Protectionism doesn't protect: On trade policy and food security in the MENA region

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STAPLES
Stable food Access and Prices and Lower Exposure to shocks

Motivation

- Major trade liberalization with increasing pressures to reduce tariffs and to remove non-tariffs barriers on trade in food and agriculture products since the 1980s –> direct implications for food security in developing countries and especially the MENA region.

- Global drivers of food insecurity problem → Recent global economic shocks set in motion by: **Covid-19 pandemic** in 2020 and 2021, **Ukraine-Russia War** in 2022, conflict in the Middle East, together with the frequent occurrence of **natural and climatic disasters**, and increased **water insecurity**.

- Amid all economic, political and climatic shocks, several countries opt for **more stringent trade policies** with the aim of protecting national food security.

Sources: World Bank (2023).

Motivation

- Problem of food insecurity is becoming more timely and critical for MENA region: it accounts for 12.2% of the undernourished population and almost one out of five people living in the = region is likely to be food insecure in 2023, up from about one out of ten in 2006

- Main drivers:
- ↓economic growth to 3 % in 2023 (from 5.8% in 2022)
- Double-digit food inflation: Between March and December 2022, average year-on-year food inflation was 29% in the MENA region. This inflation accounts for between 24-33% of food insecurity of all MENA countries in 2023.
- Complex set of factors: water scarcity, climate change, unsustainable agricultural practices, the lack of rural development, and **overreliance on food imports (dependency on ↑ from 10% to 40% over the last 50 years)**.
- During Covid period, more restrictive trade policies: tariffs on agriculture > manufacturing and trade-restrictive NTMs> trade facilitating NTMs.

Sources: FAO (2022), Gatti et al. (2023), and Le Mouël et al., 2023

Motivation

- **Research questions**

- What is the impact of restrictive trade policies implemented during the Covid-19 pandemic on households' food security in the MENA region?

- What is the impact of restrictive trade policies implemented during the Covid-19 pandemic on food security of the most vulnerable: informal workers, blue collars and women ?

While most of the literature that focused on the impact of trade policies on food security was conducted at the macro level, the micro evidence is quite scant especially at the empirical level. Yet, the literature has presented generally two opposing points of view.

What we do?

- We contribute to the ongoing debate about protectionism during times of shock and argue that trade policy restrictions worsened food security outcomes, especially for the most vulnerable individuals and households.

- The paper uses the combined COVID-19 MENA Monitor Household Survey constructed by the Economic Research Forum for five MENA countries (Egypt, Jordan, Morocco, Sudan, and Tunisia) and combines it with data on trade policy to examine how restrictions affect food security and the specific forms in which this effect materializes.

- We also examine the additional impact on three potentially more vulnerable groups of individuals: women, blue-collar workers, and informal workers.

What find?

- Our findings suggest that restrictive trade policies worsen food security for everyone.
- The outcome is worse for the most vulnerable consumers, who suffered reduced food demand and compromised utilization.
- From a policy perspective, our findings suggest that protectionism does not effectively protect domestic consumers during shocks.
- In fact, it appears to worsen food security outcomes for the very individuals these policies intended to protect in the first place.

Outline

- Literature review
- Data and stylized facts
- Methodology
- Empirical findings
- Conclusion

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Literature Review

Free trade as an opportunity to food security

Macro: (1) ↓food production cost and prices, ↑national incomes, ↑ market access and ↑food security; (2) ↑international competitiveness of agricultural exports of developing countries; (3) ↑ diversification at country and product levels to avoid problem of thin markets for staple food and ↑access of consumers to diverse, nutritious, and higher quality foods.

Micro: (1) small farm holders better engaged in global and regional supply chains → ↑their incomes and ↓poverty, and ↑ food security; (2) expansion of cash crops destined for exports can ↑ the food security by ↑ incomes of farmers with comparative advantages and by ↓ food import bills through higher export earnings; (3) ↑ i dietary diversification.

Free trade as a threat to food security

Marco: (1)↑short-run adjustment costs with distributional consequences among developed and developing countries; (2) ↓ of government's fiscal position with tariffs reduction and failure to compensate losers through safety nets; (3) lack of competitive markets and a level playing field (transnational corporations vs. small holder farmers); (4) food import dependency and ↑ supply-side shocks.

