Migrants' labour supply response to fiscal policies

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Why study migrants' labour supply elasticities?

The case of Italy

1. Rising share of migrant workers in local labour markets

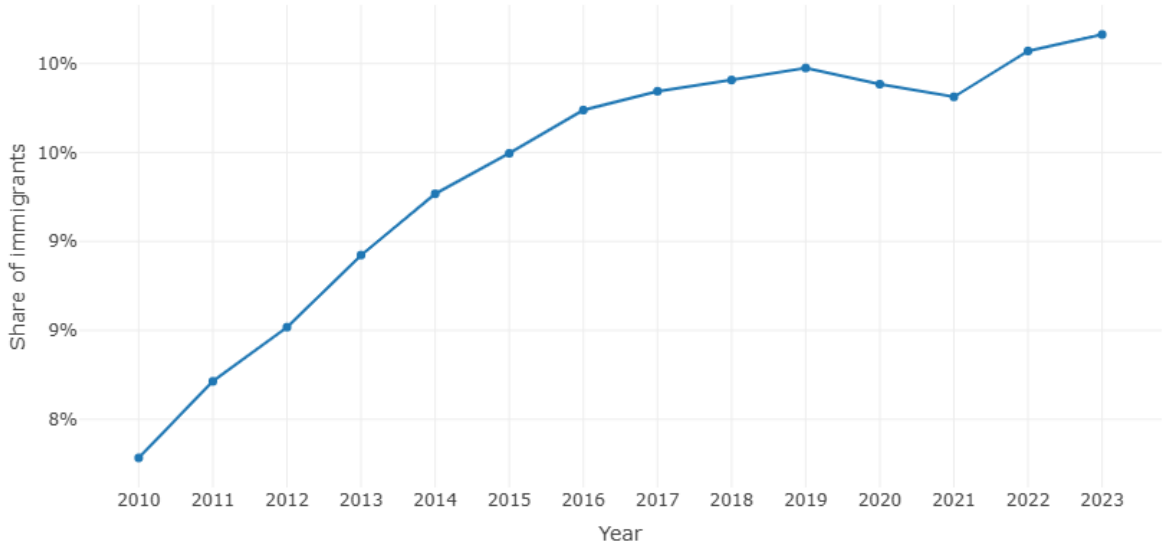


Figure: The Italian migrants' share over total population

2. High in-work poverty in Italy and difficulties to implement non-labour-supply-disincentivating basic income schemes
3. Methodology: no other studies adopting structural microsimulation models to the case of migrants' labour supply elasticities for Italy

The paper in a nutshell

Aim of the study:

- Use a structural model to estimate labour supply elasticity for migrant workers
- To do: Use the behavioural model to analyse the labour supply responses of migrant workers to fiscal policies $\rightarrow$ if they differ from natives' labour supply elasticities they might be relevant for policy design

Empirical application:

- Italian SILC data 2018
- Subjects: native Italian or foreign born individuals aged 18-65 not perceiving any pension and not self-employed
- EUROMOD microsimulation model for year 2018 and version J1.0+

Literature review

Labour supply elasticities estimation

- Labour supply elasticities are influenced by labour market participation trends: increased female participation implied a reduction in female-to-male elasticity distance (Peichl and Bargain, 2016)
- Individuals with low incomes respond strongly to wage increases than higher incomes (Aaberge, Colombino and Strøm, 2000, 2004).
- Female migrant elasticity depends on labour market integration: the time since migration increases the elasticities of women (Fendel, 2020)
- Labour participation of female migrant highly depends on their origin country's female labour participation rate (Blau and Kahn, 2007)

