Social Inclusion from migrants and Income Inequality:
An empirical analysis on European countries

(Work in progress)

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Theme: Global migration flows and the integration of migrants into cities regions: challenges and opportunities for economic development

Main idea and background

- **Idea:**
  - Relationship between social inclusion (integration) and income inequality
  - Integration from migrants (from EU vs Non-EU flow)
- **Literature exists on this issue**
  - Some claims that Integration increases income inequality (globalization)
    - Rising income inequality in western Europe is because of globalization [(Kosonen (1995), Boje et. al. (1999), Beckfield (2006) and Busemeyer & Tober (2015)]
- Other says, it may reduce income inequality
  - For example, Moses (1995) claim that social integrations promotes the process of integration, which ultimately reduces income inequality.

Main idea and background

- **The sociological approach**
  - also promotes the view that regional integration is a process of social inclusion that diminish the income gap between rich and poor (Therborn 1999).
- **Standard model of migration:**
  - income differential is the main reason that stimulates migration from underdeveloped to developed countries

Skilled vs unskilled immigration: is another challenge in receiving regions.

Main idea and background

- skilled migrants: may easily be integrated with ampel access of opportunities of social interaction. (Bhagwati and Hamada, 1974)
- for unskilled worker, it is hard to compete with skilled colleague or native,
- Migration flow is continue from both EU and non-EU
- **Result** is income inequality (Grubel and Scott, 1966; Bhagwati and Hamada, 1974; Haque and Kim, 1995).

Main idea and background

- **Migration flow from EU and nonEU:**
  - A recent study by Kahanec and Pytliková, 2017: " *rising flow of immigrants from both EU and non-EU is a serious challenged for income inequality in the Europe"*
- **Focus of current study:**
  - 1) EU migration (within EU)
  - 2) non-EU migration (mainly from non-EU developing countries)
- **The main hypothesis is** to test
  - whether the social inclusion from migration flow (EU and nonEU) reduce income inequality

Data

- **Unbalanced panel data:**
  - 33 EU countries from Eurostat
  - over the period 2003-2015.
- **Dependent Variable:** Income inequality measured as (WDI)
  - (1) the coefficient
  - (2) the top 10% income share; and
  - (3) the top 20% income share.
- **Explanatory variable:** social inclusion (integration) *SI (EURO stat)*
  - 1) SI-EU: social inclusion from EU migrants
  - 2) SI-non: social inclusion from non-EU migrants (SI-nonEU)
  - 3) SI-total: social inclusion from both (EU and non-EU)

Data

- **Control variables:**
  - **Savings Rate** (-ive relation b/w income inequality and savings rate

    (Dynan et al. (2004), Mayer (1966, 1972), Alvarez-Cuadrado and Vilalta (2012).
  - **Arable land area** to total population (arable land area per head)
    - Natural resource scarcity has long been argued as a potential determinant of income inequality in the current literature.
    - For example, Gylfason and Zoega (2002) argue that "increased dependence on natural resources and natural resource scarcity tend to go along with less rapid economic growth and greater inequality in the distribution of income across countries".
  - **Age-dependency ratio** : ratio of non-working-age population (dependents including retired population and minors) to working-age population.
    - income inequality in Europe is sensitive to population aging, since the elderly face high poverty risks and represent a growing share of the population (Guerin, 2013).
    - Other studies including Deaton and Paxson (1997), Schultz (1997) and Lam and Levison (1992) contend that population ageing leads to an increase in consumption or income inequality, as aging has led to a decline in the share of resources going to the elderly (Gruber and Wise (2001)), and that a rise in the overall dependency ratio is leading to a decline in social transfers (Razin et al. (2002)).