Micro: (1) ↑ food insecurity of most vulnerable (small farm holders with constraints such as remoteness, deficient infrastructure, and the lack of productive resources; (2) when cash crop farming largely displaces subsistence farming → ↑ dependency of households on imports and market conditions ; (3) farmers, workers and traders in import-competing sectors lose incomes; (4) ↓ dietary quality due to increased prices of cereals, dairy, meat and fish (sources of calories and proteins).

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Data and stylized facts

- Pooled cross-section data from the Combined COVID-19 MENA Monitor Household Survey (CCMMHH) constructed by the Economic Research Forum covering:

- 5 countries (Egypt, Morocco, Jordan, Sudan and Tunisia);
- 11 sectors (Accommodation and food services; Agriculture, fishing or mining; Construction or utilities; Education; Financial activities or real estate; Health; Information and communication; Manufacturing; Other services; Retail or Wholesale; Transportation and storage),
- 5 waves of COVID-19: Nov-2020, Feb- 2021, Apr-2021, Jun-2021, Aug 2021, and counts 34,219 observations.

- For trade policy variables, tariffs data for agriculture and manufacturing sectors come from the World Tariff Profiles (2021), weighted with HH surveys.

Data and stylized facts

- According to the survey, individual is food insecure if, during the past 7 days,

(1) They faced difficulties in the food market because of: government mobility restrictions/closures ***(Gov. Rest.)***

(2) They were unable to buy the usual amount because of shortages ***(Shortage)***

(3) They were unable to buy the usual amount because of price increases ***(Price Inc.)***

(4) They were unable to buy the usual amount because of decreased income ***(Income dec.)***

(5) They had to reduce meals/portions ***(Reduced meals/port)***

(6) They had one of the previous dimensions of food insecurity ***(at least one)***

Data and stylized facts

- Food availability
  - They were unable to buy the usual amount because of shortages
- Affordability
  - They were unable to buy the usual amount because of price increases (Price Inc.)
  - They were unable to buy the usual amount because of decreased income (Income dec.)
- Utilization
  - They had to reduce meals/portions (Reduced meals/port)

