

MEASURING THE IMPACT OF COVID-19 ON THE MENA REGION: LABOUR MARKET, FIRMS AND HOUSEHOLDS

Prepared By: Mr. Adel Ben Youssef & Burim Prenaj

Date: 25-04-2022





Chapter title: Job loss during COVID-19: Estimating the poverty and food security effects in Egypt, Tunisia and Morocco





Section 1. INTRODUCTION

Introduction



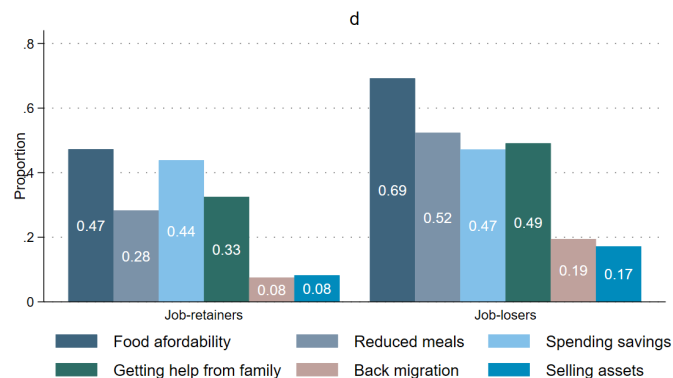
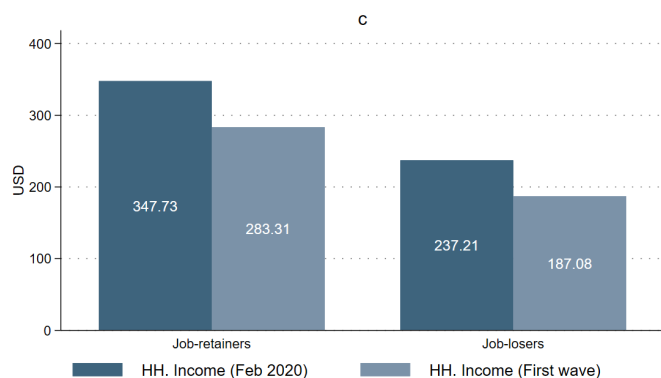
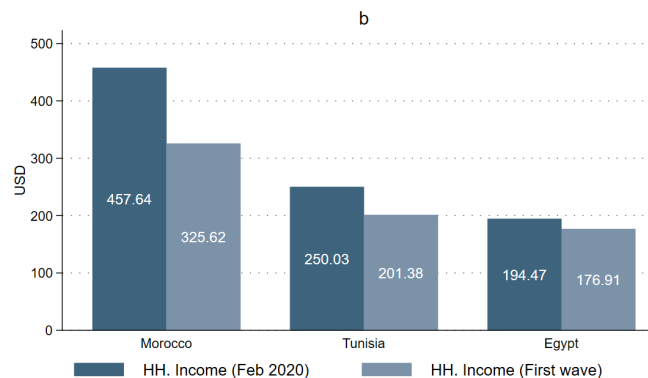
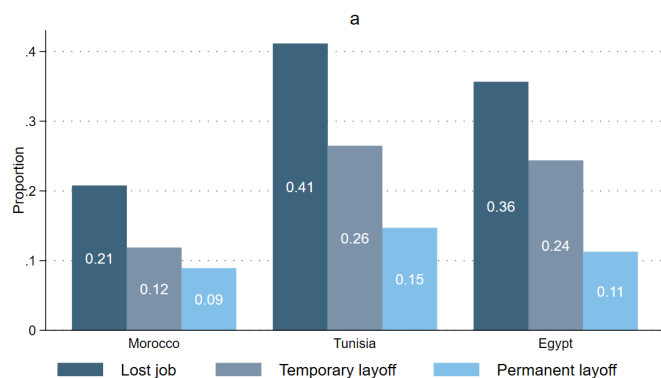
This research Project studies the impact of job-loss due to COVID-19 on household income, food security and coping mechanisms.

