Lucky Women in Unlucky Cohorts:
Gender Differences in the Effects of Initial Labor Market Conditions in Latin America

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Motivation

- Evidence from developed countries suggests that bad initial conditions have lasting negative effects on workers' labor outcomes (Oreopoulos et al., 2012; Schwandt & von Watcher, 2019; von Watcher, 2020):
  - Those who enter the labor market in high unemployment periods face lower earnings and wages in the long-term than those who enter when unemployment rates are lower.
- These results may not be fully extrapolated to developing countries where FLFP is low and many women act as secondary workers in bad times:
  - An economic downturn may act as an additional incentive for young women in the typical age of the school-job transition to enter the labor market to help their families.
  - This unexpected entry may have long lasting positive consequences in the labor market attachment and earning perspectives of young women.
  - The negative shock might end up being beneficial to these "lucky women" in "unlucky cohorts".

This paper

- We assess gender differences in the effects of adverse conditions at labor market entry in Latin America:
  - Developing region characterized by high macroeconomic volatility and frequent downturns; low FLFP, especially among the unskilled; abundant evidence of the added-worker effect (Skoufias & Parker, 2004, 2006; Paz, 2009; Martinoty, 2015; Serrano et al., 2019).
  - Extensive literature on scarring effects for developed countries but very limited for developing countries (Cruces et al., 2012; Kuchibhotla et al., 2020).
  - We contribute with a novel result: there are groups (young women) whose labor outcomes might benefit in the longer run from worse initial labor market conditions.
- We analyze the effects of facing high unemployment rates at the moment of *presumed* labor market entry on:
  - Workers' labor outcomes.
  - The role of women within the household.
  - The perceptions about gender roles in society.

  ... ten years after entry.

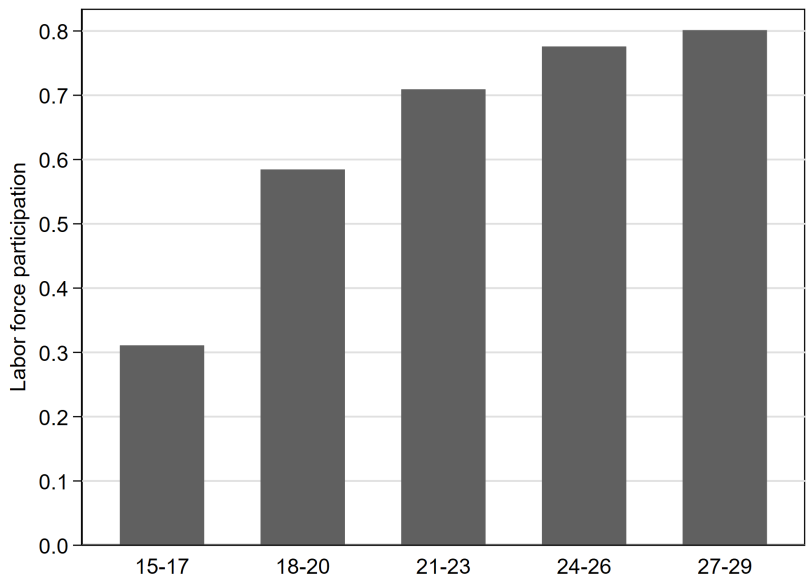
Data and Variables

- Outcome variables during *adulthood*:
  - **Labor market outcomes:** LFP, employment and unemployment rates, weekly hours of work, hourly wages and monthly labor incomes.
    - Cross-section national household surveys from 15 LAC countries over 2001-2017 (SEDLAC database). HH surveys Stats
  - **Role of women within the household:** household headship, share of HH labor income earned by the woman. Source: national household surveys from 15 LAC countries over 2001-2017 (SEDLAC database).
  - **Societal perceptions about gender roles:**
    - World Value Survey (11 countries and 8 years of data within the period 2001-2017) & Latinobarometro (11 countries and 6 years of data).
    - "If a woman earns more money than her husband, it's almost certain to cause problems", "When a mother works for pay, the children suffer".
- Explanatory variable: National unemployment rate *at labor market entry*.
  - World Development Indicators and national household surveys during the period 1992-2007. Unemployment

Definition of Labor Market Entry

- We use age instead of the actual graduation date to proxy the year of entry into the labor market, as in Arellano-Bover (2020).
- We focus on ages 18-20 to capture the education-work transition years because 18 is the theoretical age for completing secondary school, which is compulsory in most of the countries of the region.

