Short-run effects of COVID-19 pandemic on the labor market dynamics in Mexico

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Background

Ministry of Health (SS) officials implemented the National Journey of Safe Distance (JNSD), a non-pharmaceutical intervention (NPI) to mitigate the COVID-19 epidemic in the country in mid-March 202. The NPI caused a massive loss of 12.5 million jobs between March and April 2020.

Objective:
Estimate the short-term effect of JNSD on the labor market dynamics, focusing on the insertion and exit rates of formal and informal workers.

Method

We developed multistate models to estimate transition rates between labor market states before the national lockdown using data from 03/2019 to 03/2020 and data from 4/2020 to 6/2020 for the JNSD period.

➤ We fitted the multistate models using maximum likelihood estimation, assuming time to transition follows an exponential distribution with a constant hazard.

➤ We used data from National Occupation and Employment Survey (ENOE) and the Telephone Occupation and Employment Survey (ETOE).

The COVID-19 national lockdown effect is estimated as a hazard ratio (HR) on the transition rates among labor market states controlling for sex, age, and education groups.

Empirical Strategy

➤ The MSM has four states: formal employment(FE), informal employment (IE), unemployment (UN), and out of labor force (OLF).

➤ We assume that the mobility observed among labor states is generated by homogeneous Markov processes in continuous time.
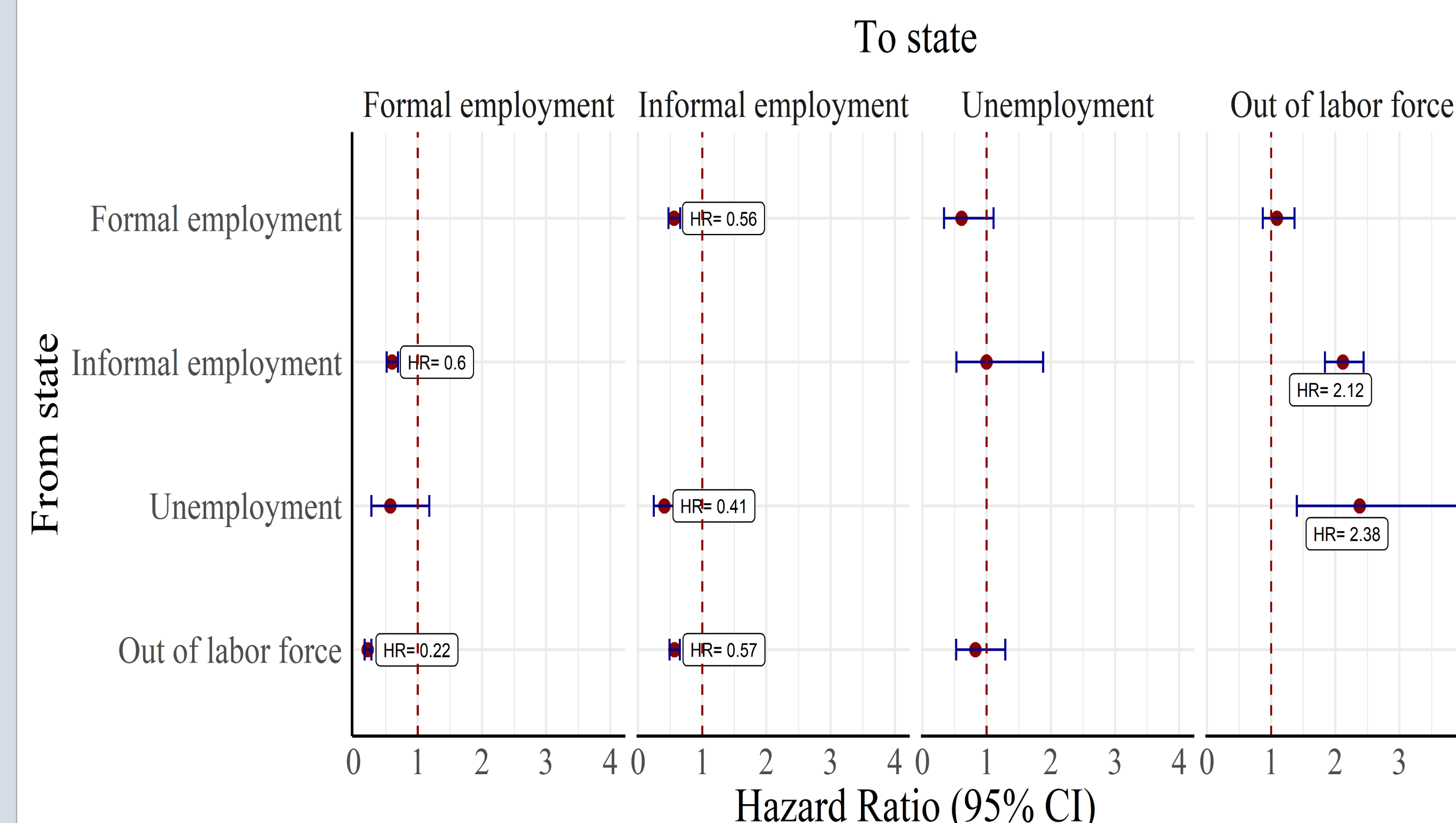