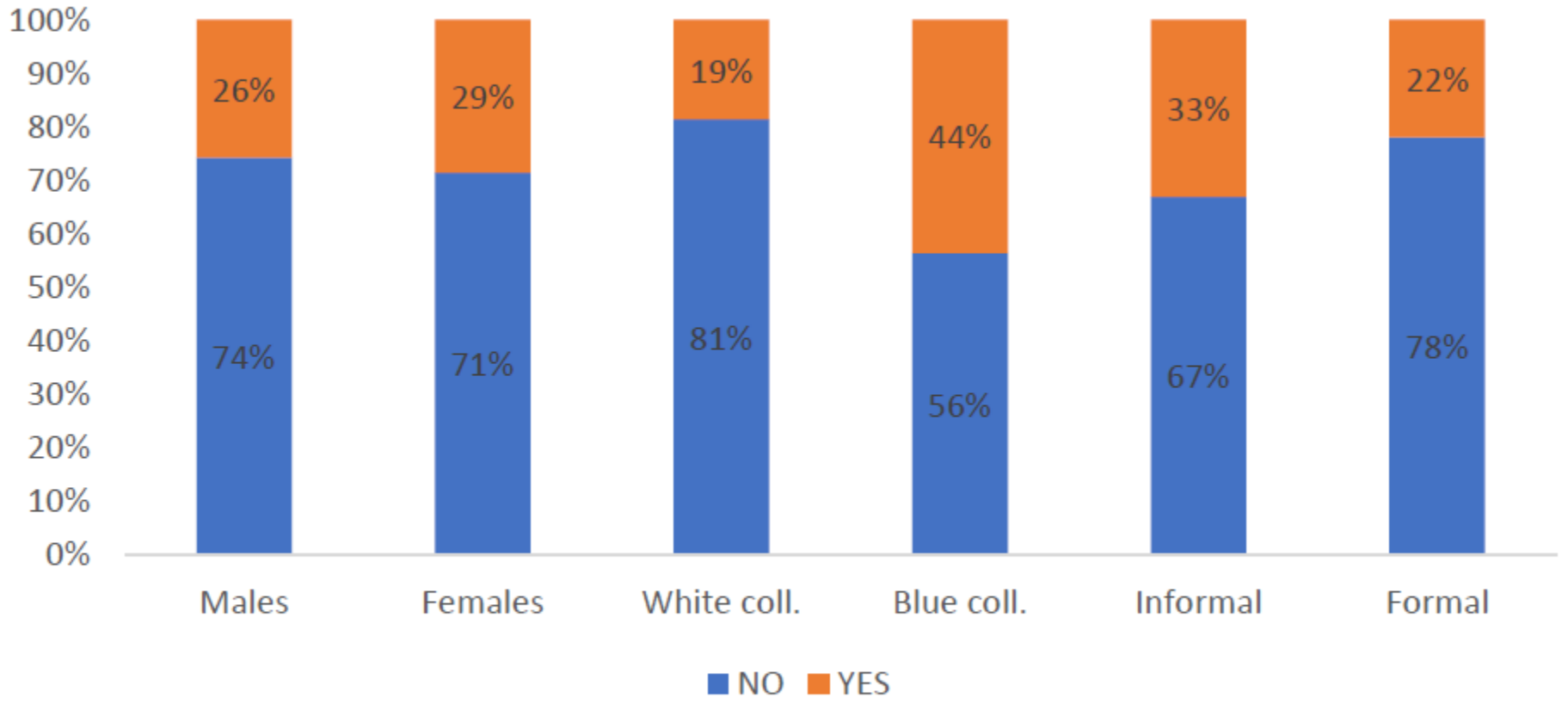
Data and stylized facts

Table 1: Food insecurity by country

Dimension		Jordan	Morocco	Sudan	Tunisia	Egypt	Total
Shortage	NO	87%	88%	62%	48%	80%	73%
	YES	13%	12%	38%	52%	20%	27%
Price increase	NO	52%	48%	19%	21%	55%	39%
	YES	48%	52%	81%	79%	45%	61%
Income decrease	NO	44%	38%	44%	29%	54%	40%
	YES	56%	62%	56%	71%	46%	60%
Reduced meals/portions	NO	59%	67%	49%	46%	57%	56%
	YES	41%	33%	51%	54%	43%	44%
All dimensions	NO	95%	96%	96%	80%	97%	92%
	YES	5%	4%	4%	20%	3%	8%

Data and stylized facts

Figure 1: Food insecurity due to shortage – by skill, gender, and formality



Source: Authors' own elaboration using the ERF-ILO COVID Monitor
Note: Survey weights are used.