Behavioural Labour Supply models in Italy

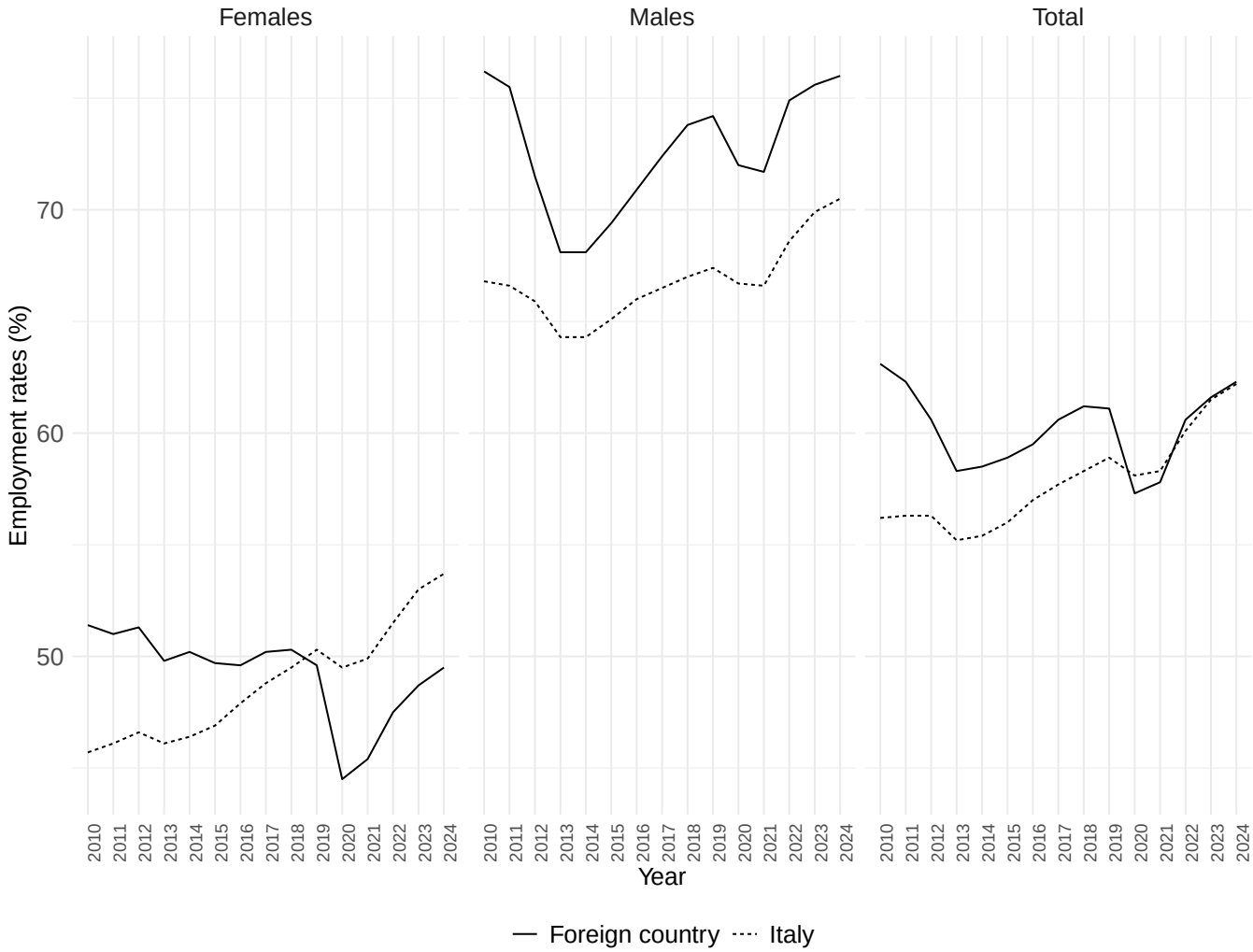
From RUM to RURO model

- From RUM (Random Utility Model) to RURO (Random Utility Random Opportunity Model): several contributions in the 1990's and 2000' by Colombino and Aaberge, 2018

