The labour market impact of COVID-19 lockdowns: Evidence from Ghana

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Motivation

The COVID-19 pandemic has posed important risks not only for people's health but also economic wellbeing. Workplace closures and restrictions on movements have affected the livelihoods of workers in Ghana.

- How have the COVID-19 pandemic and related government response measures affected workers in Ghana?

- To what extent have workers been affected differently, depending on…

    … the type of government response measures in place?

    … the type of activities that they engage in?

Background: Partial lockdown in Ghana

COVID-19 cases and government response stringency index
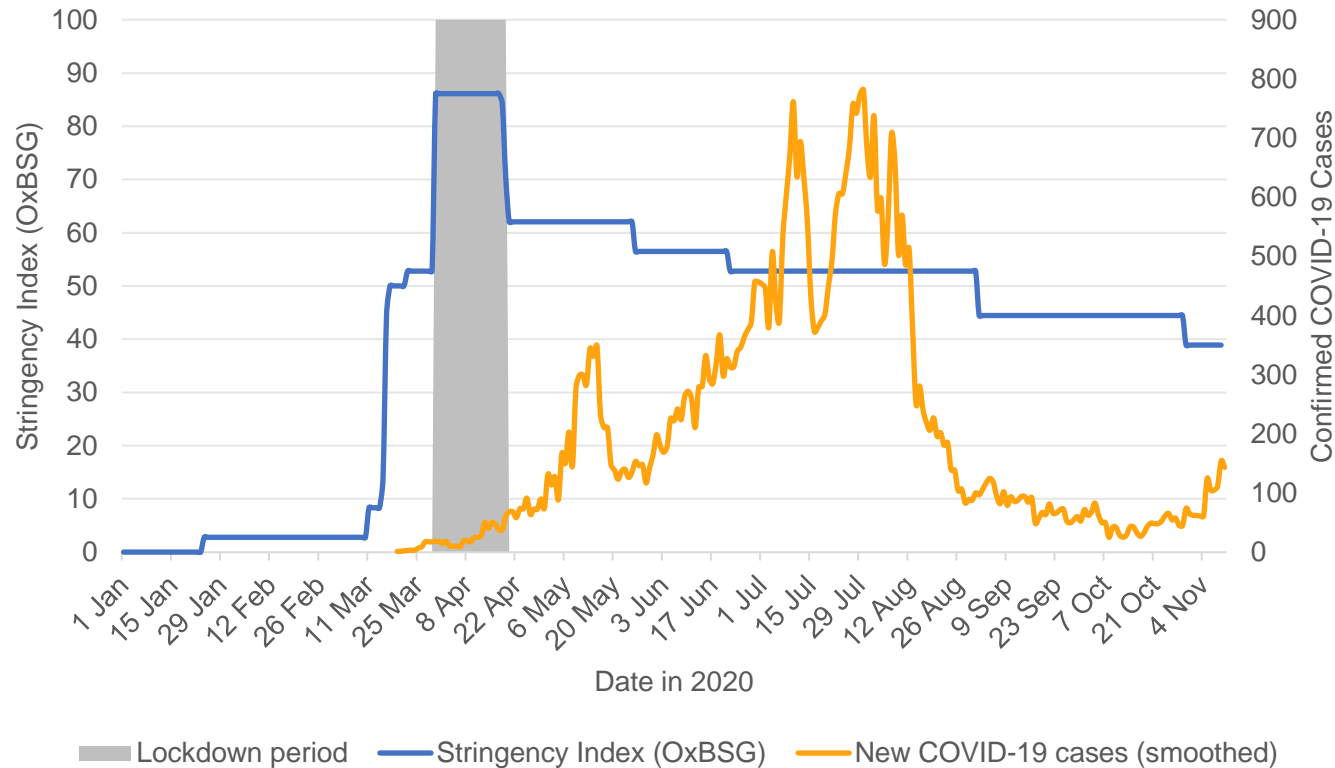
Note: Based on Hale et al. (2020) and Roser et al. (2020).

The first two cases of COVID-19 were reported in Ghana on 12 March 2020.

As a first response, on 15th March, all public gatherings were banned, and all schools and universities were closed. On 23rd March, all borders were closed.

On 30th March, restrictions on movement of persons were implemented in the **Greater Accra** and **Greater Kumasi** Metropolitan Areas and **contiguous districts**, identified by the Ghana Health Service as **'hotspots.'** This was lifted after **three weeks** on 20th April, while the other measures remained in force.

Data

- Ghana: Socioeconomic Panel Survey – COVID-19 Rapid Survey

    – Joint effort between UNU-WIDER and the Institute of Statistical, Social and Economic Research (ISSER), at the University of Ghana, Legon.

    – Three previous waves of panel data (2009/10, 2013/14, 2018/19).

