Can trade policy reverse informal employment during COVID-19? An application to the MENA region with a gender dimension

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Preliminary draft

Abstract

This paper investigates whether trade policy could be used to revert back to formality, those workers trapped in informal jobs due to the devastating effects of the pandemic, using the Combined COVID-19 MENA Monitor Household Survey constructed by the Economic Research Forum for 5 MENA countries and 11 sectors. This topic is timely and critical for the MENA region where informal employment is widespread, applied tariffs are still high, and female labor participation is low. Our results show that: first, fewer trade restrictions are associated with an increased probability for the worker to become formal and this effect is more pronounced post-pandemic relatively to before February 2020. Second, fewer trade restrictions are linked to an increase in the probability of becoming formal for blue collars only, with an insignificant effect on white collars. Third, trade policy matters for men only, with an insignificant effect on women: fewer trade restrictions are associated with an increase in the probability of men to become formal.

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1. Introduction

In March 2020, the novel coronavirus (COVID-19) was declared a pandemic by the World Health Organization. Governments around the world ramped up their efforts to contain the spread of the virus by adopting different policy responses such as airport closure, the ban of social gatherings and many activities where social distancing is not possible, as well as partial or total lockdown measures. Those stringent measures resulted in the economic downturn of certain sectors including hotels and restaurants, entertainment and leisure activities, travel. Given that the economy was devastated by the pandemic, many firms went out of business, and many others have dismissed workers. To survive, recently unemployed workers relied on temporary jobs. Therefore, COVID-19 has pushed many in the community out of formal employment and into informality[3]. Furthermore, there is a wide consensus that the pandemic had a sharper effect on women. Indeed, service occupations that suffered during the pandemic have high female employment shares, such as restaurants and hospitality. To that is added the closure of schools and daycare facilities has dramatically increased the need for childcare, especially that reliance on grandparent-provided childcare has been discouraged due to the higher mortality rate for the elderly. Therefore, based on the existing distribution of childcare duties in most families, mothers had to watch their children themselves (Alon et al., 2020).

This paper investigates whether trade policy could be used to revert back to formality, those workers trapped in informal jobs due to the devastating effects of the pandemic. Indeed, there is a wide stream of the literature on the effect of trade policy on informal workers, although the literature is inconclusive in this matter. This topic is timely and critical for the Middle East and North Africa (MENA) region for different reasons: first, informal employment is widespread in the region, accounting for 68% of total employment in 2018 (OECD, 2021). Therefore, the negative effect of the pandemic on formal employment exacerbates the existing problem. Second, applied tariffs in the many MENA countries are still high. To this is added the fact that many countries in the region have changed their trade policy during the pandemic (CNUCED-UNCTAD 2021): some have imposed restrictions on the export of certain essential food products, medical supply products, face masks and medicines, while others have taken temporary measures that facilitates the trade of medical and food products. Third, women remain a huge, untapped reservoir of human potential for countries in the region. Female labor participation is estimated at barely 20% in 2019 (International Labor Organization, ILOSTAT database), and the disadvantageous impact of the pandemic on female formal work tends to bring it further down.

The literature on the association between trade liberalization and informal employment is rather inconclusive. Aleman-Castilla (2006) argue in a heterogeneous firm model that trade

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[3] The International Labour Organization (ILO) defines informal employment as "all remunerative work (i.e. both self-employment and wage employment) that is not registered, regulated or protected by existing legal or regulatory frameworks, as well as non-remunerative work undertaken in an income-producing enterprise."

liberalization may decrease job informality as some firms will find it more profitable to enter the formal sector rather than staying in the informal sector. The least productive informal firms will be forced out of the industry and the most productive formal firms will export to the international markets, thereby inducing aggregate productivity gains through within-industry reallocations. Becker (2014) incorporates informality into a heterogeneous firm trade model and shows that trade liberalization reduces informal employment unambiguously. However, it is noteworthy that job informality could also increase following trade liberalization: indeed, with increased foreign competition, formal establishments may replace full-time workers with part-time labor or subcontract in the informal sector (Goldberg and Pavcnik 2003). Moreover, as many informal jobs are in non-tradable services, those should not be affected by trade reforms.

The empirical literature is also indecisive about the relation between trade liberalization and informal employment. Goldberg and Pavnick (2003) do not find any evidence of a significant relationship between trade liberalization and informality in Brazil. However, their results for Colombia show that job informality increases after trade liberalization, although the authors acknowledge that this finding is directly related to the degree of labor market flexibility: indeed, before the labor market reform, when the cost of firing formal workers was high, an industry-specific tariff reduction was associated with a greater likelihood of becoming informal. After the labor market reform, an industry-specific tariff reduction was associated with a small increase in the likelihood of informality in the industry. In the empirical part of his paper, Aleman-Castilla (2006) assesses the impact of the North American free trade agreement (NAFTA) on informality in Mexico and finds that lower import tariffs are associated with lower informality in tradable industries. Selwaness and Zaki (2015) study the effect of trade reforms on informal jobs in Egypt and find that trade liberalization reduced job informality in Egypt's manufacturing sector. Ben Salem and Zaki (2019) examine the impact of trade reforms on informal and irregular workers in Egypt and find a positive association between tariffs and both informal and irregular employments.