Methodological and policy-related extensions

- Figari, (2015)→ Tax credit for dependent spouse replaced by family base/ individualised in-work benefits. Revenue neutrality considering the whole tax-benefit system in place.
- Coda Moscarola, Colombino, Figari & Locatelli, (2020)→ property tax (IMU) 2012 and tax credits for employment or self-employment income made refundable and more generous. Revenue neutrality. labour demand and supply in equilibrium.
- Figari & Nazarani, (2020) and Christl and E. Narazani, 2025, forthcoming.→ Joint decision of labour supply and childcare, increased childcare availability and childcare costs reduced

The Italian labour market context

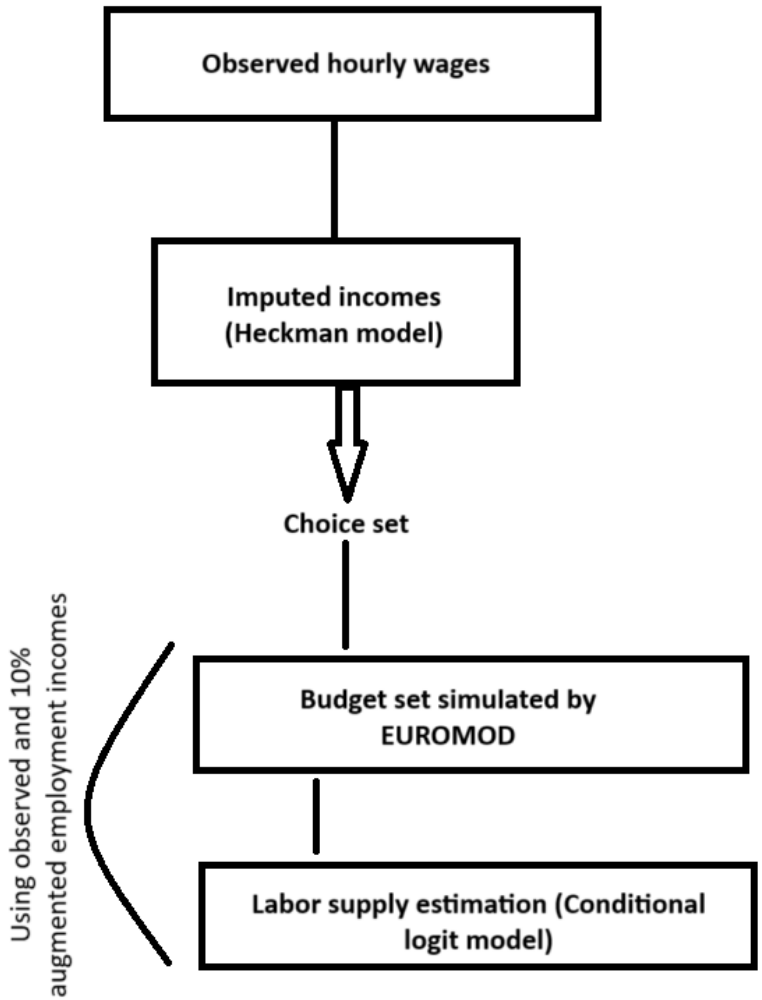


Source: our elaboration with Eurostat data.

Figure: Employment rates comparison - Italy

The model

Static structural labour supply model where labour supply is a discrete choice problem.



Model setup

Application to natives VS migrants labour supply:

1. Labour market outcomes are estimated assuming that foreign born have a different data generating process
2. Choice set is created (5x1 for single, 5x5 for couples) using step 1 predicted outcomes on each choice level on both employed and non-employed individuals
3. EUROMOD simulated household disposable income are computed on the dataset in step 2, and on a second dataset where income from employment is augmented by the 10%
4. Data are further split into groups respectively combining sex, origin country, and family status (singles and couples)
5. The decision to participate to the labour market is estimated over hours worked and household disposable incomes on each of the subsamples

Preliminary results...