    – Conducted phone surveys between 19 August and 17 September 2020 with ca. 670 respondents who were working in last panel wave.

    – Retrospective questions regarding the situation in February and April 2020.

- Identify the effect of strict lockdown policies by comparing the labour market outcomes in areas with different policy responses.

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Methodology

Difference-in-differences (DID) design: Comparison between changes in these labour market outcomes among respondents located in **lockdown districts**, considered **'treated'**, and respondents located in **no-lockdown districts**, considered **'control'**.

Analyze changes in labour market outcomes between three points in time:

1) **February 2020**, base period before COVID-19 pandemic had reached Ghana
2) **April 2020**, when parts of Ghana were under lockdown $\rightarrow POST_{1t}$
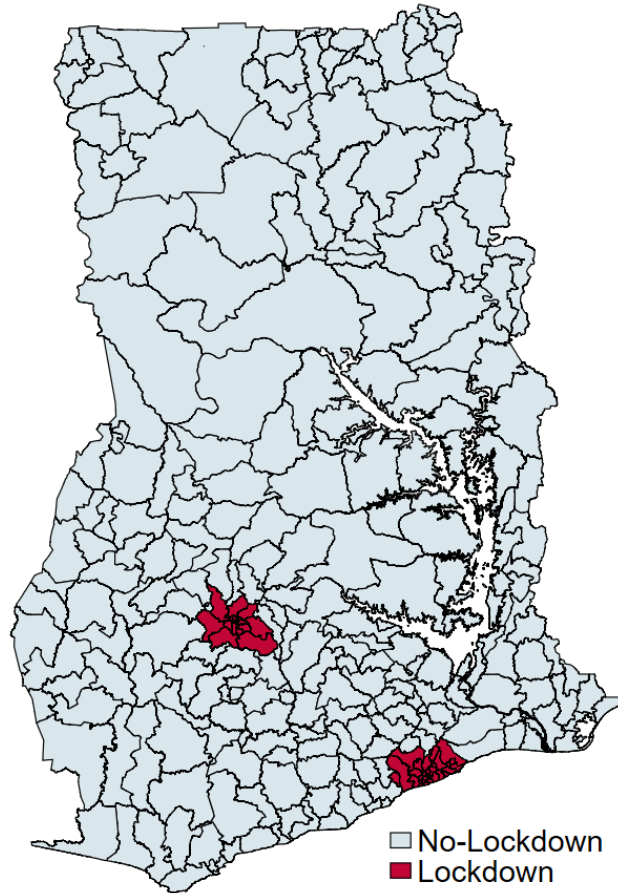3) **Aug/Sept 2020**, when the most stringent policy measures had been relaxed $\rightarrow POST_{2t}$

We write the DID regression model as:

$$Y_{idt} = \beta_0 + \beta_1 LOCKDOWN_d + \beta_2(LOCKDOWN_d \times POST_{1t}) + \beta_3(LOCKDOWN_d \times POST_{2t}) + \beta_4 X_i + \theta_t + \varepsilon_{idt}$$
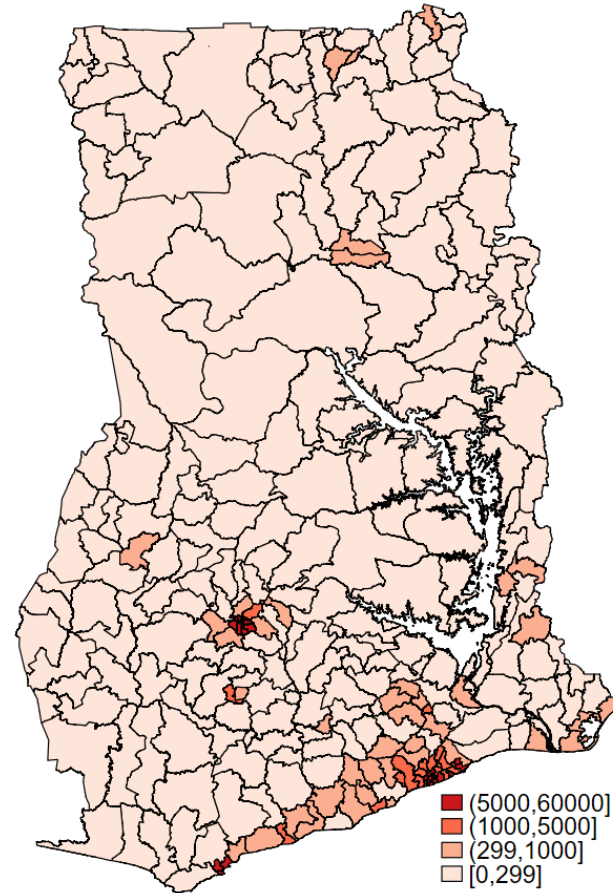
We also estimate a second model that controls for worker-fixed effects, μ_i:

$$Y_{idt} = \delta_0 + \delta_1(LOCKDOWN_d \times POST_{1t}) + \delta_2(LOCKDOWN_d \times POST_{2t}) + \mu_i + \theta_t + \varepsilon_{idt}$$
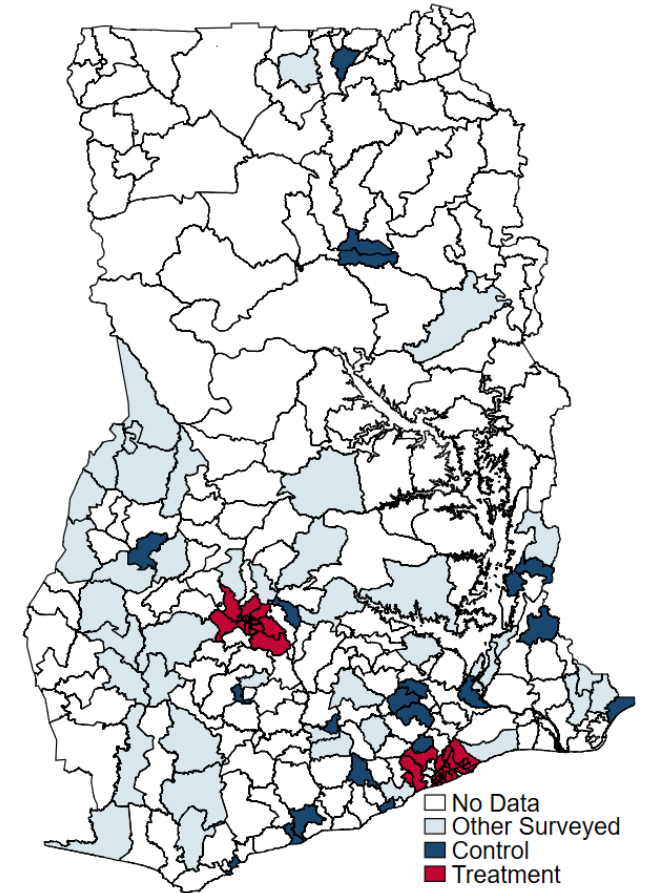
Study areas: Lockdown versus no-lockdown

Greater Accra and **Greater Kumasi** Metropolitan Areas and **contiguous districts** were under lockdown.

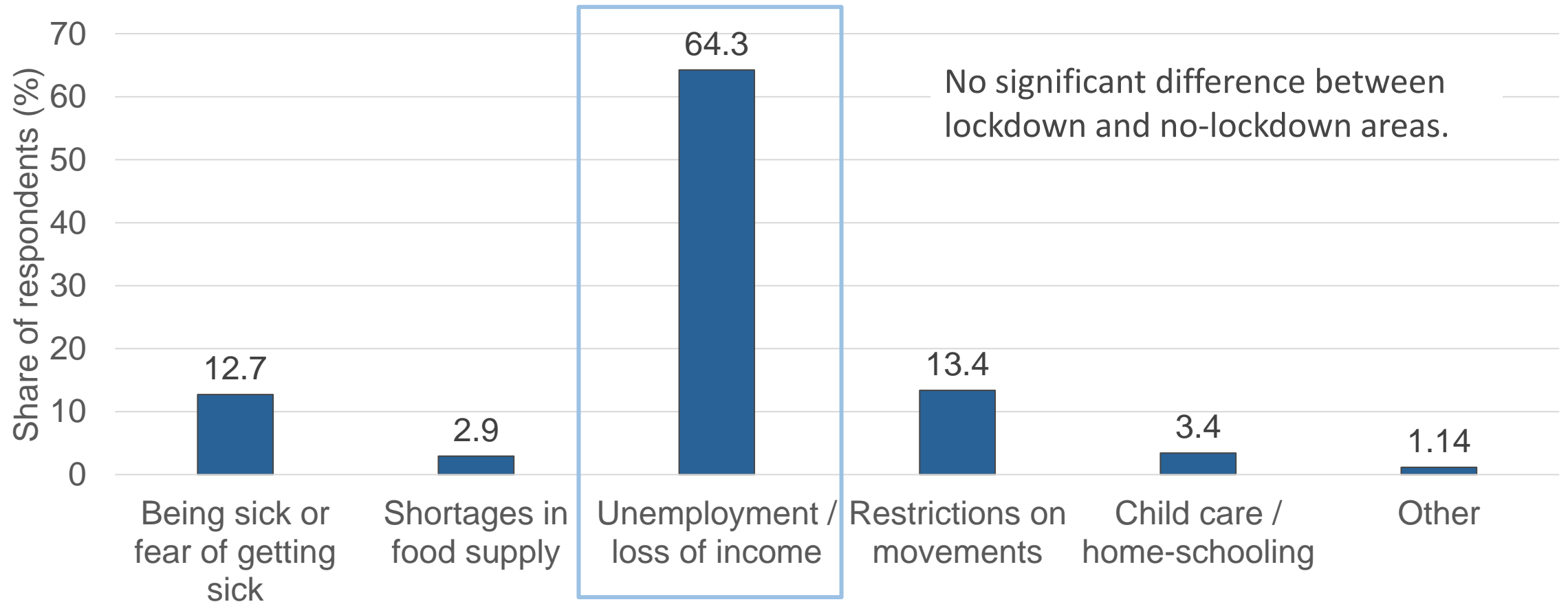**Population density** across districts (population per km²)