Labor Force Participation by age groups



Source: SEDLAC database.
Notes: Average across 15 countries over 2001-2017.

Definition of Adulthood: Construction of synthetic cohorts

- We focus on cohorts born between 1974 and 1987 (14 cohorts in each country).
- We observe these cohorts in the period 2001-2017, when they are between 27-30 years old.
- Our goal is to assess whether the outcomes at ages 27-30 depend on the labor market conditions they faced at ages 18-20.

	Year of birth													
Survey years	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
2001	**27**	26	25	24	23	22	21	20	19	18	17	16	15	14
2002	**28**	**27**	26	25	24	23	22	21	20	19	18	17	16	15
2003	**29**	**28**	**27**	26	25	24	23	22	21	20	19	18	17	16
2004	**30**	**29**	**28**	**27**	26	25	24	23	22	21	20	19	18	17
2005	31	**30**	**29**	**28**	**27**	26	25	24	23	22	21	20	19	18
2006	32	31	**30**	**29**	**28**	**27**	26	25	24	23	22	21	20	19
2007	33	32	31	**30**	**29**	**28**	**27**	26	25	24	23	22	21	20
2008	34	33	32	31	**30**	**29**	**28**	**27**	26	25	24	23	22	21
2009	35	34	33	32	31	**30**	**29**	**28**	**27**	26	25	24	23	22
2010	36	35	34	33	32	31	**30**	**29**	**28**	**27**	26	25	24	23
2011	37	36	35	34	33	32	31	**30**	**29**	**28**	**27**	26	25	24
2012	38	37	36	35	34	33	32	31	**30**	**29**	**28**	**27**	26	25
2013	39	38	37	36	35	34	33	32	31	**30**	**29**	**28**	**27**	26
2014	40	39	38	37	36	35	34	33	32	31	**30**	**29**	**28**	**27**
2015	41	40	39	38	37	36	35	34	33	32	31	**30**	**29**	**28**
2016	42	41	40	39	38	37	36	35	34	33	32	31	**30**	**29**
2017	43	42	41	40	39	38	37	36	35	34	33	32	31	**30**
18 years old	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
20 years old	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007

Empirical Strategy

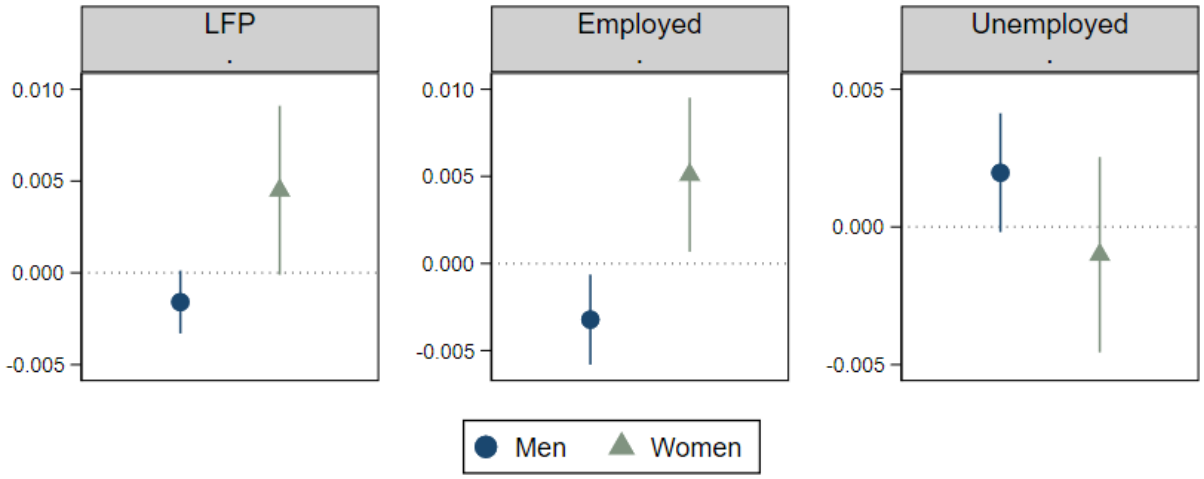
- We follow the literature and work at the group level (von Watcher, 2020): our units of analysis are cohort-calendar year-gender-country cells, and all the variables are defined as means within each cell.
- Model with fixed effects by country and by years estimated by OLS for men and women separately pooling data for 15 countries:

$$y_{gct} = \alpha + \beta U_{gc}^{18-20} + \delta_a + \lambda_c + \theta_t + \epsilon_{gct}. \quad (1)$$