Hourly wages estimation

	Italian				Foreign born			
	Female		Male		Female		Male	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	*log* hourly wage	select	*log* hourly wage	select	*log* hourly wage	select	*log* hourly wage	select
$Age/10$	0.464***	1.557***	0.536***	1.812***	0.008	1.911***	0.109	1.815***
	(0.081)	(0.155)	(0.071)	(0.167)	(0.242)	(0.332)	(0.113)	(0.349)
$Age^2/100$	-0.038***	-0.174***	-0.045***	-0.207***	0.006	-0.205***	0.003	-0.224***
	(0.009)	(0.018)	(0.008)	(0.020)	(0.027)	(0.039)	(0.014)	(0.041)
Low secondary education	0.113	0.470***	0.192**	0.267	0.030	0.663***	0.240**	0.287
	(0.179)	(0.136)	(0.077)	(0.164)	(0.125)	(0.224)	(0.099)	(0.221)
Secondary education	0.356**	1.108***	0.381***	0.570***	0.197	0.800***	0.397***	0.292
	(0.182)	(0.136)	(0.078)	(0.164)	(0.126)	(0.224)	(0.100)	(0.227)
Tertiary education	0.592***	1.569***	0.668***	0.611***	0.620***	0.744***	0.599***	-0.092
	(0.185)	(0.145)	(0.081)	(0.175)	(0.137)	(0.248)	(0.123)	(0.268)
Regional unemployment	-0.015***	-0.063***	-0.020***	-0.052***	-0.014***	-0.026***	-0.037***	-0.051***
	(0.002)	(0.004)	(0.002)	(0.006)	(0.005)	(0.010)	(0.005)	(0.014)
Dependent children below 2 yo		-0.030		0.560***		-0.124		0.233
		(0.103)		(0.173)		(0.186)		(0.257)
Dependent children above 6 yo		-0.120**		0.075		-0.219**		-0.036
		(0.054)		(0.085)		(0.109)		(0.166)
Partner		-0.608***		0.303***		-1.228***		0.118
		(0.068)		(0.088)		(0.134)		(0.182)
Non-labour incomes/1000		-0.455***		-0.513***		-0.364*		-1.570***
		(0.073)		(0.085)		(0.220)		(0.398)
Non-labour-incomes^2/1000		0.049***		0.024**		-0.004		0.310**
		(0.014)		(0.010)		(0.030)		(0.143)
Constant	3.339***	-2.752***	3.343***	-2.793***	4.314***	-3.619***	4.121***	-2.029***
	(0.247)	(0.335)	(0.170)	(0.360)	(0.565)	(0.694)	(0.262)	(0.751)
Observations	6,444	6,444	5,909	5,909	1,466	1,466	1,302	1,302
Wald chi2(6)	291.6	291.6	472.3	472.3	62.35	62.35	101.7	101.7
Prob chi2	0.614	0.614	0.261	0.261	0.588	0.588	0.0592	0.0592
LR test of indep. Eqns (rho = 0): chi2(1)	0.254	0.254	1.263	1.263	0.294	0.294	3.559	3.559
Rho	0.0408	0.0408	-0.114	-0.114	-0.0625	-0.0625	0.127	0.127
Mills Ratio		-0.739***		-0.760***		-0.523***		-0.729***
		(0.027)		(0.024)		(0.060)		(0.047)