Control districts limited to those with population density above 300/km².

T-tests: Lockdown versus no-lockdown

Covariates	(1) Lockdown	(2) No-Lockdown	(3) No-Lockdown size cut-off	(1)-(3) Difference	P-value Ha: diff != 0
Female	0.453 (0.030)	0.504 (0.026)	0.491 (0.038)	-0.038 (0.048)	0.4282
Head of household	0.833 (0.022)	0.813 (0.020)	0.838 (0.028)	-0.005 (0.036)	0.8938
Household size	2.609 (0.094)	3.434 (0.105)	3.428 (0.158)	-0.819*** (0.172)	0.0000
Moved since last interview	0.087 (0.017)	0.122 (0.017)	0.139 (0.026)	-0.052* (0.030)	0.0844
Working in Feb 2020	0.935 (0.015)	0.919 (0.014)	0.925 (0.020)	0.010 (0.025)	0.6872
Formal work (Feb 2020)	0.244 (0.027)	0.279 (0.024)	0.267 (0.035)	-0.023 (0.044)	0.6010
Wage work (Feb 2020)	0.422 (0.031)	0.341 (0.025)	0.385 (0.038)	0.037 (0.049)	0.4500

Which aspect of the COVID-19 pandemic has the greatest impact on you personally?

No significant difference between lockdown and no-lockdown areas.

# Strong fall in employment in lockdown areas

Employed in April 2020
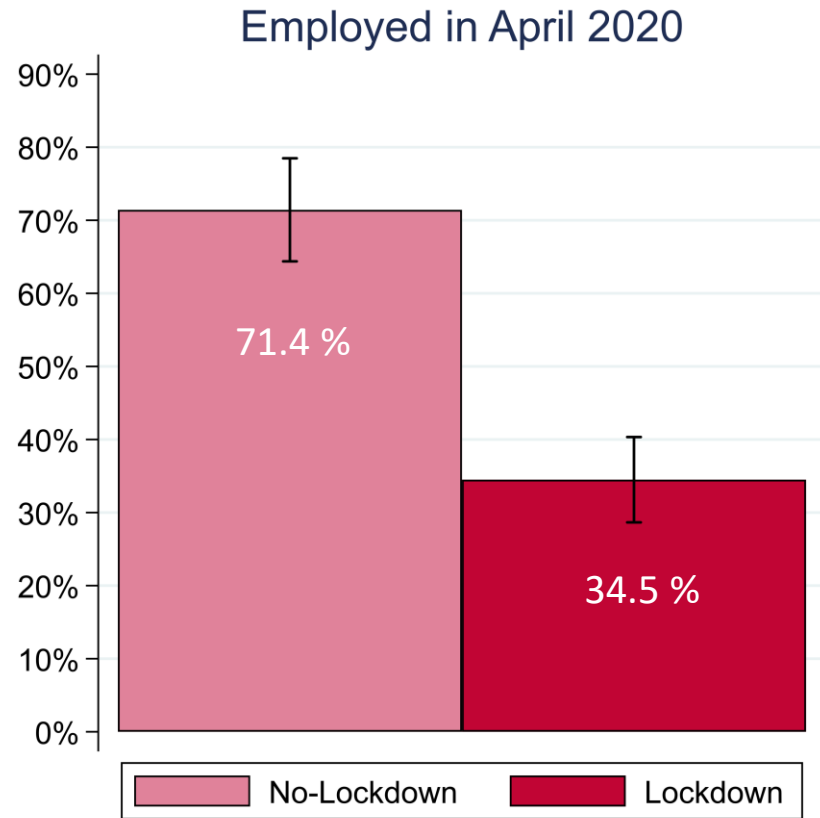
Note: Sample limited to respondents who had been working February 2020. No-Lockdown districts limited to those with population density above 300/km².