  - y_{gct} is the outcome variable for cohort (generation) g in country c, observed at calendar year t.
  - U_{gc}^{18-20} is the *standardized* unemployment rate that cohort g in country c faced between ages 18-20 (Arellano-Bover, 2020).
  - Age-in-years dummies (δ_a), country fixed effects (λ_c), and calendar year fixed effects (θ_t).
  - Individuals may react to labor market conditions by advancing or delaying labor market entry (endogeneity): We use the school-entrance age and school duration to proxy date of labor market entry. The composition of our cohorts is likely exogenous since it depends only in the year of birth.

Migration

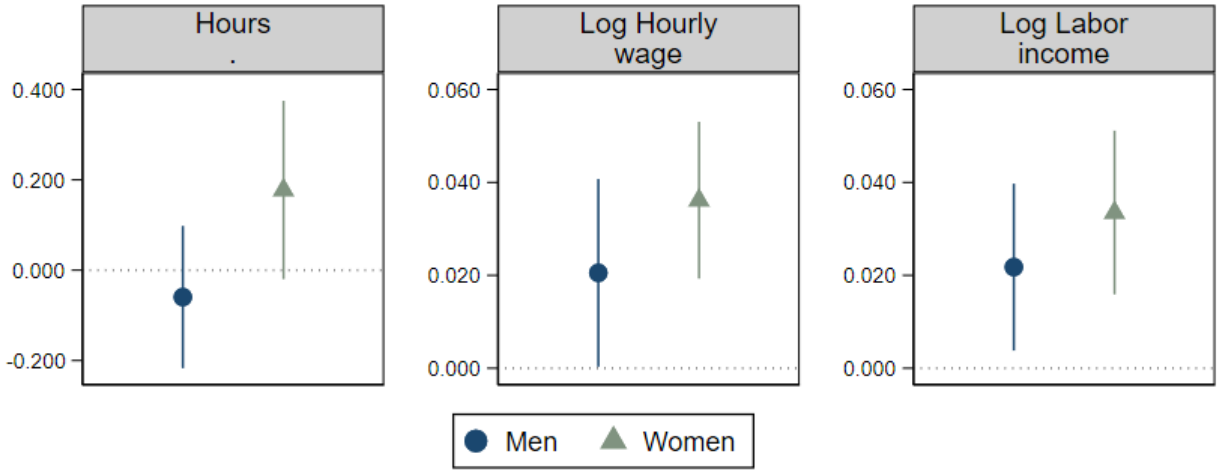
Initial Labor Market Conditions and Labor Outcomes



Notes: The figures show coefficients β and the corresponding 90% confidence intervals from estimating equation (1) for cohorts of women and men, separately. Standard errors clustered at the country*cohort level. The point estimates are reported in Panel A of Table A.4 in the online Appendix. For each gender, the sample is a panel of 14 cohorts in 15 countries observed over the period 2001-2017. These cohorts were born between 1974 and 1987, they possibly entered the labor market between 1992 and 2007 at ages 18-20, and they are between 27 and 30 years old by the time we observe their outcomes. The values of the three first outcome variables (LFP, employment and unemployment rates) range from 0 to 1.

- Men from unlucky cohorts (who faced higher unemployment rates at ages 18-20) suffer a negative effect on employment at ages 27-30 (0.3pp).
- In contrast, women from those unlucky cohorts have more chances of being employed ten years after their potential entry into the labor market (0.5pp).
- **Such gender differences do not appear in previous studies for developed countries.**

Initial Labor Market Conditions and Labor Outcomes



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- Higher earnings increase for women than for men, although the difference is not stat. signif.
- Increase for men explained by a composition effect. For women we speculate this could be connected to changes in social perceptions about the role of women at home and in society