- **Job-loss selection issues:** we apply a propensity score weighting procedure to correct for differences between groups.
- **Data source:** ILO/ERF COVID-19 MENA Monitor.
- **We focus** on the effect of job-loss due to COVID-19 on:
 - Household income per capita
 - Food affordability
 - Food reduction
 - Spending savings
 - Getting help from relatives
 - Back migration
 - Borrowing
 - Selling assets

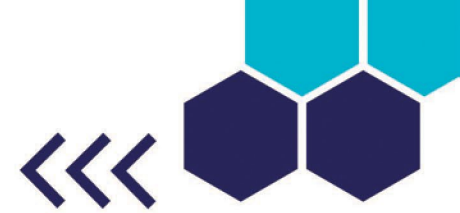
Motivation



Job loss, household income, food security and coping strategies



COVID-19 and labour market



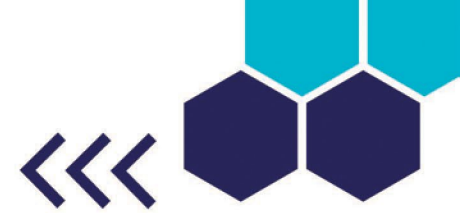
Early research mostly focused on the working from home possibilities and occupations at risk from COVID-19 mobility restrictions (**Mongey Weinberg (2020); Dingel Neiman (2020); Acemoglu et al. (2020); Gottlieb et al., (2020)**)

- The second stream of research mostly focused on the labor market effects of COVID-19 **Bojras Cassidy (2020); Kim et. al., (2020); Farre et. al., (2020); Hassink et. al., (2020); Kohler et. al., (2020); Blade et.al., (2020); Dang Nguyen (2020).**
- They report universally negative effects of COVID-19 on employment, hourly wages, working hours, employment transitions, gender inequality, mental health etc.
- **Jain Bassier (2020) and Kholer et. al, 2021** use a similar empirical strategy with our study. They also report negative effects on poverty and labor market outcomes.



Section 2. DATA AND METHODS

Data and variables



- **ILO/ERF COVID-19 MENA Monitor.**

- A nationally representative panel survey which covers five MENA countries, we focus on Egypt, Tunisia and Morocco.

- Specially designed survey to provide reliable data regarding the effect of the pandemic on MENA

- Contains detailed information on a broad set of variables: demographic and household characteristics, education, labor market information, data on income and earnings, food security and coping strategies.

- **We restricted our sample to respondents who:**

- Were employed at the beginning of the pandemic.

- Have complete information regarding demographic characteristics, education, income and job characteristics.

- Have information for job-loss status at the time of the first interview.

- **The final sample** consists of 5,257 individuals - 3,583 job-retainers and 1,674 job-losers

Data and variables (2)



- Due to the **relatively high attrition rate** we use the first available information for each individuals who appeared the survey.
 - So, we assess the contemporaneous effects of job-loss on the outcomes of interest.
 - We measure the short-term effects of job-loss.
 - In our robustness checks we also estimate the effect of job-loss at the time of the first interview (time t) on outcome at the time of the second interview (time t + 1) conditional on the fact that the respondent retained job-loser status.
- We use retrospective information (February 2020) as our baseline for modeling the probability of job-loss.
- **Dependent variables:** Household income per capita, Food affordability, Food reduction, Spending savings, Getting help from relatives, Back migration, Borrowing, and Selling assets
- **Job-loss:** We assign the job-loss status to anyone who has experienced any kind layoff in the last 60 days because of COVID-19.

This measure is further divided into permanent layoff or temporary layoff.

Identification strategy



- Estimation strategy:

$$Y_{i,t} = \beta_0 + \beta_1 \text{LostJob}_{i,t} + \Gamma X_{i,t-1} + \tau_{i,t-1} + \epsilon_i$$

- $Y_{i,t}$: captures the set of outcome variables consisting of household income per capita, food affordability and reduced meals and five coping strategies of worker i .
- $\text{LostJob}_{i,t}$: a binary indicator showing whether worker i has lost his/her job as a result of COVID-19
- $\Gamma X_{i,t-1}$: a vector of predetermined covariates, namely age and its square, gender, marital status, living area, informal job, working from home, regular job, education level and firm size
- $\tau_{i,t-1}$: captures country, industry, occupation and wave fixed effects.
- ϵ_i : error term

Identification strategy (2)



- Our estimation strategy would produce unbiased estimates in an experimental context with randomly assigned job-loss. However, in a real context job-loss is far from random
- The key empirical problem we face is controlling for the selection into job-loss.
 - Individual characteristics such as ability, skills and education are negatively associated with job-loss while at the same being positively associated with the quality of the job or more immune industries because of remote working possibility.
- To overcome these selection issues this study uses a propensity score weighting procedure.