- Sizeable and statistically significant treatment effect on employment probability in April 2020.
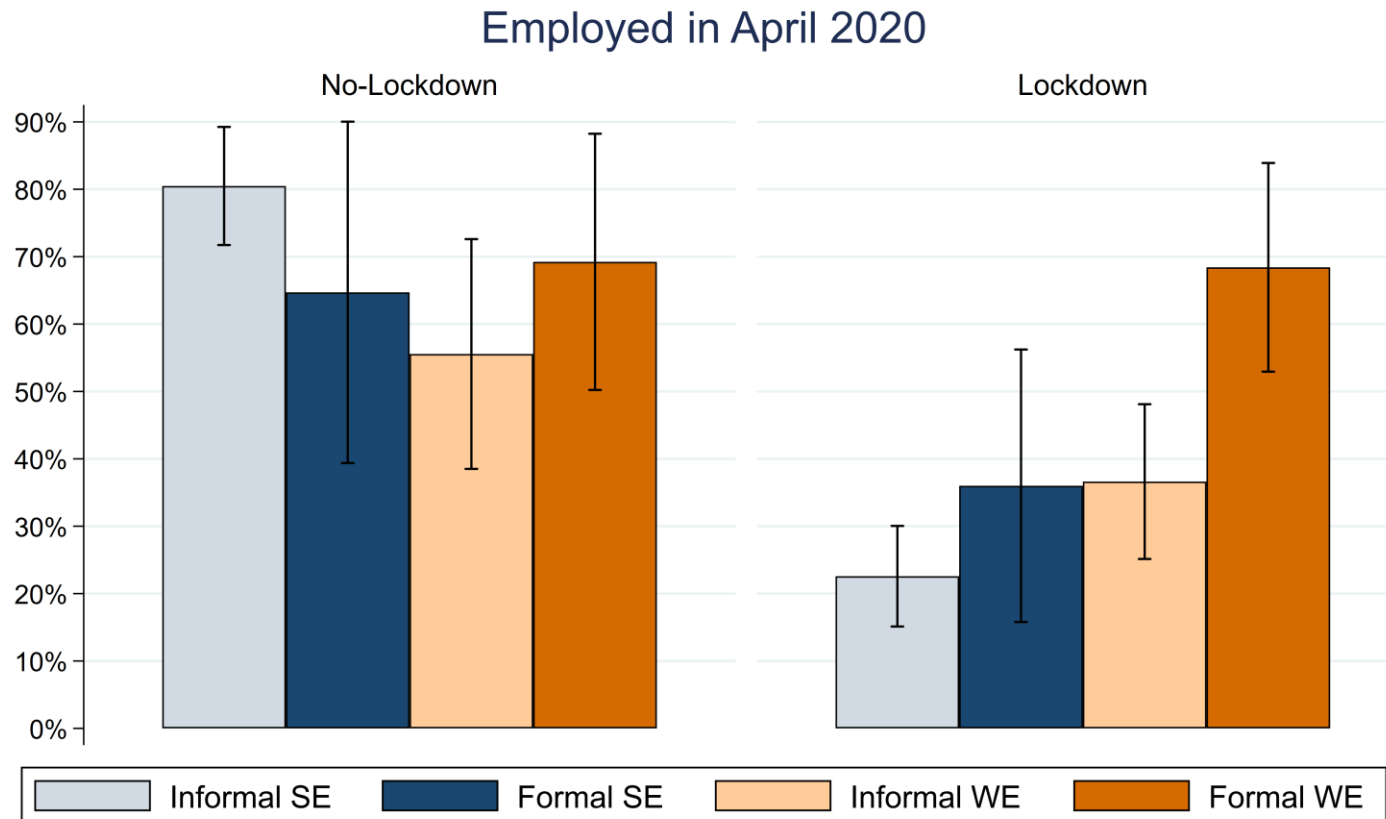- Workers in lockdown areas were more than twice as likely to stop working in April.

Dependent variable: Working in period *t* (=1 if YES)	(1) Full sample	(2) District size cut-off	(3) District size cut-off with covariates	(4) District size cut-off with worker FE
Post-period (base Feb 2020)				
April 2020	-0.253***	-0.212***	-0.216***	-0.283**
	(0.034)	(0.046)	(0.046)	(0.047)
Lockdown	0.015	0.010	0.017	
	(0.029)	(0.033)	(0.036)	
Lockdown × April 2020	-0.332***	-0.372***	-0.370***	-0.351***
	(0.049)	(0.058)	(0.058)	(0.051)
Observations	1936	1318	1318	1318

Note: Linear probability model; s.e. in parentheses; *p<0.05, **p<0.01, ***p<0.001.

What was the main reason why you had to stop working?