This paper investigates the effect of the trade restrictions on informal jobs in selected MENA countries, taking into consideration workers' occupation and the gender perspective. We use the Combined COVID-19 MENA Monitor Household Survey (CCMMHH) constructed by the Economic Research Forum for 5 countries (Egypt, Morocco, Jordan, Sudan and Tunisia) and 11 sectors and combine it with tariffs data on agriculture and manufacturing, and ad-valorem equivalent tariffs on services. After controlling for the personal characteristics of workers, we examine first how trade barriers exert a differential effect on men vs. women, on blue-collars vs. white collars and second how these barriers led to transitions between formal and informal sectors.

The results show that: first, fewer trade restrictions are associated with an increased probability for the worker to become formal and this effect is more pronounced post-pandemic

relatively to before February 2020. Second, fewer trade restrictions are linked to an increase in the probability of becoming formal for blue collars only, with an insignificant effect on white collars. Third, trade policy matters for men only, with an insignificant effect on women: fewer trade restrictions are associated with an increase in the probability of men to become formal.

The paper is organized as follows. Section 1 presents the motivation and a literature review that sheds the light on the major contribution of the paper. Section 2 depicts some stylized facts on labor market and trade policy on the MENA region. Section 3 describes the methodology and the data. Section 4 is devoted to the discussion of the results and Section 5 concludes.

2. Stylized Facts

Although the MENA region has made some progress in liberalizing trade in goods, it is considered as one of the most restrictive regions in services trade (OECD, 2018). Figure 1 exhibits the average ad-valorem tariff rates for the 5 selected MENA countries included in our dataset. The ad-valorem equivalent tariff for services is included in this average. Morocco appears to be the most restrictive country in the sample with an average tariff rate of 65%, followed by Tunisia, Sudan and Jordan.

Figure 1: Average Tariff Rates for selected MENA countries, in 2020
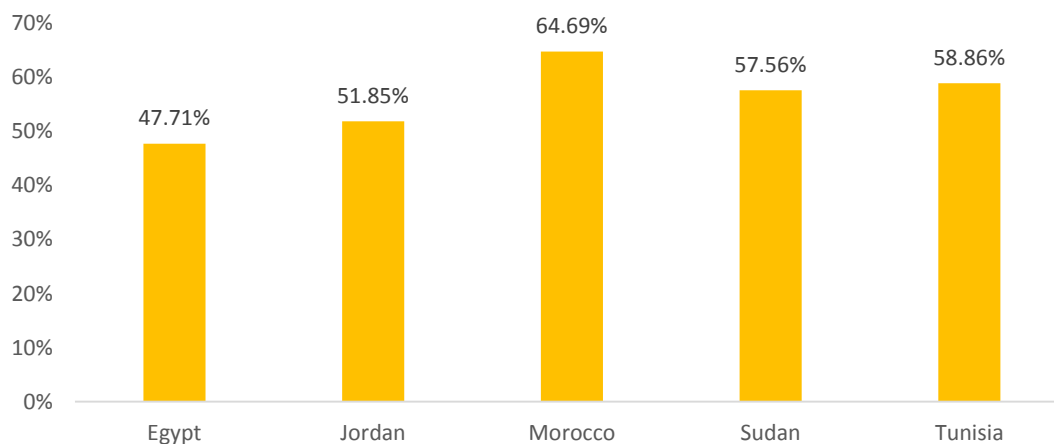
Source: Constructed by the authors. Tariffs data for agriculture and manufacturing sectors come from the World Tariff Profiles (2021). For services, we use the ad valorem equivalents (AVE) of restrictions on cross-border trade in services calculated by Fontagné et al. (2016).
Note: Average tariff rates, simple mean.

Figure 2 shows the average tariff rate by sector. As expected, the lowest tariff is for manufacturing (10.02%), given the intensive efforts of the region to liberalize its trade in manufacturing products. The average tariff by sector masks the fact trade policy in the MENA region varies from a country to another. In agriculture for example, high import tariffs on agricultural

commodities are levied in Egypt and Morocco, while the countries of the Gulf Cooperation council (GCC) impose relatively small duties on imports. Figure 2 shows that the average tariff on agricultural products in the region is 35%. As expected, the highest rates are for services. Those are the ad-valorem equivalent tariffs for services are adopted from Fontagné et al. (2016). The most protected sectors are "Financial activities and real estate", "Information and technology" with an average ad-valorem equivalent tariff of 92% and 84% respectively.

COVID-19 disrupted economic activity across the globe, resulting in a decrease in worldwide trade flows in 2020. Therefore, governments across the globe implemented measures to curb economic activities. We have seen some export restrictions as well as temporary measures that affect trade facilitation. Figure 3 shows that the number of tariff measures imposed by MENA countries during the pandemic is lower than the number non-tariff measures (NTM), with trade facilitating tariff measures exceeding the number of restrictive tariff measures. Trade restrictive NTM are much more numerous than facilitating NTM (30 vs. 2). The facts drawn from Figure 1 are consistent with the facts observed for all countries based on the CNUCED-UNCTAD (2021) database.