Data and stylized facts

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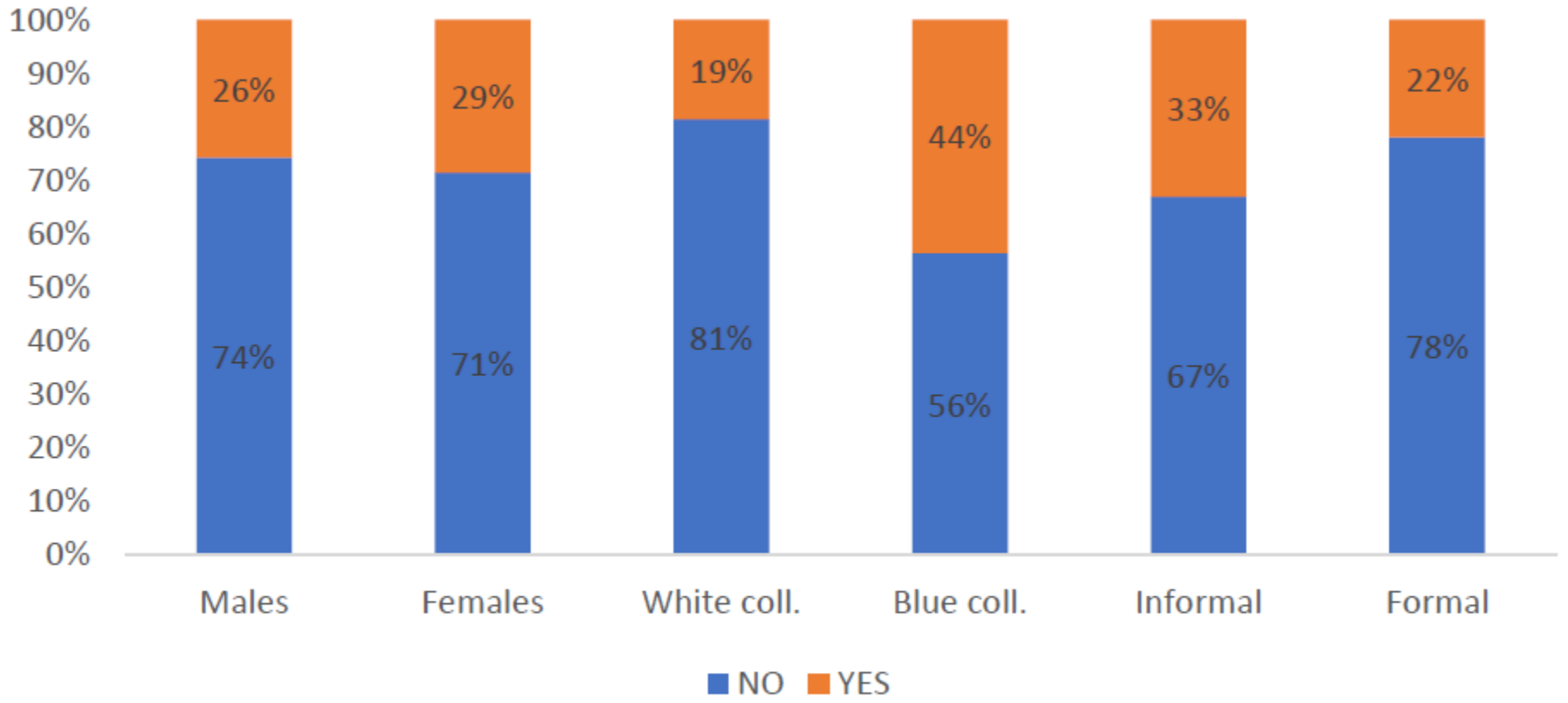
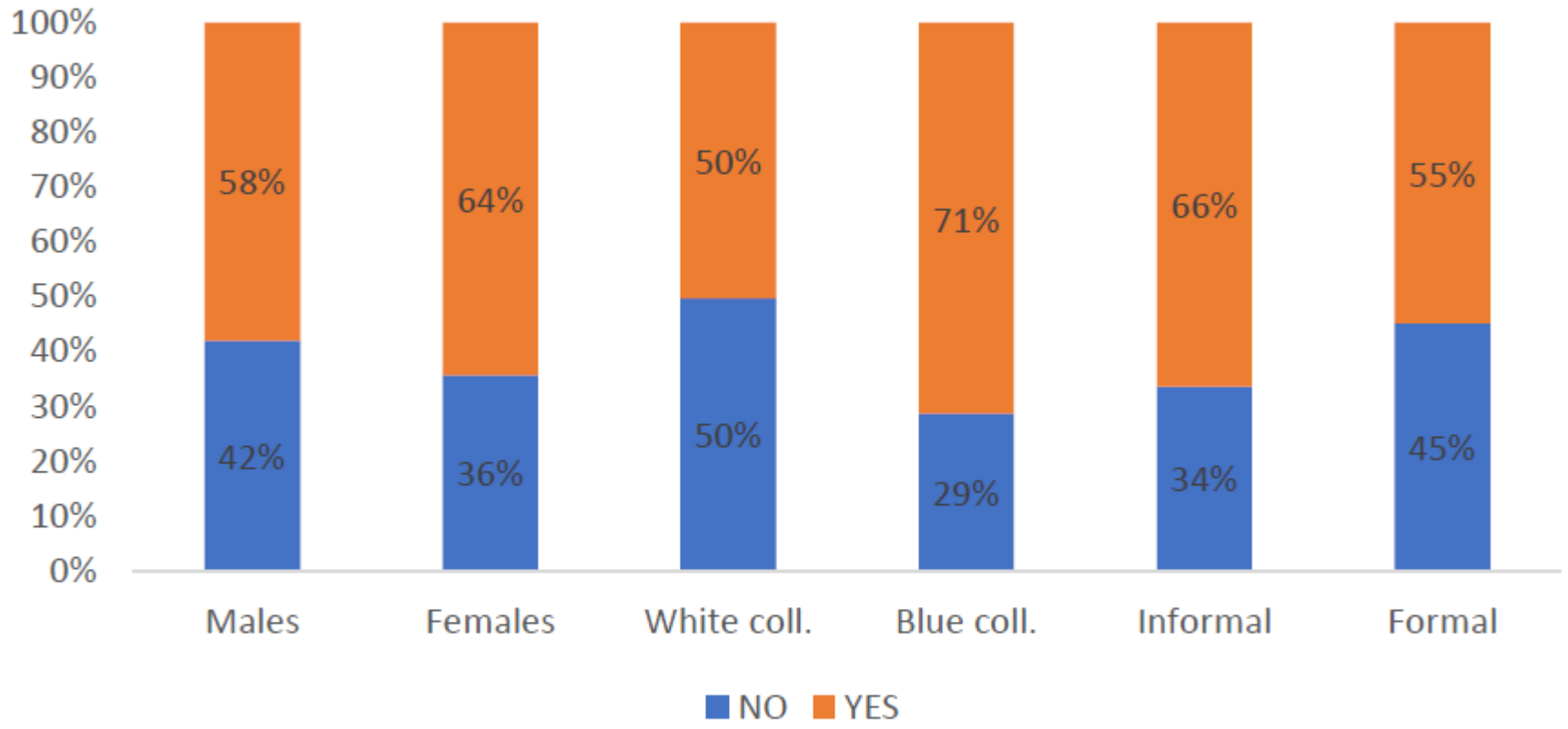