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table: Heckman regression

Income prediction

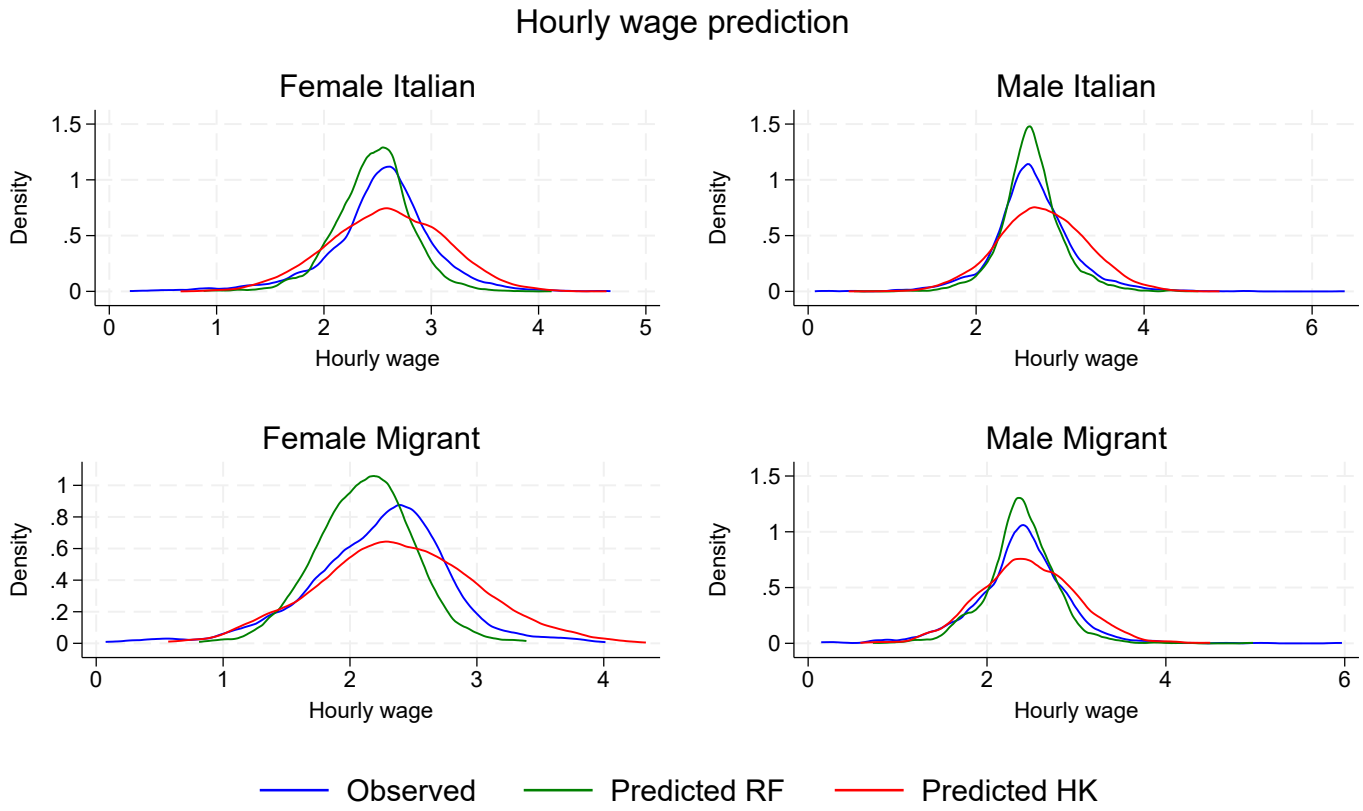


Figure: Heckman VS Random Forest predicted incomes

Heckman regression is good for identification purposes but not for income prediction → we explore other better performing prediction techniques