No significant difference between lockdown and no-lockdown areas.
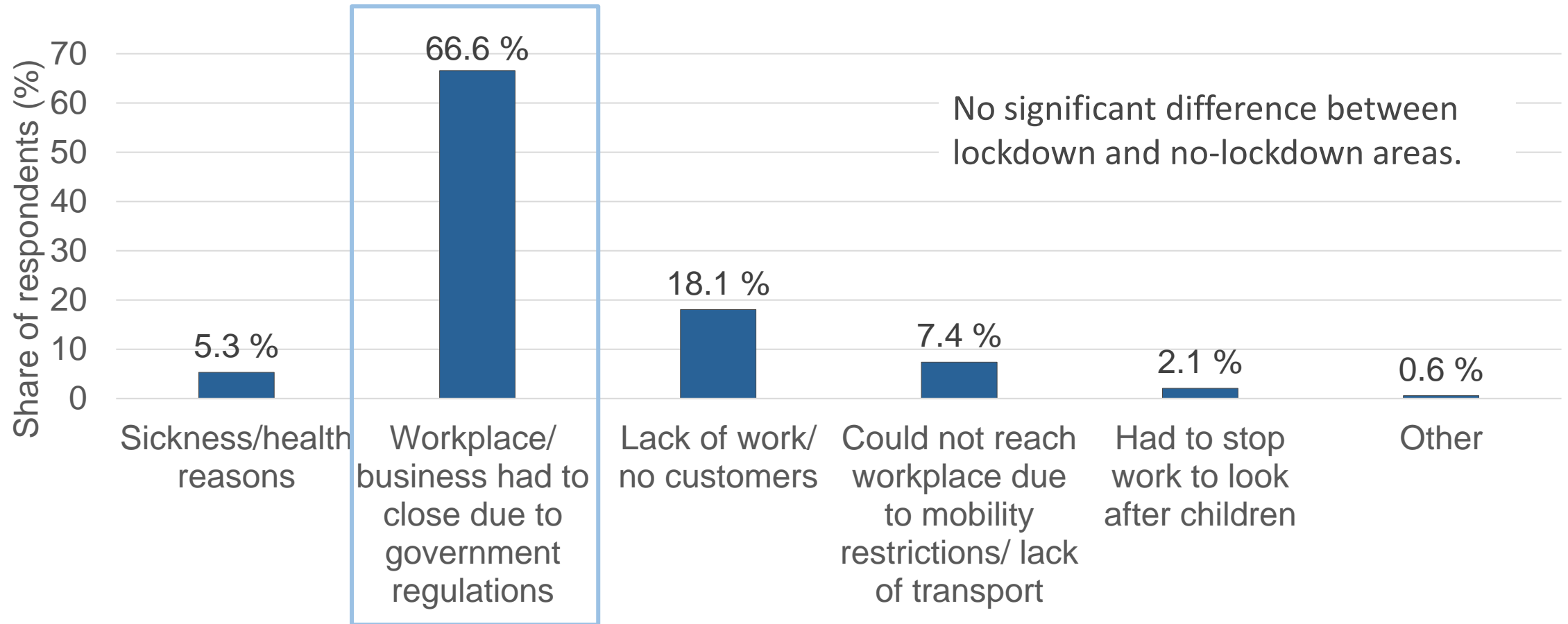
Informal self-employed workers were most affected in lockdown areas

Employed in April 2020

No-Lockdown   Lockdown

Informal SE   Formal SE   Informal WE   Formal WE

- In lockdown areas, 77.4% of all informally self-employed workers had stopped work in April 2020, compared to 28.3% in no-lockdown areas.

- We find no statistically significant differences between workers in upper-tier vs. lower-tier informality.

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Strong employment recovery up to Aug/Sept

Employed in last 7 days

86.2 %   84.1 %

Legend: No-Lockdown | Lockdown
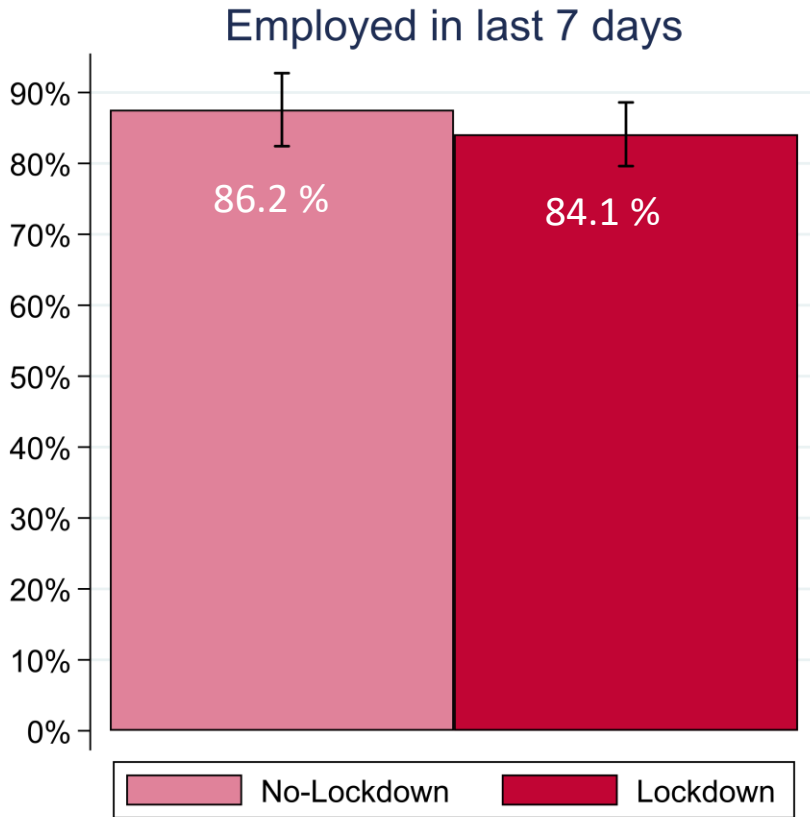
Note: No-Lockdown districts limited to those with population density above 300/km².