Possible Mechanism: Added-Worker Effect

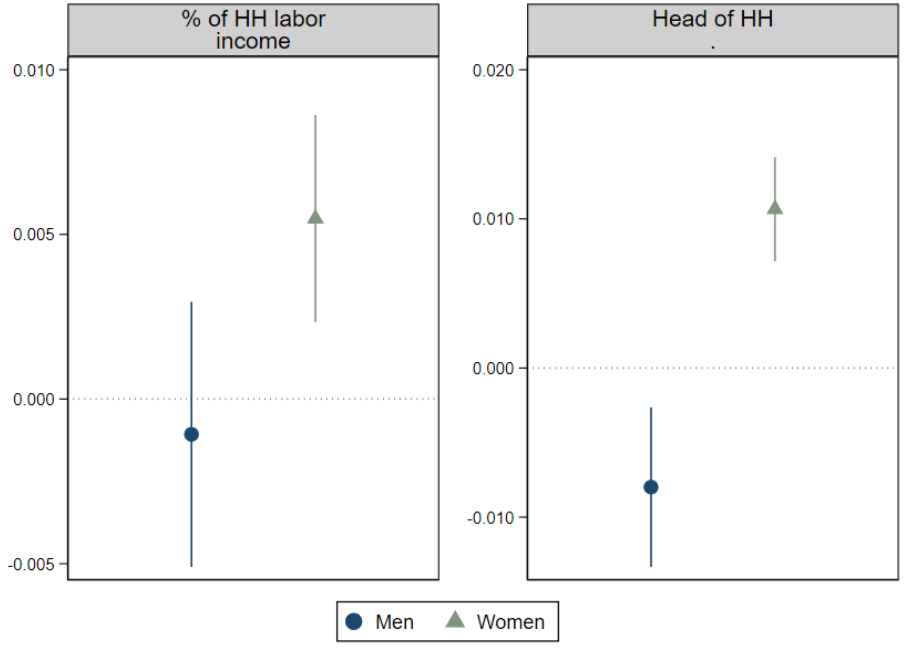
- The added-worker effect (Lundberg, 1985) could help rationalize these findings: Young women entered the labor market when they faced the unemployment shock but they were also likely to stay even when the economy recovered.

	Youth LFP							
	18-20		20-22		22-24		24-26	
	Women	Men	Women	Men	Women	Men	Women	Men
Unemployment rate at 18-20 (std)	0.005 (0.006)	-0.009 (0.005)*	0.010 (0.005)**	-0.003 (0.003)	0.004 (0.005)	-0.002 (0.003)	0.012 (0.004)***	-0.001 (0.002)
Observations	262	262	270	270	273	273	275	275
R-squared	0.852	0.886	0.850	0.856	0.870	0.828	0.872	0.729
Country and year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table reports OLS estimates of equation (2) based on a sample consisting of country-year observations for Argentina, Bolivia, Brazil, Chile, Costa Rica, Honduras, Mexico, and Uruguay over the period 1992-2007. Standard errors clustered at the country*cohort level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

- Whereas the LFP of young men falls or remains unaltered when national unemployment increases, that of young women stays unchanged or even increases, which is consistent with the added-worker effect.
- **Female cohorts that enter the labor market at 18-20 due to bad economic conditions remain in the market over time.**

Initial Labor Market Conditions and the Role of Women within Households



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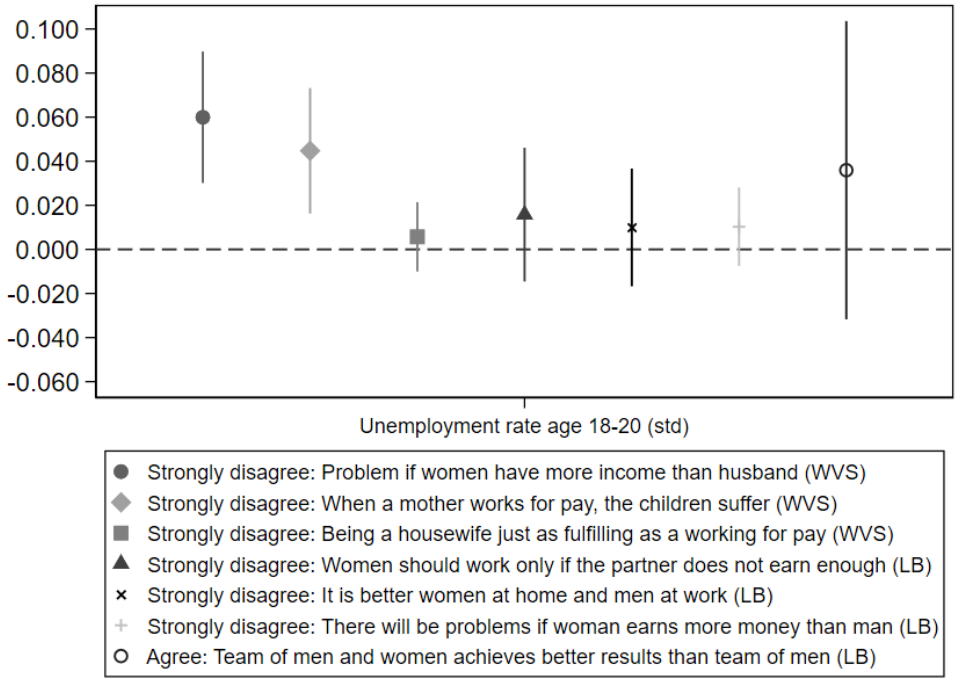
- **Women end up controlling a larger share of family income and are more likely to be the head of household 10 years after labor market entry.** Only married