Labour supply prediction

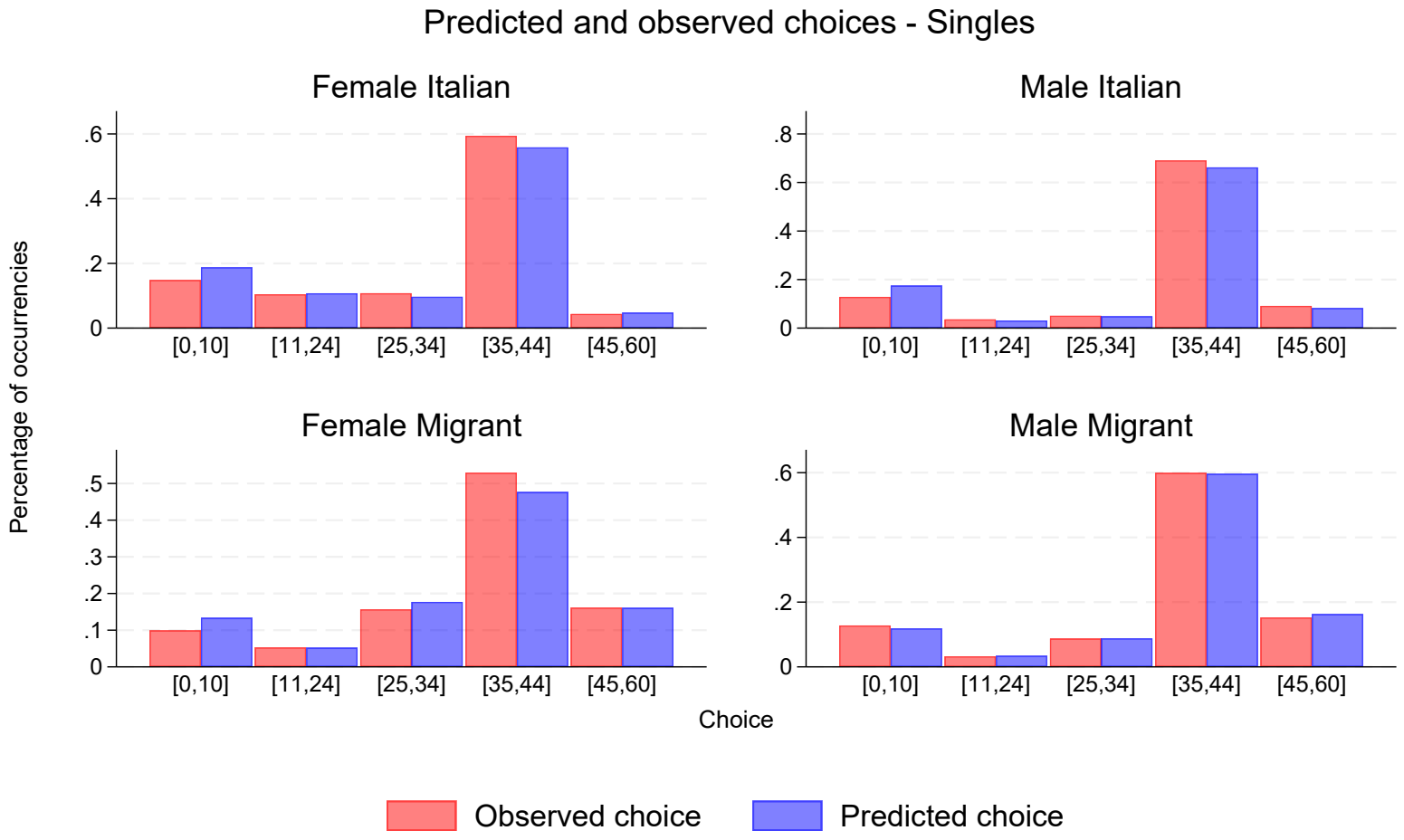


Figure: Conditional logit predicted choices compared with observed choices

Labour supply elasticities

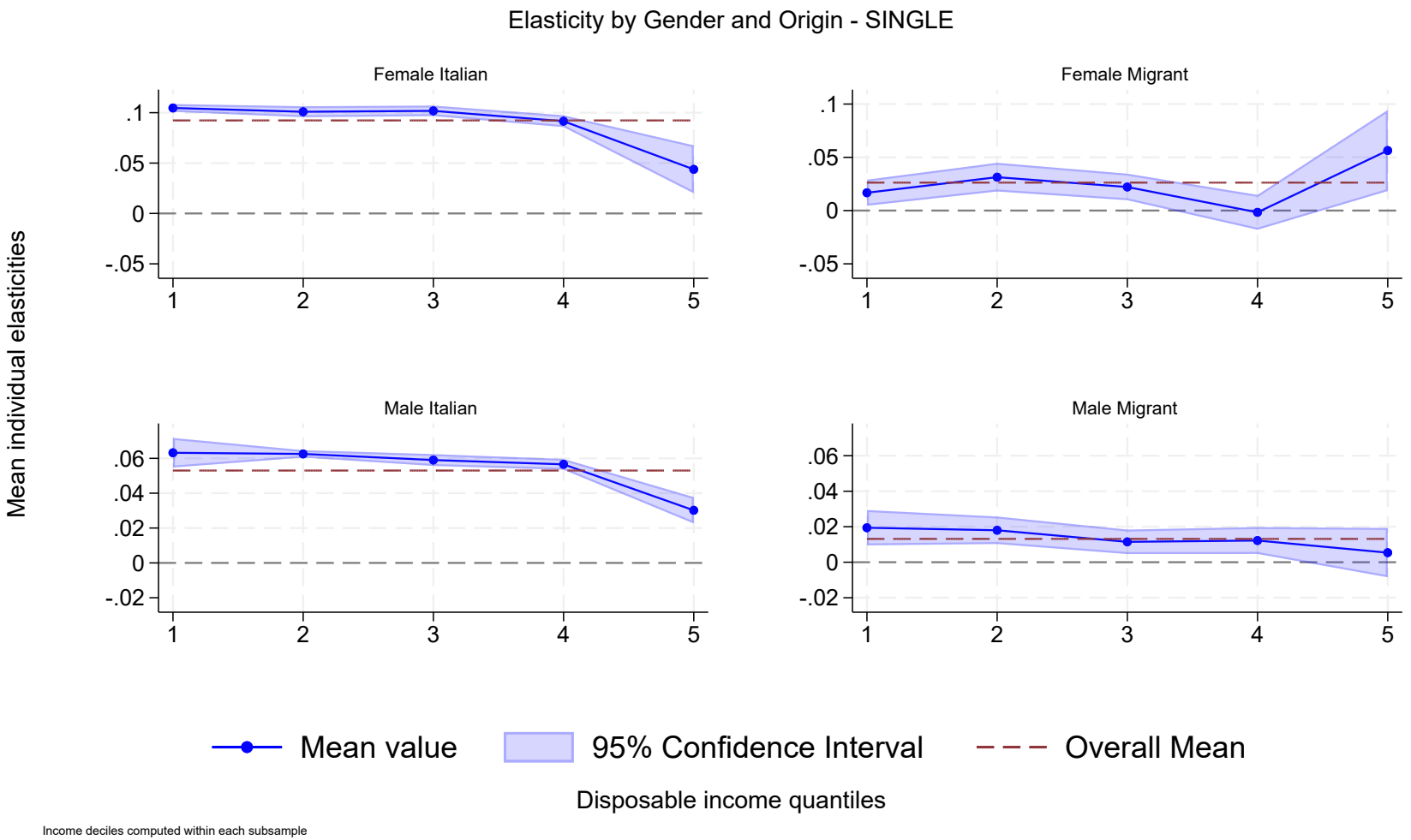


Figure: Labour supply elasticity for single individuals

Labour supply elasticities

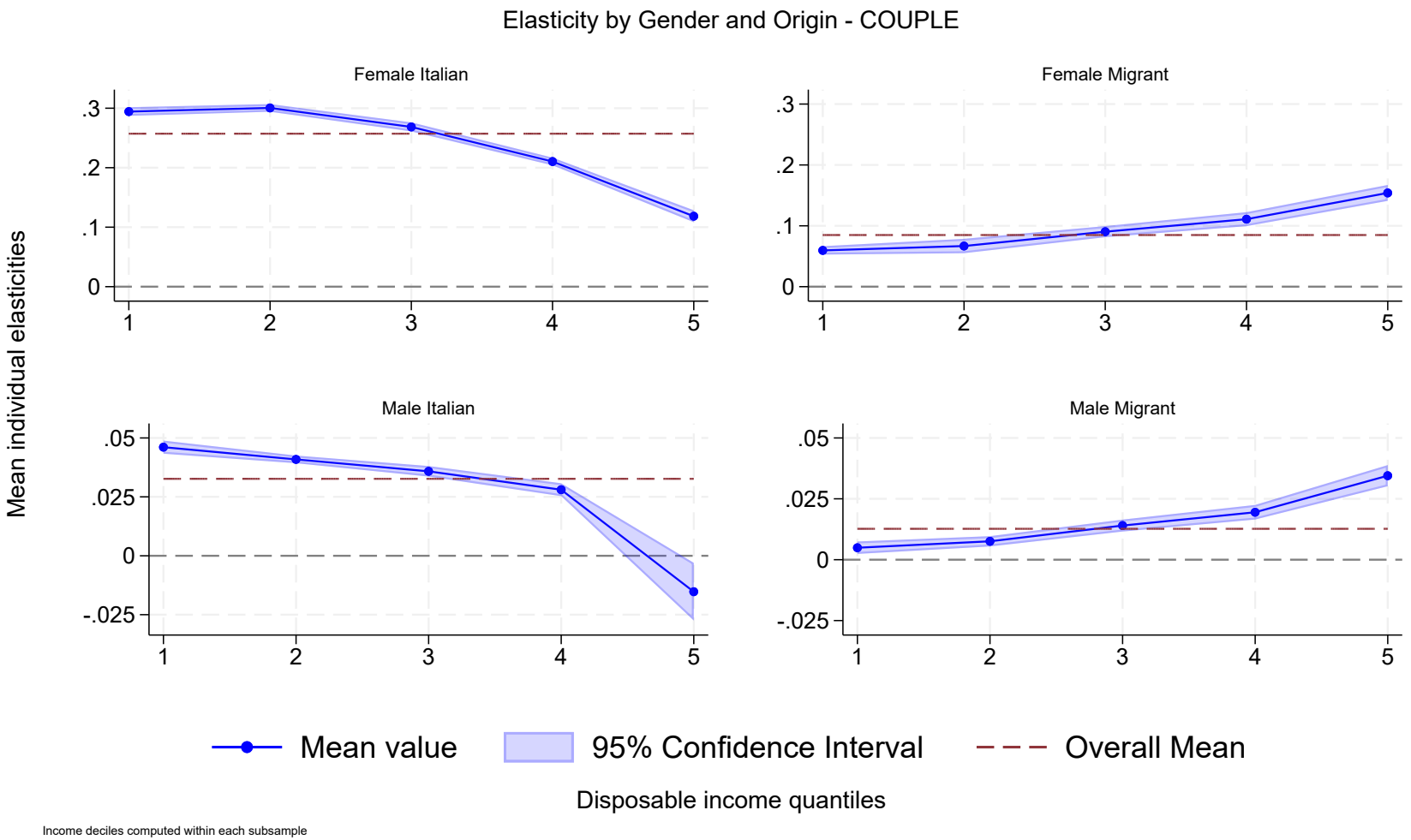


Figure: Labour supply elasticity for individuals in couples

Interpreting elasticities

Figure: Percentage of employed people within each disposable income quantile

Concluding Remarks and "to do" list

On the model

- Explore alternative wage prediction methods that better performs out of sample prediction (Random forests, Gradient Boosting)
- Pool more years to increase the sample size and be able to distinguish EU VS Extra-EU migrants
- Validate prediction results with a unique sample estimation model with origin country dummies to account for error covariance
- Check results when changing the reference population for disposable income quantiles construction

On the empirical results

- Labour supply elasticities of foreign born appear drastically lower than natives' elasticities $\rightarrow$ we attribute this evidence to higher barriers to access to the labour market
- Elasticities follow a decreasing pattern with respect to disposable income deciles in the case of natives, the converse for migrants (but quantiles are computed within subgroups!)

Thank you for the attention!

Any comment or suggestion is welcome...