- No statistically significant difference in the probability to be working in Aug/Sept between lockdown and no-lockdown areas

Dependent variable: Working in period *t* (=1 if YES)	(1) Full sample	(2) District size cut-off	(3) District size cut-off with covariates	(4) District size cut-off with worker FE
Post-period (base Feb 2020)				
Last 7 days	-0.125***	-0.116***	-0.116***	-0.116***
	(0.019)	(0.026)	(0.026)	(0.026)
Lockdown	0.015	0.010	0.017	
	(0.029)	(0.033)	(0.036)	
Lockdown × Last 7 days	-0.013	-0.022	-0.022	-0.022
	(0.024)	(0.030)	(0.030)	(0.030)
Observations	1936	1318	1318	1318

Note: Linear probability model; s.e. in parentheses; *p<0.05, **p<0.01, ***p<0.001.

- Across the sample, **18 % of all men** and **29 % of all women** who had **stopped work** in April, were still not working in Aug/Sep.

Breaks in employment were mainly temporary

83.3 % of those who stopped work, considered this break to be temporary.

Chances to resume work were higher in lockdown than in non-lockdown areas.

Employment status in April 2020
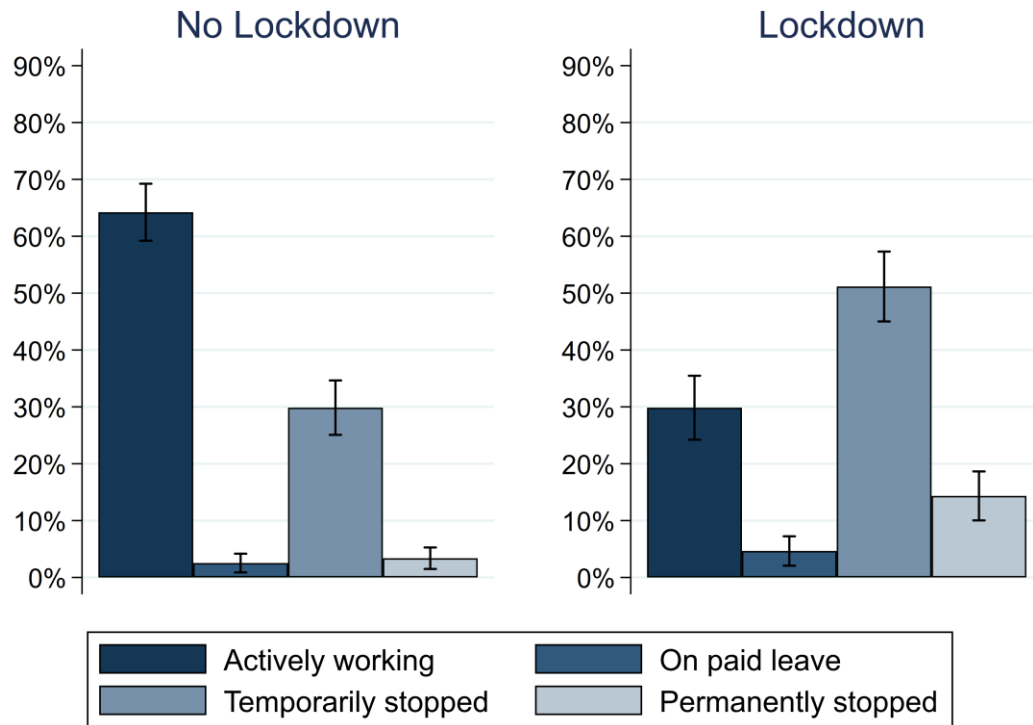
Note: Use full sample to have sufficient observations in small groups (paid leave/permanently stopped) in no-lockdown areas.