Propensity score weighting



- **Job-losers and job-retainers differ** significantly in almost all characteristics
- We use the following **probit** to model the probability of job-loss conditional on observable characteristics.

$$P^R [JL_i] = \alpha_0 + \delta X_i + \epsilon_i$$

- The vector δX_i captures a wide range of individual and job characteristics considered important for affecting the job-loss probability.
- In the next step we use the estimated probabilities to construct **propensity score weights** based on job-loss status, by weighting each job-loser by $1/\rho_i$ and each job retainer by $1/(1 - \rho_i)$.
- Finally we estimate the first equation using constructed weights, this method should reduce the bias in parameter β_1 allowing us to make a causal interpretation



Section 2. FINDINGS

Summary statistics



Characteristics of the sample by job-loss status

	Raw means			Propensity score weighted means		
	Job-retainers	Job-losers	Difference %	Job-retainers	Job-losers	Difference %
Age	38.15 (10.79)	35.58 (10.44)	-6.74%	37.17 (10.77)	36.98 (10.86)	-0.51%
Married	0.68 (0.47)	0.61 (0.49)	-10.29%	0.66 (0.48)	0.65 (0.48)	-1.52%
Female	0.24 (0.42)	0.22 (0.41)	-8.33%	0.23 (0.42)	0.22 (0.41)	-4.35%
Rural	0.26 (0.44)	0.34 (0.47)	30.77%	0.28 (0.45)	0.28 (0.45)	0.00%
Informal job	0.41 (0.49)	0.67 (0.47)	63.41%	0.49 (0.50)	0.48 (0.50)	-2.04%
Work inside an establishment	0.69 (0.46)	0.49 (0.50)	-28.99%	0.63 (0.48)	0.63 (0.48)	0.00%
Regular job	0.75 (0.43)	0.47 (0.50)	-37.33%	0.67 (0.47)	0.67 (0.47)	0.00%
Less than basic	0.16 (0.37)	0.24 (0.43)	50.00%	0.18 (0.39)	0.19 (0.39)	5.56%
Basic	0.12 (0.33)	0.18 (0.38)	50.00%	0.14 (0.35)	0.14 (0.35)	0.00%
Secondary	0.31 (0.46)	0.36 (0.48)	16.13%	0.33 (0.47)	0.32 (0.47)	-3.03%
Tertiary	0.41 (0.49)	0.22 (0.41)	-46.34%	0.35 (0.48)	0.36 (0.48)	2.86%
Micro	0.41 (0.49)	0.55 (0.50)	34.15%	0.45 (0.50)	0.45 (0.50)	0.00%
Small	0.10 (0.30)	0.11 (0.32)	10.00%	0.11 (0.31)	0.10 (0.30)	-9.09%
Medium	0.15 (0.35)	0.11 (0.32)	-26.67%	0.14 (0.34)	0.13 (0.34)	-7.14%
Large	0.34 (0.47)	0.22 (0.41)	-35.29%	0.30 (0.46)	0.32 (0.47)	6.67%
Observations	3583	1674		3583	1674	

Main results

Effect of job-loss on selected outcomes



	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	HH. income per capita	Could not afford food	Reduced meals/portions	Taking money out of savings	Help from relatives	Migrating back to family	Borrowin g	Selling assets
A. Unweighted								
Job-loss	-0.183*** (0.032)	0.129*** (0.016)	0.116*** (0.016)	0.068*** (0.017)	0.093*** (0.017)	0.077*** (0.012)	-0.001 (0.012)	0.071*** (0.012)
R-squared	0.39	0.15	0.18	0.06	0.08	0.11	0.03	0.05
B. Weighted								
Job-loss	-0.115*** (0.033)	0.141*** (0.018)	0.110*** (0.016)	0.084*** (0.018)	0.099*** (0.018)	0.061*** (0.011)	-0.000 (0.013)	0.062*** (0.012)
R-squared	0.42	0.12	0.17	0.08	0.08	0.11	0.02	0.05
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2396	4768	4768	4768	4768	4768	4768	4768