Source: Authors' own elaboration using the ERF-ILO COVID Monitor
Note: Survey weights are used.

Data and stylized facts

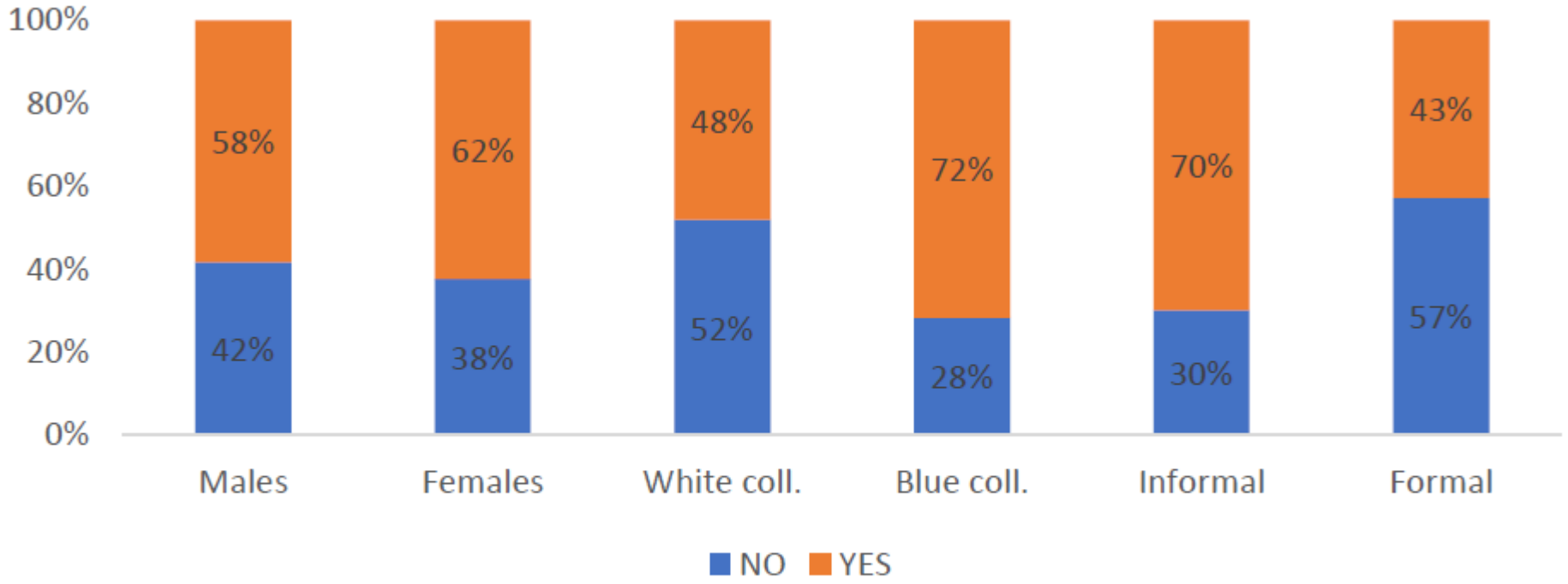
Figure 2: Food insecurity due to price increases – by skill, gender, and formality



Source: Authors' own elaboration using the ERF-ILO COVID Monitor
Note: Survey weights are used.