Employed in last 7 days	(1) Full sample	(2) Full sample
Lockdown	-0.007	-0.018
	(0.024)	(0.026)
Status in April 2020 (base: Actively working)		
On paid leave	0.070***	0.012
	(0.016)	(0.028)
Temporarily stopped	-0.184***	-0.185***
	(0.042)	(0.044)
Permanently stopped	-0.430**	-0.455***
	(0.172)	(0.167)
Lockdown#On paid leave	0.007	0.051*
	(0.024)	(0.031)
Lockdown#Temporarily stopped	0.149**	0.167***
	(0.060)	(0.060)
Lockdown#Permanently stopped	-0.033	0.015
	(0.196)	(0.191)
Observations	612	612
Covariates	No	Yes

Note: Linear probability model; s.e. in parentheses; *p<0.05, **p<0.01, ***p<0.001.

...But employment, working hours and earnings remain below pre-COVID levels

	(1) Working in period t (=1 if YES)	(2) Log weekly earnings (constant 2018 prices) in period t	(3) Weekly hours worked in period t
Post-period (base Feb 2020)			
April 2020	-0.283**	-0.658***	-14.226***
	(0.047)	(0.107)	(4.581)
Last 7 days	-0.116***	-0.459***	-6.955***
	(0.026)	(0.067)	(1.811)
Lockdown × April 2020	-0.351***	0.346***	8.902*
	(0.051)	(0.111)	(5.147)
Lockdown × Last 7 days	-0.022	0.135	0.631
	(0.030)	(0.084)	(2.059)
Observations	1318	710	761
Panel effects	FE	FE	FE

Note: s.e. in parentheses; *p<0.05, **p<0.01, ***p<0.001.

Respondents working in August/September, on average still saw a...

... 36.8% **decline in weekly earnings** compared to base of 271 GH₵ in Feb 2020.

... 14.3% **decline in working hours** compared to a base of 49 hrs/week in Feb 2020.

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Dependent variable: Log weekly earnings in period t (constant 2018 prices)	(1) Full sample with covariates	(2) Full sample with worker FE
Post-Period (base Feb 2020)		
Last 7 days	-0.187**	-0.222***
	(0.087)	(0.055)
Self-employed in Feb 2020	0.271***	
	(0.099)	
Formal work in Feb 2020	0.187*	
	(0.101)	
Female	-0.230**	
	(0.101)	
Last 7 days × Self-employed in Feb 2020	-0.222**	-0.170**
	(0.106)	(0.076)
Last 7 days × Formal in Feb 2020	0.099	0.067
	(0.119)	(0.089)
Last 7 days × Female	-0.144	-0.205**
	(0.115)	(0.087)
Observations	876	876
District fixed effects	YES	NO
Panel effects	RE	FE

Indicative evidence that the earnings of

- self-employed workers

- (informal workers)

- women

remain most heavily affected.

Robustness checks

To ensure the robustness of our findings, we estimate several variants of our preferred model specification:

- ✓ We test whether our data support the assumption of **common pre-treatment trends** in labour market outcomes of treated and control groups, underlying the DID identification.

- ✓ To test for potential bias due to **self-selection**, we examine whether our results are robust to the exclusion of workers who have moved since the 2018/19 panel round.

- ✓ To ensure that our results are not driven exclusively by the **two major metropolitan districts**, which together account for 65.6 per cent of the treated observations, we exclude the Accra Metropolitan and Kumasi Metropolitan districts from the estimation.

- ✓ We estimate a specification with random treatment assignment of districts.

Summary and conclusions

We provide **causal evidence** of the impact of **stringent lockdown policies** on labour market outcomes at the extensive and intensive margin, using Ghana as a case study.

➢ Take advantage of a **specific policy setting**: Strict stay-at-home orders were issued and enforced in two spatially delimited area (major metropolitan centres), while in the rest of the country less stringent regulations were in place.

Using a **difference-in-differences** design we find that:

- The lockdown measures implemented in response to the COVID-19 pandemic heavily affected economic activity in the affected districts during April 2020.

- The shock was felt the most by **workers in vulnerable forms of employment**.

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Summary and conclusions ctd.

- Workers in **informal self-employed**, who need to earn a living on a day to day basis, **were most often forced to stop their activities during the lockdown**, while those in formal wage employment were most likely to continue their work.

- Overall, there has been a **strong recovery in em**ployment up to Aug/Sept 2020. However, **employment levels remain below pre-COVID levels**, and the recovery has been slower for women than men.

- In addition, there is a **persistent negative effect on working hours and earnings**, affecting particularly the earnings of **self-employed workers and women**.

- The COVID-19 pandemic and related government response measures tend to have **accentuated existing vulnerabilities** in the Ghanaian labor market.

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