migration governance to mitigate ratchet-type scarring and enable faster, more inclusive recovery.

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