Data and stylized facts

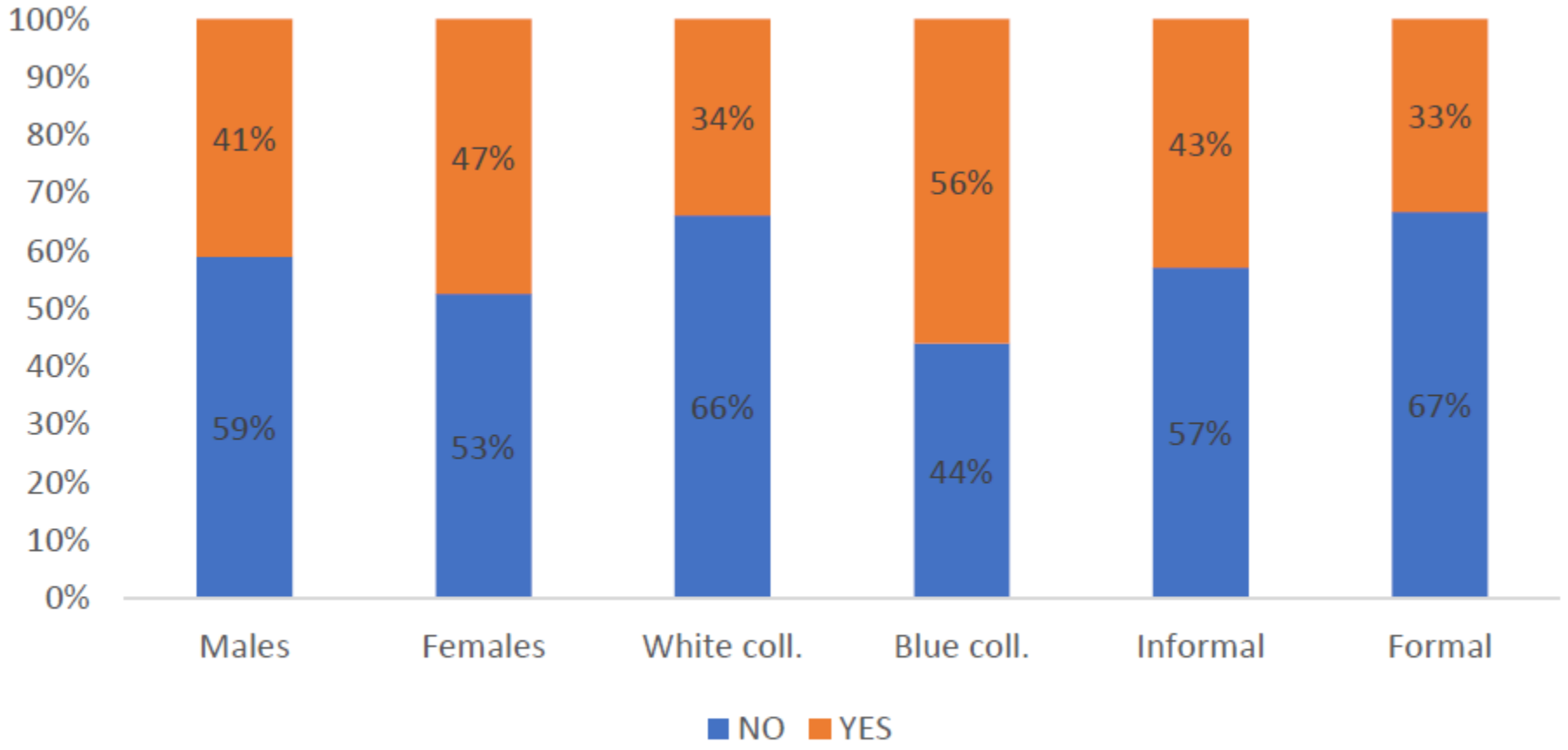
Figure 3: Food insecurity due to income decreases – by skill, gender, and formality



Source: Authors' own elaboration using the ERF-ILO COVID Monitor
Note: Survey weights are used.

Data and stylized facts

Figure 4: Food insecurity due to reduced meals/portions – by skill, gender, and formality



Source: Authors' own elaboration using the ERF-ILO COVID Monitor
Note: Survey weights are used.

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Methodology

- To understand the impact of trade effect on food security, we define the following equation:

$$FS_{ijst} = a_1 X_{ijst} + a_2 H_{ijst} + a_3 T_{ijst} + a_4 S_s + a_5 D_j + w_t + v_{ijst}$$

- $\boldsymbol{Fs_{ijst}}$ a binary variable that takes the value of 1 if the individual *i* in country *j* is employed in sector *s* at time *t* is food insecure, and 0 otherwise.
- $\boldsymbol{T}$ is a vector of trade policy variables that includes applied tariffs for agriculture and manufacturing, ad-valorem equivalents of services and the number of NTMs.
- $\boldsymbol{H_{ijst}}$ are household characteristics captured by the household size.