Figure 2: Average Tariff Rates by sector for the MENA region, in 2020
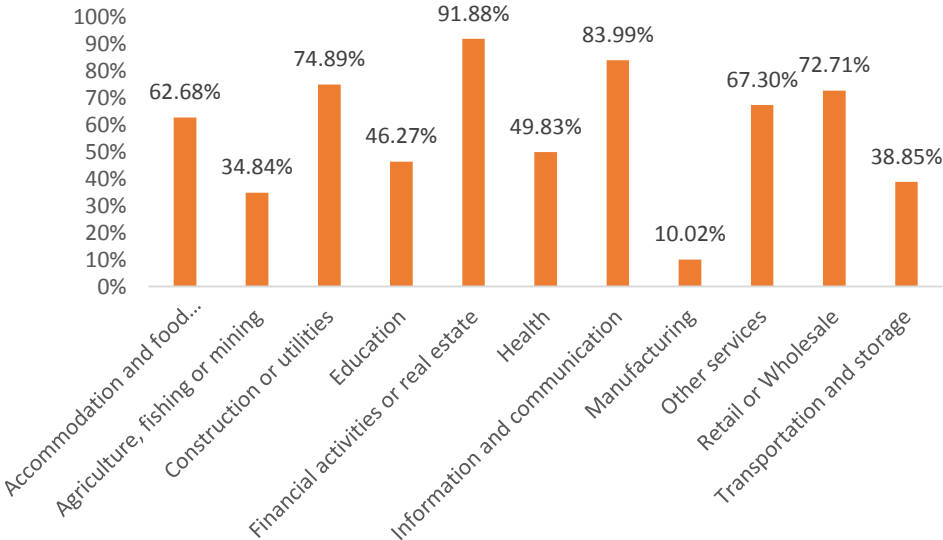
Source: Constructed by the authors. Tariffs data for agriculture and manufacturing sectors come from the World Tariff Profiles (2021). For services, we use the ad valorem equivalents (AVE) of restrictions on cross-border trade in services calculated by Fontagné et al. (2016).
Note: Average tariff rates, simple mean.

Figure 3: COVID 19 Trade Measures in MENA countries
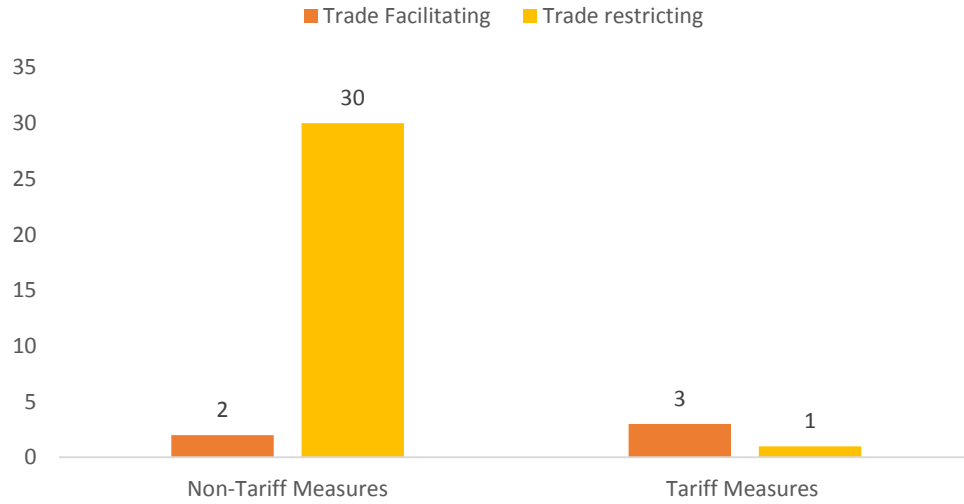
Source: Constructed by the authors from the CNUCED-UNCTAD (2021) database.

58% of the NTM are imposed on medical supplies and protective products such as face masks, sanitizers, and cleaning products, 31% on essential food products, and 3% on potential carriers like meat, live animals, used textiles (Figure 4).

**Figure 4: NTM Product Coverage for MENA countries**
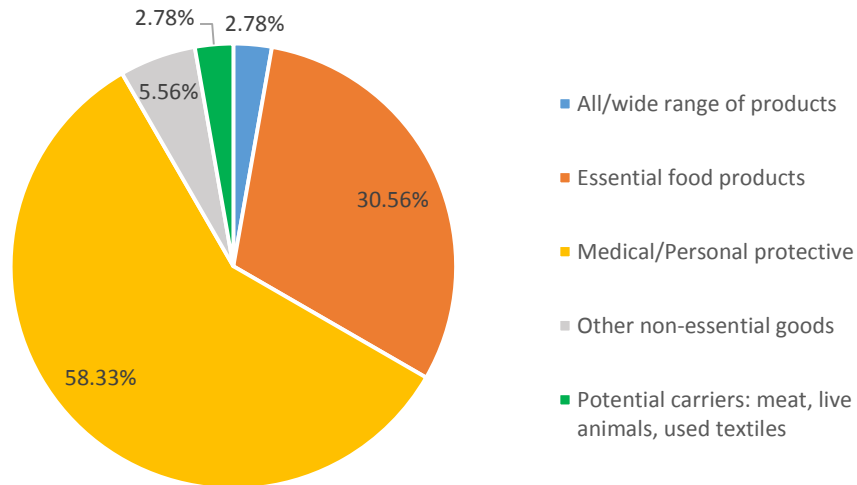
Source: Constructed by the authors from the CNUCED-UNCTAD (2021) database.

Figure 5 shows that the most restrictive trade measures were imposed on potential carriers, as essential food products, as well as non-essential products (mainly to shore up supplies of raw materials required for their manufacturing). The large majority of NTM imposed on

medical/personal protective is also restrictive as expected. The trade facilitating NTM on "All/wide range of products consists" of the postponement of collection of customs duties on imports for a period of 30 days - or against the submission of a bank guarantee, for three months – in Saudi Arabia.