Fig 1. Labor Market Multistate Model
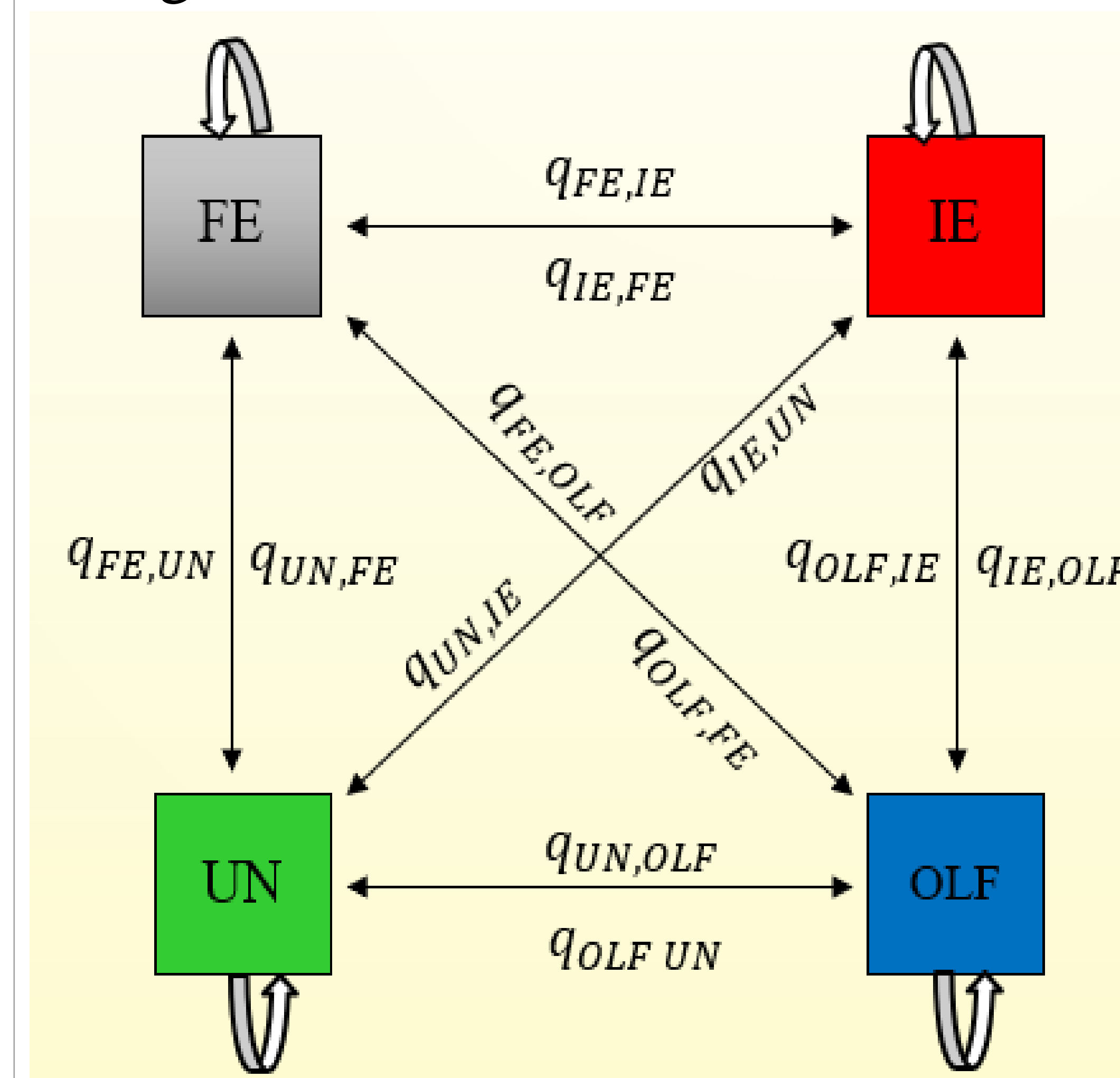
Note: Arrows indicate possible transitions. The acronyms are formal employment (FE), informal employment (IE): unemployment (UN), and Out of Labor Force (OLF). *Source:* own elaboration.

Results

Fig. 2 Short-run effect of JNSD on transition rates among labor market states

➤ Transition rates from IE and UN to OLF are 2.12 (HR 95% CI, 1.83-2.43) and 2.38 (HR 95% CI, 1.39-4.04) higher in JNSD than the one-year pre-JNSD period, respectively.
➤ FE to UN and OLF transitions are 0.60 (HR 95% CI, 0.33-1.10) and 1.08 (HR 95% CI, 0.86-1.34).