Methodology

- $\boldsymbol{X_{ijst}}$ denotes individual characteristics: ***gender*** (DV = 1 if female and zero otherwise), ***age***, ***educational level*** (three DV, basic, secondary and higher education with the reference category being "illiterate"), ***skill*** (DV=1 if the individual is a blue collar and zero otherwise), ***geographical location*** (DV=1 if the individual is working in an urban region and zero otherwise), and ***formal employment status*** (DV= 1 if the individual is working in the formal sector and zero otherwise),
- $\boldsymbol{D_j}$ are country dummies added to control for the unobserved country-specific characteristics.
- **Sectoral** $\boldsymbol{S_s}$ and **wave** $\boldsymbol{w_t}$ dummies are added to control for the unobserved sector and wave-specific characteristics.
- $\mathbf{v_{ijs}}$ is the discrepancy term. ***Errors are clustered by country and by sector*** as we are merging macroeconomic data (tarif) with individual data.

Methodology

- The baseline regression is extended in two ways:

(1) We run regressions by formality, by gender and by skill in order to see how trade barriers affect different categories, given that informal workers, blue collars and women are more likely to be affected.

(2) We examine how tariffs of specific products affect food security.

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Baseline results

	(1)	(2)	(3)	(4)	(5)
	Food insecurity	Shortage	Price	Income	Reduced meals/portions
Formal	-0.120**	-0.116***	-0.0607	-0.411***	0.00307
	(0.0527)	(0.0424)	(0.0571)	(0.0927)	(0.0877)
HH size	0.0290	0.0117	0.0436**	0.0248***	0.0235
	(0.0237)	(0.0213)	(0.0195)	(0.00954)	(0.0260)
Blue collar	0.373	-0.0333	0.281	0.230	0.357*
	(0.383)	(0.109)	(0.230)	(0.153)	(0.203)
Female	0.350***	-0.0425	0.358***	0.141	0.146
	(0.133)	(0.0609)	(0.107)	(0.195)	(0.148)
Age	0.000835	-0.00356	0.00188	0.00129	0.00612
	(0.00722)	(0.00542)	(0.00784)	(0.00357)	(0.00590)
Basic	-0.473***	-0.0341	-0.377***	-0.449***	-0.443***
	(0.0834)	(0.0376)	(0.0374)	(0.0699)	(0.0526)
Secondary	-0.618***	-0.282**	-0.373***	-0.829***	-0.627***
	(0.0906)	(0.122)	(0.128)	(0.0552)	(0.121)
Higher	-0.982***	-0.733***	-0.721***	-1.367***	-1.024***
	(0.126)	(0.106)	(0.0431)	(0.0909)	(0.104)
Urban	-0.105	0.344*	0.0298	-0.0142	-0.0248
	(0.0914)	(0.185)	(0.185)	(0.0999)	(0.112)

Baseline results

	(1)	(2)	(3)	(4)	(5)
	Food insecurity	**Shortage**	**Price**	**Income**	**Reduced meals/portions**
Tariff	-0.0496	0.0615**	-0.0246	-0.0382	-0.0329
	(0.0401)	(0.0275)	(0.0390)	(0.0376)	(0.0353)
Constant	1.048***	-1.610***	0.0780	1.111***	-0.136
	(0.401)	(0.525)	(0.453)	(0.166)	(0.529)
Wave dum.	YES	YES	YES	YES	YES
Country dum.	YES	YES	YES	YES	YES
Sector dum.	YES	YES	YES	YES	YES
Observations	3,191	3,191	3,191	3,191	3,191

Which products?

	(1)	(2)	(3)	(4)	(5)
	Food insecurity	**Shortage**	**Price**	**Income**	**Reduced meals/portions**
Animal products	-0.0660*	0.0396	-0.0498*	-0.0488	-0.0450*
	(0.0352)	(0.0303)	(0.0303)	(0.0299)	(0.0243)
Dairy products	-0.0317	0.0446**	-0.0146	-0.0236	-0.0194
	(0.0299)	(0.0204)	(0.0299)	(0.0274)	(0.0271)
Fruit vegetables plants	0.0207	0.0499***	0.0361	0.00876	0.00637
	(0.0266)	(0.0161)	(0.0437)	(0.0103)	(0.0233)
Coffee tea	-0.0146	0.0961***	0.0246	-0.0220	-0.0230
	(0.0264)	(0.0307)	(0.0666)	(0.0252)	(0.0399)
Wave dum.	YES	YES	YES	YES	YES
Country dum.	YES	YES	YES	YES	YES
Sector dum.	YES	YES	YES	YES	YES
Observations	3,191	3,191	3,191	3,191	3,191

Which products?