Robustness checks

Effect of job-loss on selected outcomes

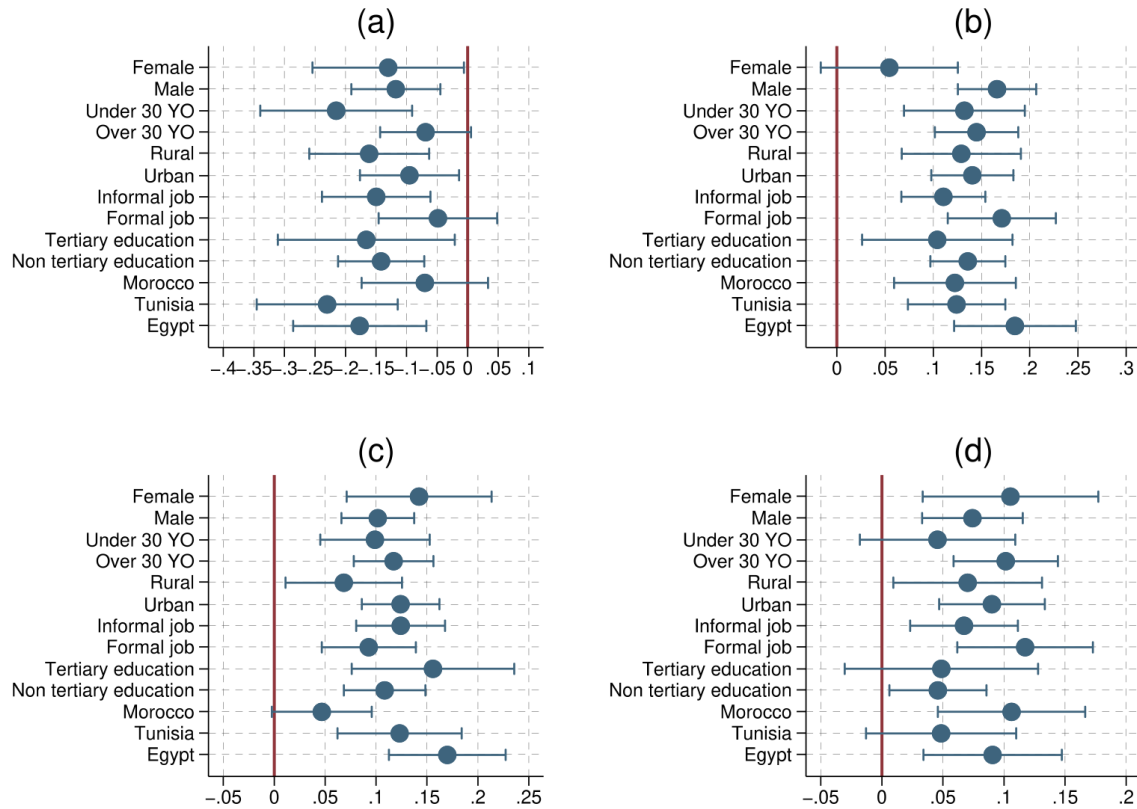


	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	HH. income per capita	Could not afford food	Reduced meals/portions	Taking money out of savings	Help from relatives	Migrating back to family	Borrowing	Selling assets
A. Outcomes t+1								
Lost job	-0.150** (0.062)	0.060* (0.033)	0.117*** (0.033)	0.002 (0.034)	0.086*** (0.031)	0.037* (0.020)	-0.004 (0.025)	0.086*** (0.022)
Observations	743	1432	1432	1432	1432	1432	1432	1432
R-squared	0.44	0.21	0.15	0.07	0.13	0.08	0.05	0.08
B. Temporary lay off								
Lost job	-0.086** (0.040)	0.138*** (0.022)	0.113*** (0.020)	0.115*** (0.022)	0.104*** (0.022)	0.060*** (0.012)	0.012 (0.017)	0.048*** (0.013)
Observations	2141	4414	4414	4414	4414	4414	4414	4414
R-squared	0.46	0.13	0.17	0.09	0.08	0.11	0.03	0.05
C. Permanent lay off								
Lost job	-0.228*** (0.053)	0.180*** (0.040)	0.214*** (0.033)	0.051 (0.044)	0.166*** (0.047)	0.115*** (0.024)	-0.039 (0.024)	0.048** (0.024)
Observations	1573	3488	3488	3488	3488	3488	3488	3488
R-squared	0.42	0.18	0.30	0.10	0.12	0.22	0.07	0.09
D. Control group unaffected								
Lost job	-0.119*** (0.037)	0.133*** (0.021)	0.097*** (0.018)	0.079*** (0.021)	0.095*** (0.021)	0.052*** (0.012)	-0.015 (0.014)	0.059*** (0.014)
Observations	2109	4322	4322	4322	4322	4322	4322	4322
R-squared	0.42	0.13	0.16	0.08	0.08	0.11	0.02	0.06
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Heterogeneous treatment effects