Initial Labor Market Conditions and Perceptions about Gender Roles

- Our main results could be driven by changes in certain behaviors or perceptions once in the labor market: it could be that certain perceptions about the value of having a job and being financially independent change (Sen, 1990; Kessler-Harris, 2003; Kabeer, 2008).



- **We find changes in societies' attitudes towards traditional gender roles:** The percentage of individuals that strongly disagrees with gender stereotypes increases for the unlucky cohorts compared to the other cohorts.

We run several robustness checks...

- **Changes in education:** Main results could be driven by changes in education attainment. We find that years of education increase for both men and women, but previous conclusions hold once controlling for average years of education of each cohort/country. Control by educ
- **Standardization of unemployment:** We estimate the models using the national unemployment rate at 18-20 *without* standardizing and main results remain. Unemployment std
- **Age of labor market entry:** We change the *presumed* age of labor market entry by educational attainment. For individual 27-30 with secondary education we use the unemployment shock when they were 18-20; for those with college education, we use the shock at 22-24. Main results hold. Age of entry
- **Age of adulthood:** We change the time window when we observe adult labor outcomes. Instead of looking at outcomes at ages 27-30, we observe labor outcomes at 25-35. Main results remain. Adulthood

Conclusions

- We assessed gender differences in the effects of adverse conditions at labor market entry in a developing region: 15 Latin American countries.
  - We found very different impacts for men and women.
  - For men, results are in line with evidence for developed countries: men from unlucky cohorts suffer a negative effect on employment at ages 27-30.
  - For women, results show increases in employment and earnings 10 years after their potential entry into the labor market.
- Our results are consistent with women acting as secondary workers in downturns (i.e, the added-worker effect).
- We also find that adverse initial labor market conditions are correlated with measures of female bargaining power within the household and to a more egalitarian perceptions about gender roles later in life.

National household surveys used in the analysis

	Name of survey	Surveys used
Argentina	Encuesta Permanente de Hogares Puntual Encuesta Permanente de Hogares Continua	2001-2002 2003-2011
Bolivia	Encuesta de Hogares	2001-2002, 2005-2009, 2011-2017
Brazil	Pesquisa Nacional por Amostra de Domicilios	2001-2009, 2011-2017
Chile	Encuesta de Caracterización Socioeconómica Nacional	2003, 2006, 2009, 2011 2013, 2015, 2017
Colombia	Encuesta Continua de Hogares Gran Encuesta Integrada de Hogares	2001-2005 2008-2017
Costa Rica	Encuesta de Hogares de Propósitos Múltiples Encuesta Nacional de Hogares	2001-2009 2010-2017
Dominican Republic	Encuesta Nacional de Fuerza de Trabajo Encuesta Nacional Continua de Fuerza de Trabajo	2001-2016 2017
Ecuador	Encuesta de Empleo, Desempleo y Subempleo	2003-2017
El Salvador	Encuesta de Hogares de Propósitos Múltiples	2001-2017
Honduras	Encuesta Permanente de Hogares de Propósitos Múltiples	2001-2017
Mexico	Encuesta Nacional de Ingresos y Gastos de los Hogares	2002, 2004-2006, 2008, 2010, 2012, 2014, 2016
Panama	Encuesta de Hogares	2001-2017
Paraguay	Encuesta Integrada de Hogares Encuesta Permanente de Hogares	2001 2002-2017
Peru	Encuesta Nacional de Hogares	2001-2017
Uruguay	Encuesta Continua de Hogares	2001-2017