	(1)	(2)	(3)	(4)	(5)
	Food insecurity	**Shortage**	**Price**	**Income**	**Reduced meals/portions**
Cereals preparations	-0.0297	0.0599***	-0.00680	-0.0248	-0.0225
	(0.0253)	(0.0217)	(0.0351)	(0.0267)	(0.0290)
Oil seeds fats oils	-0.0560	0.0404	-0.0396	-0.0408	-0.0347
	(0.0397)	(0.0278)	(0.0367)	(0.0332)	(0.0307)
Sugars and confectionery	-0.0595***	0.0142	-0.0513***	-0.0428***	-0.0409***
	(0.0194)	(0.0270)	(0.0173)	(0.0128)	(0.0107)
Other agricultural products	0.00862	0.0670***	0.0324	0.00114	0.00145
	(0.0237)	(0.0249)	(0.0492)	(0.0162)	(0.0312)
Fish/fish products	-0.0723	0.104**	-0.0239	-0.0612	-0.0539
	(0.0538)	(0.0423)	(0.0574)	(0.0554)	(0.0510)
Wave dum.	YES	YES	YES	YES	YES
Country dum.	YES	YES	YES	YES	YES
Sector dum.	YES	YES	YES	YES	YES
Observations	3,191	3,191	3,191	3,191	3,191

Vulnerable groups?

	(1)	(2)	(3)	(4)	(5)
	Food insecurity	**Shortage**	**Price**	**Income**	**Reduced meals/portions**
Food tariff*Females	0.0109	-0.00166	0.00142	0.00711	0.00250
	(0.0129)	(0.00465)	(0.00918)	(0.0187)	(0.0121)
Food tariff*Blue collars	0.0540***	0.0174**	0.0376***	0.0301***	0.0240*
	(0.0153)	(0.00834)	(0.00599)	(0.0110)	(0.0127)
Food tariff*Formal	-0.0162***	-0.00469	-0.0134***	-0.0203***	-0.00789**
	(0.00591)	(0.00530)	(0.00511)	(0.00613)	(0.00311)
Wave dum.	YES	YES	YES	YES	YES
Country dum.	YES	YES	YES	YES	YES
Sector dum.	YES	YES	YES	YES	YES
Observations	3,191	3,191	3,191	3,191	3,191

Which tariffs matter for vulnerable groups?

- We examine how the individual characteristics interact with separate agricultural tariffs to determine whether trade barriers imposed on specific goods matter more for potentially vulnerable groups.

- For females:
  - The coefficients of the interaction terms are mostly insignificant, suggesting the absence of a specific effect of most tariffs on food insecurity for women.
  - The overall food security indicator in the case of animal products as well as the price-related indicator for sugars and confectionary have positive and significant coefficients, indicating that tariffs have a worse impact on women's food security.

- As for blue-collar workers and informal labor, the results are more consistent across all dimensions of food insecurity.
  - These results highlight that tariffs have a greater impact on the availability, affordability, and utilization of food for low-skilled and informal labor.
  - Unlike previous results, we can trace a demand-effect of tariffs on food insecurity, suggesting a passthrough effect of tariffs on prices of various food items. This effect appears to weigh more on these two vulnerable categories compared to other population groups.

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Conclusion and policy recommendations

- The paper shows that the effect of restrictive trade policies on seven dimensions of household food insecurity in the 5 MENA countries is ambiguous and rather inconclusive.

- By estimating the effect for the most vulnerable groups (females, blue collars, and informal workers), our findings suggest that women are particularly more likely to be food insecure in general, and that the impact of NTMs on food insecurity is more pronounced for women. Also, trade barriers also increase the vulnerability of hypothetically less vulnerable groups, such as formal workers.

- Finally, we interact government support policies with trade barriers and find that government support policies during the pandemic dampened the effect of NTMs on food insecurity.

Conclusion and policy recommendations

- From a policy perspective, our preliminary results suggest that while trade policy may not largely matter for food insecurity (as per our baseline regressions), stringent trade policies ***may create*** vulnerable categories of individuals.

- This holds for women, but also for formal workers that were more likely to be food secure in the first place. For both categories, the adverse effect of more restrictive trade policies work through the channel of food availability.

Thank you for your attention!