Given that this paper's objective is to assess the effect of trade policy on job formality, we hereby show some stylized facts related to the labor market in the region. Figure 6 shows the share of employment by aggregated sectors. It is noteworthy the services sector absorbs the highest share of the region's labor force (60%), followed by industry (less than 30%), while the share of agriculture is the least (15%). Figure 6 also shows that females work mainly in agriculture and services, while males work in industry and services.

Figure 5: Status of NTMs by Product Type in MENA countries
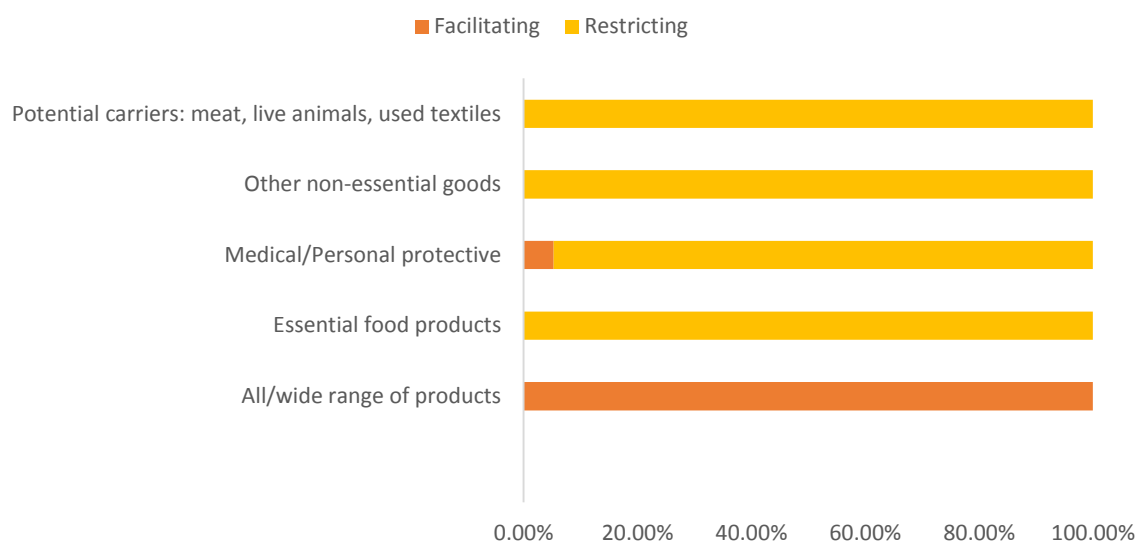
Source: Constructed by the authors from the CNUCED-UNCTAD (2021) database.

Figure 6: Share of employment by aggregated sectors in the MENA region, in 2019
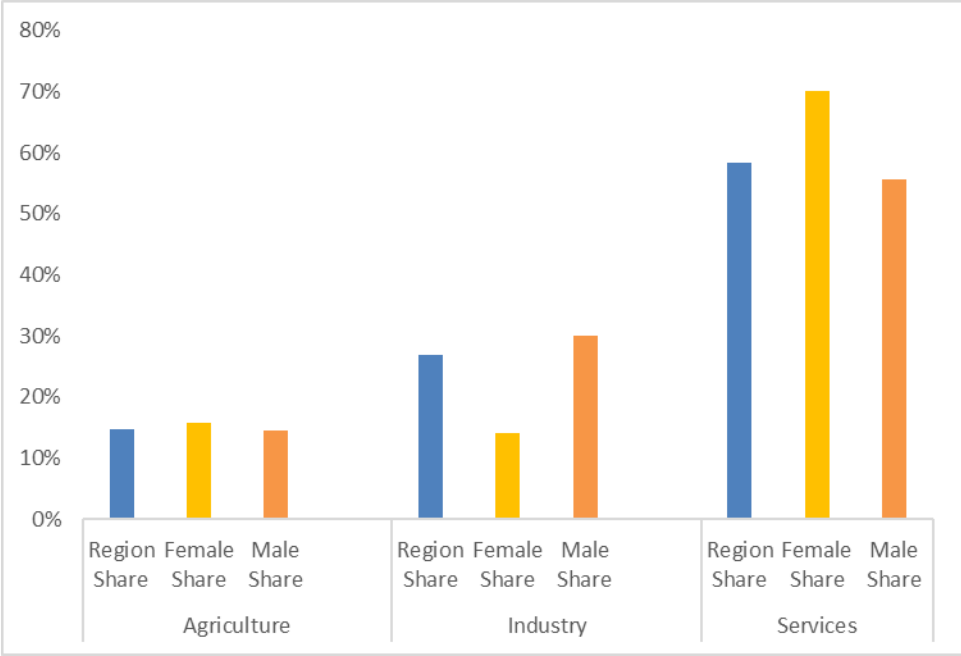
Source: Constructed by the authors from World Development Indicators database, 2021.

Note: Share of male/female employment in agriculture, industry and services is the share in total male/female employment.

All the countries included in our sample show a similar pattern to the one observed in figure 6 for the region, that is the highest share of employment is in the services sector, then in the manufacturing sector, except for Sudan and Morocco where the agricultural sector absorbs more workers than manufacturing.