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	Women	Men
Age in years	28.53	28.53
	(1.13)	(1.13)
Years of education	9.90	9.49
	(4.27)	(4.31)
Married	0.60	0.54
	(0.49)	(0.50)
Active	0.68	0.94
	(0.47)	(0.23)
Employed	0.61	0.89
	(0.49)	(0.31)
Unemployed	0.10	0.06
	(0.30)	(0.23)
Hours worked	37.93	45.49
	(16.05)	(14.18)
Log of hourly wage	0.76	0.82
	(0.87)	(0.83)
Log of labor income	5.80	6.09
	(0.97)	(0.81)
Own labor income / total hh labor income	0.30	0.62
	(0.33)	(0.34)
Head of household	0.15	0.49
	(0.35)	(0.50)
No. of individuals	806,880	733,259

Notes: Microdata from national household surveys. The sample include individuals 27-30 years old from 14 cohorts in 15 countries observed over the period 2001-2017.

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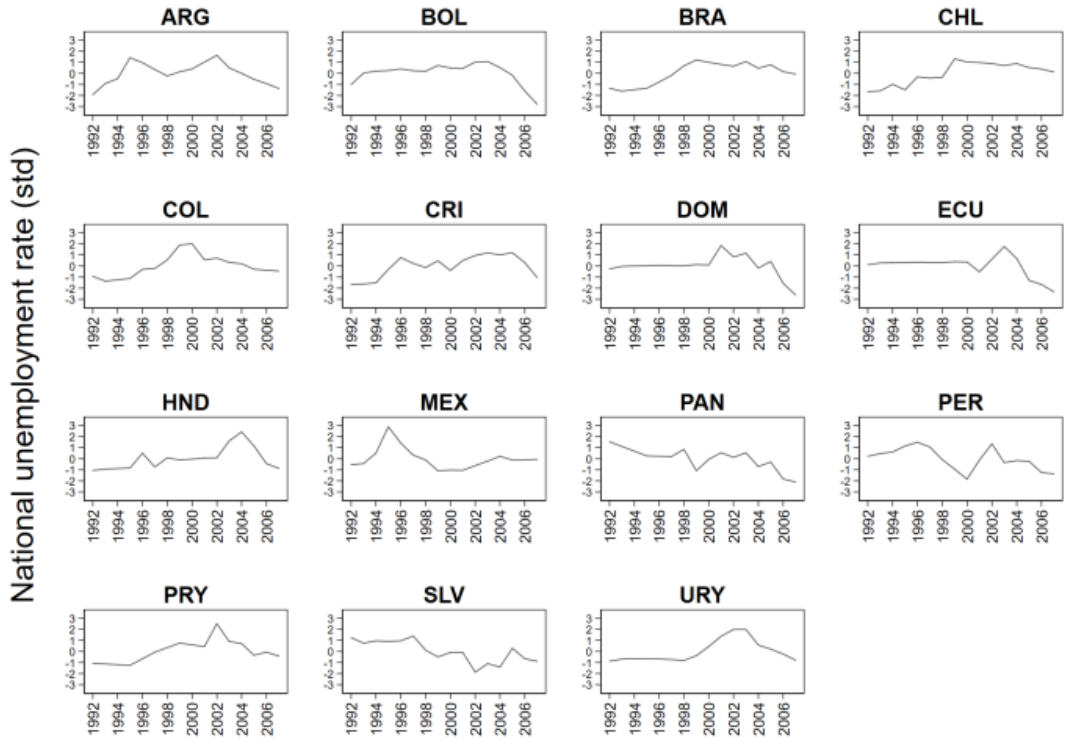

Notes: Figures show the evolution of the unemployment rates standardized within country based on data from The World Development Indicators and SEDLAC.