Fig. 3 Hazard ratio for transition rates among employment states by sex, age, and education
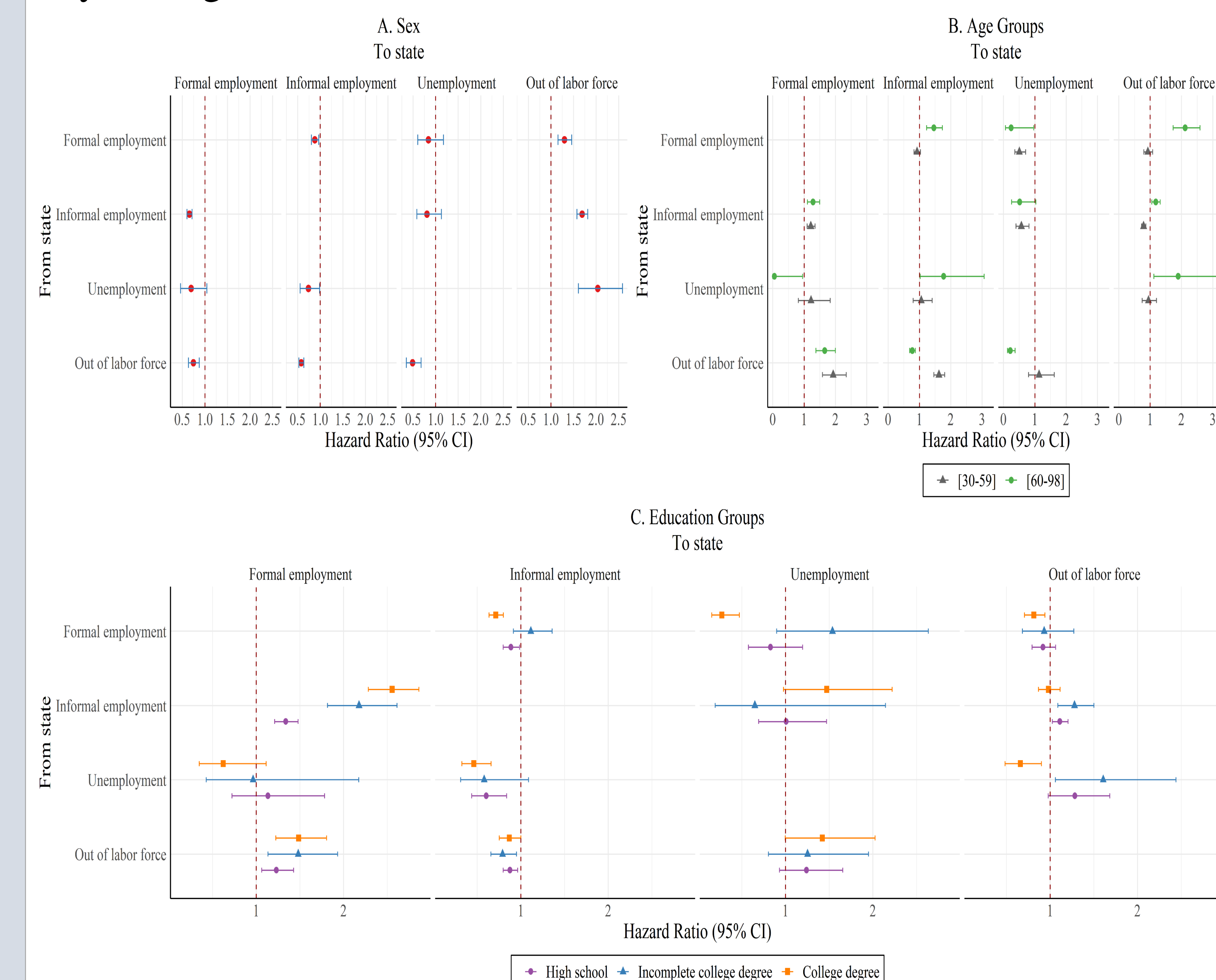
➤ Women had 1.30 (HR 95% CI: 1.16-1.45), 1.69 (HR 95% CI: 1.57-1.81), and 2.03 (HR 95% CI: 1.60-2.58) higher rates in transitioning from FE, IF, and UN to OLF, respectively, than men.
➤ Individuals older than 59 years compared with 15–29-year-olds had 2.11 (HR 95% CI: 1.73-2.59), 1.18 (HR 95% CI: 1.05-1.31), 1.90 (HR 95% CI: 1.11-3.21) higher transition rates from FE, IE, and UN to OLF, respectively.
➤ Those with college education group had 0.82 (HR 95% CI: 0.70-0.94), 0.98 (HR 95 % CI: 0.87-1.11), and 0.66 (HR 95% CI: 0.48-0.90) times the rate of transitioning from FE, IE, UN to OLF, compared with low education group of workers.

Conclusion:
We found that informal workers were more vulnerable to leaving the active labor market than formal workers during JNSD. Women, individuals with only primary education, 15–29-year-olds, and those older than 65 were more likely to transit to OLF state than men, individuals with a college education, and 30-59-year-olds.