Figure 7: Share of employment by sectors in selected MENA countries, in 2019
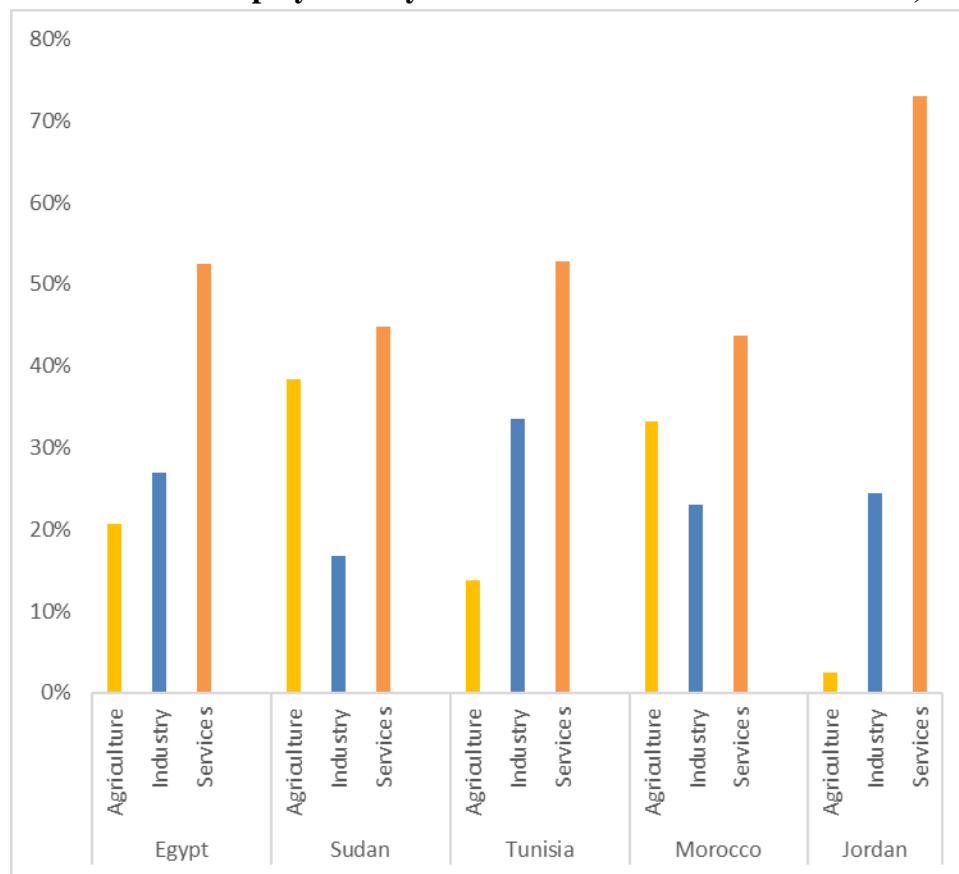
Source: Constructed by the authors from World Development Indicators database, 2021.

Figure 8 shows that Sudan has the highest share of informal employment in the sample (69%), followed by Egypt and Morocco (59% and 58% respectively). Jordan exhibits the lowest share of informal employment (35%).

**Figure 8: Share of informal workers in total employment,
for selected MENA countries in 2021**

Source: Constructed by the authors from the CCMMHH survey.

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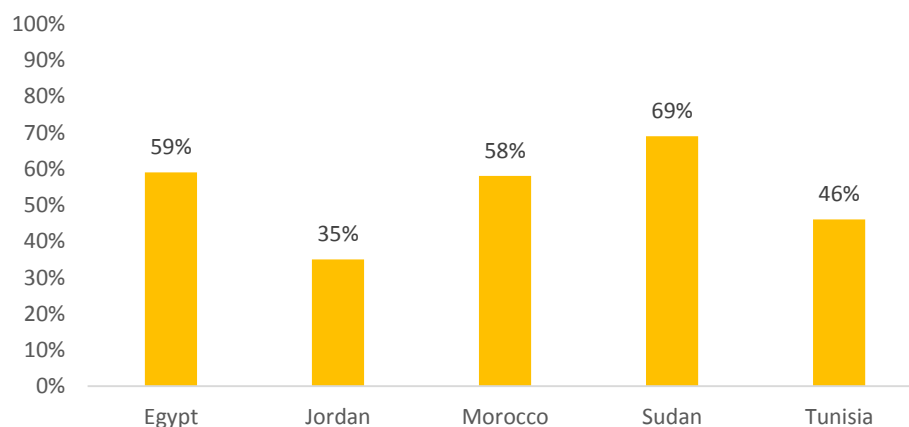
By sector, the share of informal employment is the highest in agriculture (72%), manufacturing (70%) and other services (69%). The least share of informal workers is in "Information and communication", "Transportation and storage", and "Accommodation and food services).