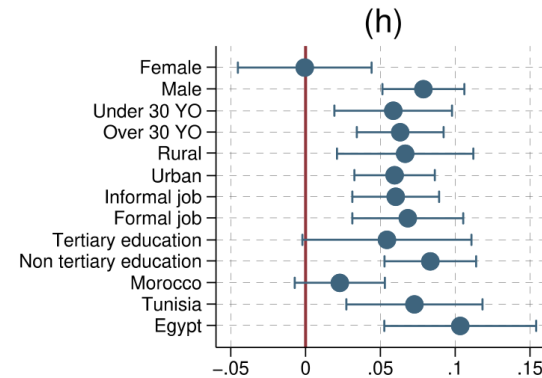
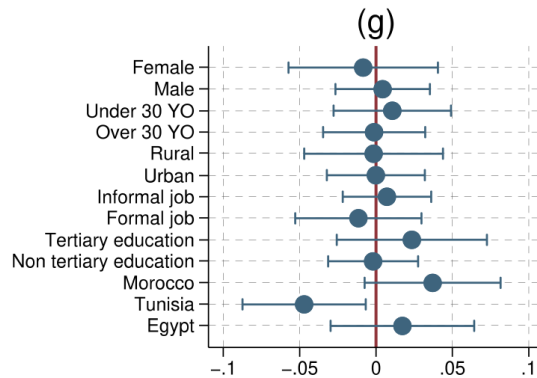
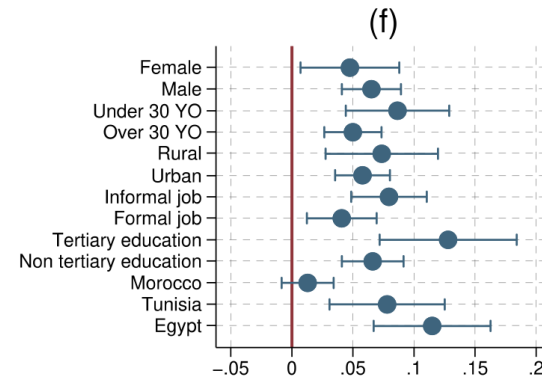
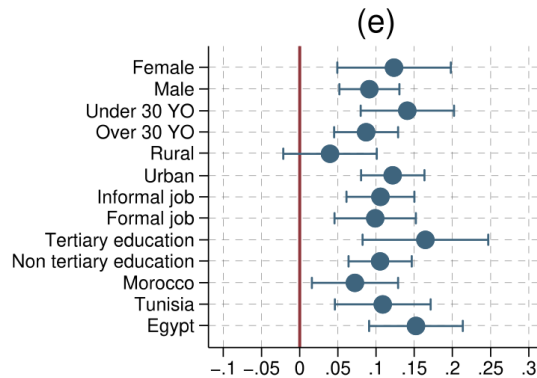
Heterogeneous treatment effects; HH. income per capita (a), food affordability (b), reduced meals (c) Taking money out of savings (d)



Heterogeneous treatment effects (2)



Heterogeneous treatment effects; Help from relatives (e), Migrating back to family (f), Borrowing (g), Selling assets (h) household income, food security and coping strategies



Conclusions



- Job-loss due to COVID-19 has a significant **negative effect on household income**:
 - Job-loss due to COVID-19 has caused a **11.5 percent** reduction in household income
 - Income reduction is comparatively larger for females, young workers, informal workers, rural workers, and less educated workers
 - Income reduction is also higher for workers from Tunisia followed by Egypt and then Morocco.
- Job-loss due to the COVID-19 seems to have a relatively **large effect on food security**:
 - Job-loss had about **14 percent** higher probability of not affording food.
 - Similarly, job loss has caused a **11 percent** higher probability of meal reduction.
- Finally, we find that job-losers differ significantly from job retainers in terms of **coping strategies**, job-losers are more likely to consume savings, seek help from their relatives, sell assets and migrate back to their family homes.

*Thank you for
your attention!*



Questions?!