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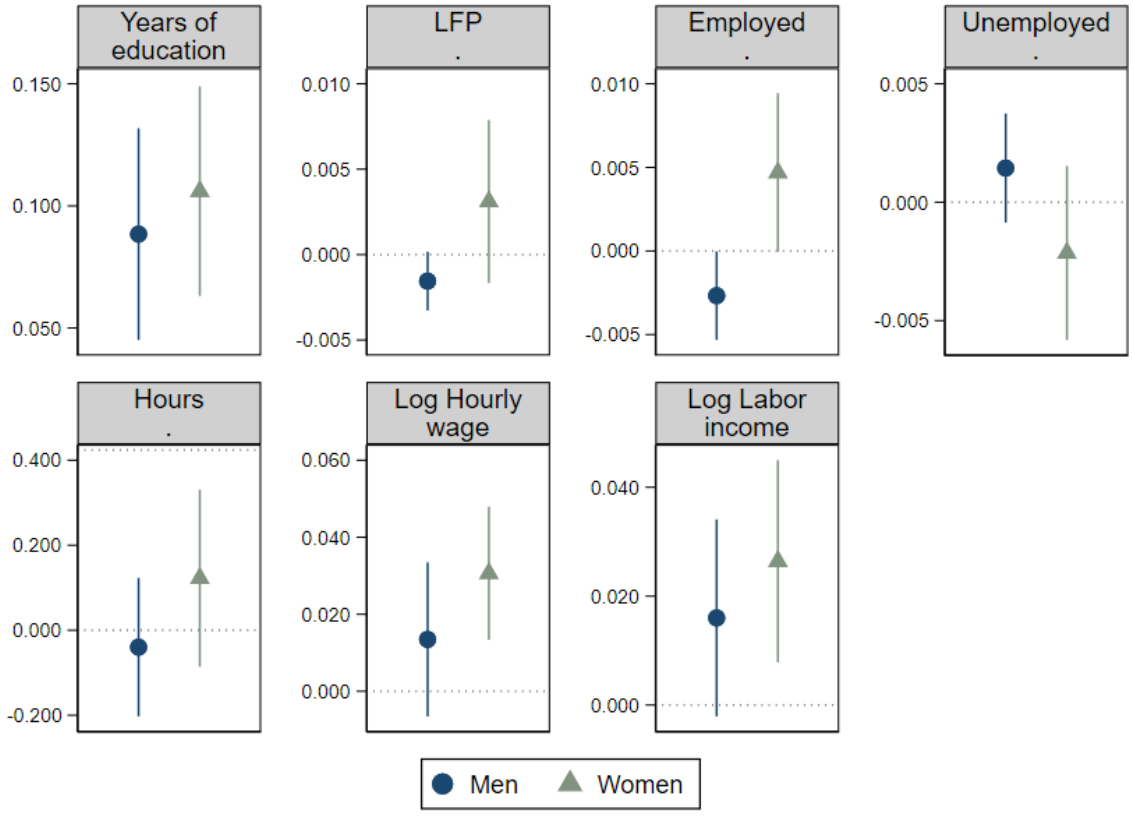

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	LFP	Employed	Unemployed	Hours	Log Hourly wage	Lag Labor income	% of HH labor income	Head of HH	Married
Panel A: National unemployment rate at 18-20 without standardizing									
Women	0.0014	0.0033	-0.0029	0.1770	0.0215	0.0229	0.0024	0.0055	-0.0018
	(0.0009)	(0.0009)***	(0.0007)***	(0.0644)***	(0.00517)***	(0.00435)***	(0.0007)***	(0.0008)***	(0.0018)
R2	0.826	0.796	0.617	0.726	0.632	0.713	0.649	0.715	0.638
Men	-0.0002	0.0008	-0.0009	0.0960	0.0188	0.0221	0.0027	0.0021	0.0000
	(0.0004)	(0.0007)	(0.0006)	(0.0447)**	(0.00413)***	(0.00351)***	(0.0008)***	(0.0011)*	(0.0019)
R2	0.643	0.579	0.501	0.82	0.728	0.763	0.662	0.756	0.675
Panel B: Standardized national unemployment rate at graduation year									
Women	0.0065	0.0057	0.0013	0.0478	0.0377	0.0279	0.0058	0.0119	-0.0197
	(0.0026)**	(0.0026)**	(0.0019)	(0.1180)	(0.0110)***	(0.00952)***	(0.0018)***	(0.0020)***	(0.0058)***
R2	0.827	0.795	0.61	0.722	0.628	0.704	0.649	0.713	0.652
Men	-0.0024	-0.0050	0.0031	-0.1450	0.0130	0.0141	-0.0026	-0.0105	-0.0115
	(0.0012)**	(0.0016)***	(0.0012)***	(0.0941)	(0.00973)	(0.00878)	(0.0020)	(0.0027)***	(0.0061)*
R2	0.645	0.584	0.503	0.819	0.720	0.751	0.658	0.76	0.68
Panel C: Standardized national unemployment rate at 18-20 - Unbalanced panel									
Women	0.0051	0.0055	-0.0009	0.0045	0.0224	0.0183	0.0049	0.0078	-0.0083
	(0.0012)***	(0.0012)***	(0.0009)	(0.0602)	(0.00514)***	(0.00459)***	(0.0009)***	(0.0010)***	(0.0021)***
R2	0.813	0.792	0.648	0.71	0.671	0.723	0.753	0.788	0.774
Men	-0.0007	-0.0015	0.0009	-0.1320	0.0158	0.0144	-0.0009	-0.0072	-0.0048
	(0.0006)	(0.0008)*	(0.0006)	(0.0481)***	(0.00480)***	(0.00433)***	(0.0010)	(0.0014)***	(0.0021)**
R2	0.663	0.679	0.558	0.806	0.727	0.768	0.819	0.877	0.852