Figure 9: Share of informal workers in total employment, by sector in 2021
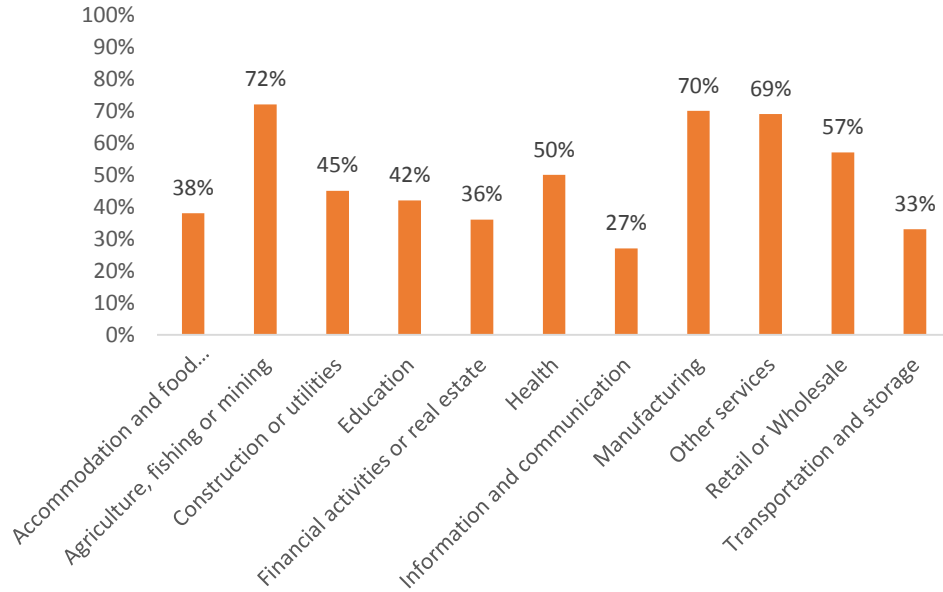
Source: Constructed by the authors from the CCMMHH survey.

3. Methodology and Data

To understand the impact of trade effect on labor market informality, we follow an adapted version of Goldberg and Pavnick (2003), Selwaness and Zaki (2015) and Ben Salem and Zaki (2019) by estimating the following model:

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

The dependent variable is 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 working informally, and 0 otherwise. It is important to note that an informal worker has no contract and/or is not covered by social security. The explanatory variables consist of the individual characteristics X_{ijst}, which include gender (a dummy for female gender), age, educational level (four dummies for illiterate, basic, secondary and higher education) and skill (controlled for through a dummy variable that takes the value of 1 if the individual is a blue collar and zero otherwise). We also control for the geographical location with a dummy variable that takes the value of 1 if the individual is working in an urban region and zero otherwise. Household characteristics H_{ijst} are mainly captured by the household size. 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 non-tariff measures. Country dummies D_j are added to control for the unobserved country-specific characteristics. Moreover, industry I_s and wave wt are added to control for the unobserved industry and wave-specific characteristics. v_{ijs} is the discrepancy term.

This regression is extended in two ways. First, we run some regressions by gender and by skill in order to see how trade barriers affect different categories given that blue collars and women are more likely to be affected. Second, to examine how individuals change the sector where they work, we run a multinomial logit where examine the probability of moving from the informal to the formal sector and vice versa.

We plan to extend the analysis by running a two stage estimation where, in the first step, we regress an equation similar to (1) without trade barriers but with industry dummies. In the second step, the industry coefficients α4 that are retrieved from this first step are regressed on the trade barriers. These coefficients are obtained by filtering out the effects of observable worker characteristics to ensure that they indicate the variation in the probability of informality due to the workers' affiliation to a given industry. Therefore, regressing informality differentials on tariffs facilitates explanation on the change in informality in each industry by trade policy.

We use the Combined COVID-19 MENA Monitor Household Survey (CCMMHH) constructed by the Economic Research Forum for 5 countries (Egypt, Morocco, Jordan, Sudan and Tunisia) and 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). The dataset covers 5 waves of COVID-19: Nov-2020, Feb- 2021, Apr-2021, Jun-2021, Aug 2021, and counts 34,219 observations.

Tariffs data for agriculture and manufacturing sectors come from the World Tariff Profiles (2021) that provide comprehensive information on the tariffs and non-tariff measures imposed by over 170 countries and customs territories. It is a joint publication of the WTO, the International Trade Centre and the United Nations Conference on Trade and Development (UNCTAD). For services, we use the ad valorem equivalents (AVE) of restrictions on cross-border trade in services calculated by Fontagné et al. (2016) for 118 countries and 9 sectors, using the GTAP database of trade in services for 2011. The missing AVE for Sudan is replaced by the MENA region's average.

4. Results

Table 1 shows that the variables have the expected signs: being a blue collar has a negative effect on the probability of having a formal job while age and education appears to have a positive impact on job formality. The negative sign of the variable *Female* could be explained by the fact that the sectors included in the analysis are intensive in male workers. Our variable of interest *Tariff* has an expected negative sign, implying that lower trade restrictions could be associated with an increase in job formality. This result is in line with the results of Aleman-Castilla (2006) for Mexico, Selwaness and Zaki (2015) and Ben Salem and Zaki (2019) for Egypt. Interestingly the absolute value of the coefficients increases post COVID-19, implying that the negative effect of being a female, a blue collar as well as the negative effect of tariff on the probability of formal jobs increases after the pandemic. In addition, the positive effect of education on job formality increases after February 2020. Surprisingly, the coefficient of non-tariff measures *Ln(NTM)* is positive before February 2020, then becomes insignificant post-pandemic. This surprising results could be linked to the way the NTM variable was constructed to deal with data limitations.

Table 2 shows the effect of trade policy on formal jobs by occupation. Most of the variables have the same signs as before for both sets of regressions: blue collars and while collars. The gender variable is mostly no longer significant, and the effect of the tariff on the probability of having a formal job for white collars is not significant, suggesting that the effect of trade policy on job formality matters expectedly more for blue collars.

Table 1: Baseline Regression

	Before Formal	After Formal
HH size	-0.00690	-0.000900
	(0.0115)	(0.0203)
Blue Collar	-0.269***	-0.550***
	(0.0620)	(0.114)
Female	-0.129**	-0.174*
	(0.0604)	(0.104)
Age	0.0281***	0.0264***
	(0.00230)	(0.00433)
Basic educ.	0.285***	0.358***
	(0.0688)	(0.120)
Secon. Educ.	0.444***	0.669***
	(0.0632)	(0.116)
Higher Educ.	0.706***	0.955***
	(0.0748)	(0.143)
Urban	0.00447	0.0265
	(0.0543)	(0.0973)
Ln(NTM)	0.260**	0.116
	(0.129)	(0.249)
Tariff	-0.00361***	-0.00396*
	(0.00123)	(0.00235)
Constant	-1.510***	-0.668*
	(0.205)	(0.379)
Wave dum.	YES	YES
Country dum.	YES	YES
Sec. dum.	YES	YES
Observations	11,577	3,191

Notes: (i) Standard errors in parentheses

(ii) *** p<0.01, ** p<0.05, * p<0.1

(iii) Weights are used in all regressions.

Table 2: Effect of Trade Policy on Formality – By Occupation

	Blue		White	
	Before	After	Before	After
	Formal	Formal	Formal	Formal
HH size	-0.000672	0.00162	-0.0119	-0.00216
	(0.0200)	(0.0334)	(0.0137)	(0.0252)
Female	-0.0549	-0.145	-0.160**	-0.191
	(0.112)	(0.195)	(0.0703)	(0.129)
Age	0.0269***	0.0363***	0.0303***	0.0261***
	(0.00402)	(0.00727)	(0.00273)	(0.00517)
Basic educ.	0.288***	0.587***	0.341***	0.290*
	(0.101)	(0.162)	(0.0913)	(0.174)
Secon. Educ.	0.0726	0.762***	0.610***	0.616***
	(0.0911)	(0.178)	(0.0861)	(0.160)
Higher Educ.	0.659***	1.464***	0.763***	0.814***
	(0.145)	(0.309)	(0.0916)	(0.177)
Urban	0.0384	0.0200	0.00638	0.0905
	(0.0858)	(0.151)	(0.0686)	(0.127)
Ln(NTM)	0.574***	0.341	0.0635	-0.459
	(0.189)	(0.369)	(0.213)	(0.363)
Tariff	-0.0116***	-0.0139***	0.000226	0.000649
	(0.00218)	(0.00405)	(0.00154)	(0.00315)
Constant	-2.025***	-2.014***	-1.557***	-0.337
	(0.336)	(0.669)	(0.389)	(0.571)
Wave dum.	YES	YES	YES	YES
Country dum.	YES	YES	YES	YES
Sec. dum.	YES	YES	YES	YES
Observations	3,040	900	8,537	2,289

Notes: (i) Standard errors in parentheses

(ii) *** p<0.01, ** p<0.05, * p<0.1

(iii) Weights are used in all regressions.

Table 3 investigates the effect on job formality from a gender perspective. Most of the variables have the same signs as in the baseline regressions for both males and females. Interestingly, the coefficient of *Blue Collar* was insignificant for females before February 2020, and becomes negative and significant post-COVID-19. In addition, the absolute value of the coefficient is slightly higher for females than for males post-COVID-19, suggesting that being a blue collar has a higher negative effect on the probability of a female to have a formal job, relatively to her male counterpart. Another noteworthy result is that the variable *Tariff* is only significant for males. Therefore, a decrease in trade barriers is associated with an increase in the probability of formal jobs for males, and not for females. This result could be linked to the fact that the sectors included in the analysis are intensive in male workers.

Table 3: Effect of Trade Policy on Formality – By Gender

	Females		Males	
	Before	After	Before	After
	Formal	Formal	Formal	Formal
HH size	0.0174	-0.0137	-0.0113	-0.00321
	(0.0250)	(0.0465)	(0.0126)	(0.0215)
Blue Collar	-0.0645	-0.600**	-0.320***	-0.566***
	(0.148)	(0.281)	(0.0679)	(0.126)
Age	0.0375***	0.0260***	0.0263***	0.0275***
	(0.00521)	(0.00866)	(0.00251)	(0.00496)
Basic educ.	0.221	0.615*	0.311***	0.300**
	(0.196)	(0.338)	(0.0716)	(0.128)
Secon. Educ.	0.539***	1.466***	0.426***	0.563***
	(0.178)	(0.365)	(0.0666)	(0.118)
Higher Educ.	0.977***	1.947***	0.676***	0.843***
	(0.195)	(0.399)	(0.0791)	(0.150)
Urban	0.105	0.115	-0.0244	0.00807
	(0.120)	(0.232)	(0.0592)	(0.108)
Ln(NTM)	0.458	1.592***	0.285**	0.0502
	(0.290)	(0.472)	(0.141)	(0.282)
Tariff	0.00325	0.00503	-0.00529***	-0.00533**
	(0.00299)	(0.00783)	(0.00134)	(0.00254)
Constant	-2.504***	-3.050***	-1.432***	-0.580
	(0.484)	(0.984)	(0.223)	(0.415)
Wave dum.	YES	YES	YES	YES
Country dum.	YES	YES	YES	YES
Sec. dum.	YES	YES	YES	YES
Observations	2,576	661	9,001	2,530

Notes: (i) Standard errors in parentheses.