Notes: The table shows coefficients β and the corresponding 90% confidence intervals from estimating equation (1) for cohorts of women and men, separately. For each gender, the sample is a panel of 14 cohorts in 15 countries observed over the period 2001-2017. These cohorts were born between 1974 and 1987, they possibly entered the labor market between 1992 and 2007 at ages 18-20 (except in panel B, where graduation year is assumed as the year of labor market entry), and they are between 27 and 30 years old by the time we observe their outcomes. The values of the LFP, employment, unemployment rates, head of household and married range from 0 to 1. Number of observations in Panels A and B is 756 in all models except for Hourly wage and Labor income (744) and Married (700). In Panel C, the number of observations is 1837, 1816, and 1709 respectively. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

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- Individuals may react to labor market conditions by moving to another country: we exclude immigrants from the estimation sample.
- We use national samples, so migration within countries (the most important component of migration) is not a problem for our analysis.
- Out-migration could still be a problem to our results if it is affected by unemployment: We run models of the rate of out-migration on the unemployment rate, based on country-year data for 15 countries and 6 years (UN Data). The coefficient on unemployment is not statistically significant and the result holds when separating the population by gender.
- We estimate models of the size of each cell (log of number of individuals) on the unemployment rate at the time of the labor market entry following the main specification of the paper that includes country, calendar year and age fixed effects. We do not find any statistically significant effect.

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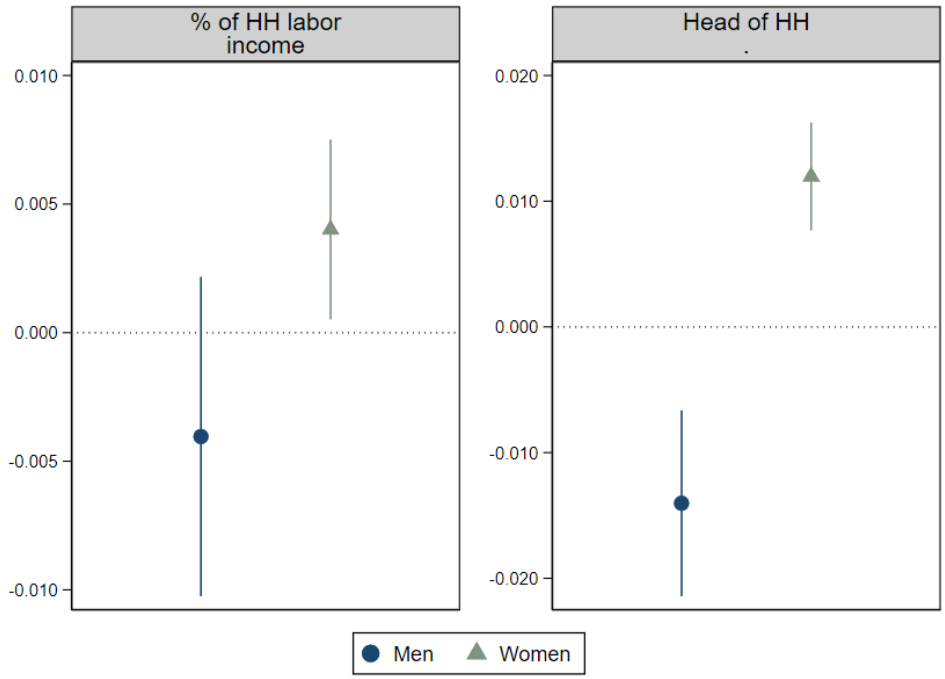
- Changes in the marriage rates could be affecting our results on household headship and female share of household labor income: if marriage rates fall, more women will be living alone and then household headship will mechanically increase.
- We repeat the analysis only for the group of married women and find that the results are robust to this alternative.



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