(ii) *** p<0.01, ** p<0.05, * p<0.1

(iii) Weights are used in all regressions.

Table 4 accounts for the transition between formal and informal jobs with a gender perspective. The reference category is for those who were informal and remained in the informal sector. The second column investigates the probability of a formal worker to stay in the formal sector. Age and education have a positive and significant effect on the probability of the formal worker to stay formal, while being a blue collar and *Tariff* have a significant negative effect on the probability of staying in formal jobs. This result is consistent with our previous findings that fewer trade restrictions are associated with an increase in the probability of having a formal job. The third column shows the results for the probability of the informal worker to move to a formal job. The variables with a significant sign are *Blue Collar*, *Ln(NTM)* and the education variables. Indeed, education is positively associated to the probability of becoming formal while the blue collars variable has a negative and significant sign suggesting that blue collars are more likely to stay in the informal sector. Our variable of interest, non-tariff measures, has a negative and significant effect on the probability of the worker to move to a formal job.

The fourth column displays the results for the probability of a worker to move from a formal to an informal job. Two counter-intuitive results emerge: first, education is positively associated with the probability of the worker to move from the formal to the informal job. Second, tariffs have a negative and significant effect on the probability of moving from formal to informal.

Table 4: Effect of Trade Policy on Transition

Before	Formal	Informal	Formal
After	Formal	Formal	Informal
Female	-0.233	-0.0932	0.422
	(0.212)	(0.266)	(0.296)
Age	0.0656***	0.00332	0.0247*
	(0.00913)	(0.0120)	(0.0137)
HH size	-0.0129	0.0310	-0.0160
	(0.0415)	(0.0517)	(0.0597)
Blue Collar	-0.928***	-0.638**	0.155
	(0.224)	(0.322)	(0.247)
Basic educ.	0.924***	0.425	0.994**
	(0.228)	(0.324)	(0.401)
Secon. Educ.	1.397***	1.230***	1.033***
	(0.229)	(0.303)	(0.378)
Higher Educ.	2.266***	1.554***	1.617***
	(0.292)	(0.342)	(0.432)
Urban	0.105	-0.639**	-0.435
	(0.185)	(0.283)	(0.283)
Ln(NTM)	0.606	-1.400*	-0.621
	(0.502)	(0.799)	(0.965)
Tariff	-0.0156***	-0.00914	-0.0309***
	(0.00450)	(0.00644)	(0.00785)
Constant	-2.233***	-0.924	-3.153***
	(0.655)	(0.973)	(0.977)
Wave dum.	YES	YES	YES
Country dum.	YES	YES	YES
Sec. dum.	YES	YES	YES
Observations	3,191	3,191	3,191

Notes: (i) Standard errors in parentheses
(ii) *** p<0.01, ** p<0.05, * p<0.1
(iii) Weights are used in all regressions.
(iv) Reference category are those who were informal and remained in the informal sector.

Our results are summarized in the following three points: first, fewer trade restrictions are associated with an increased probability for the worker to become formal and this effect is more pronounced post-pandemic relatively to before February 2020. Second, fewer trade restrictions are linked to an increase in the probability of becoming formal for blue collars only, with an insignificant effect on white collars. Third, trade policy matters for men only, with an insignificant effect on women: fewer trade restrictions are associated with an increase in the probability of men to become formal.

5. Conclusion and Policy Implications

This paper investigates whether trade policy could be used to revert back to formality, those workers trapped in informal jobs due to the devastating effects of the pandemic. Indeed, there is a wide stream of the literature on the effect of trade policy on informal workers, although the literature is inconclusive in this matter. This topic is timely and critical for the MENA region for different reasons: first, informal employment is widespread in the region, and the pandemic has exacerbated the existing problem. Second, applied tariffs in the many MENA countries are still high. To this, is added the fact that many countries in the region have changed their trade policy during the pandemic. Third, female labor participation in the MENA region is low, and the disadvantageous impact of the pandemic on female formal work tends to bring it further down.

We use the Combined COVID-19 MENA Monitor Household Survey (CCMMHH) constructed by the Economic Research Forum for 5 countries (Egypt, Morocco, Jordan, Sudan and Tunisia) and 11 sectors and combine it with tariffs data on agriculture and manufacturing, and ad-valorem equivalent tariffs on services. Our results are summarized in the following three points: first, fewer trade restrictions are associated with an increased probability for the worker to become formal and this effect is more pronounced post-pandemic relatively to before February 2020. Second, fewer trade restrictions are linked to an increase in the probability of becoming formal for blue collars only, with an insignificant effect on white collars. Third, trade policy matters for men only, with an insignificant effect on women: fewer trade restrictions are associated with an increase in the probability of men to become formal. We would also like to acknowledge that our results could be further improved by refining the construction of the non-tariff measure variable, that will be the subject of further research.

The policy implications of our results are important. Indeed, as trade liberalization could lead to a reduction in informal employment, it is crucial to consider incorporating the informal sector in trade policy decisions, especially that all MENA countries strive to rise from the devastating effects of COVID-19 on the economy. As the pandemic has pushed many workers from formal employment to informality, we believe this trend could be reversed if governments in the MENA region establish a sound macroeconomic framework based on trade liberalization with incentives that boost firms' productivity, such as tax exemptions, better investment climate, and simplified procedures. As firms expand, the demand for formal and skilled workers increases after trade liberalization.

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