Sub-indicators of social inclusion

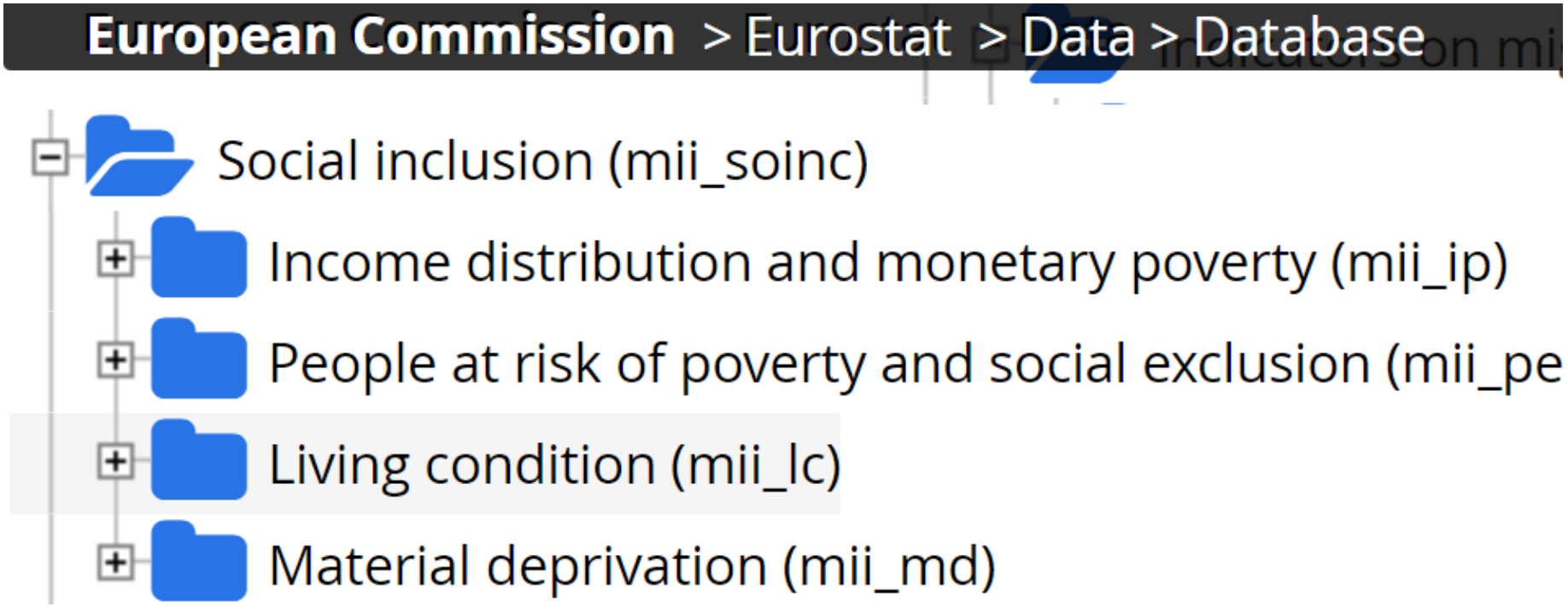

Table A1: Social Inclusions sub-indicators and short description

Indicators	Short Description
Material Deprivation rate by sex.	The percentage of population with an enforced lack of at least three out of nine material deprivation items in the 'economic strain and durables' dimension.
Living conditions: Housing cost overburden rate	The percentage of the population living in a household where the total housing costs (net of housing allowances) represent more than 40% of the total disposable household income (net of housing allowances)
Living conditions: Overcrowding rate	The percentage of the population living in an overcrowded household (excluding the single-person households). A person is considered as living in an overcrowded household if the household does not have at its disposal a minimum of rooms equal to: - one room for the household; - one room by couple in the household; - one room for each single person aged 18 and more; - one room by pair of single people of the same sex between 12 and 17 years of age; - one room for each single person between 12 and 17 years of age and not included in the previous category; - one room by pair of children under 12 years of age.
Living conditions: tenure status (tenant versus owner)	Distribution of population by broad group of citizenship and tenure status (owner versus tenant)

Source: Eurostat database (www.ec.europa.eu)

We also used other indicators for integration and social inclusion

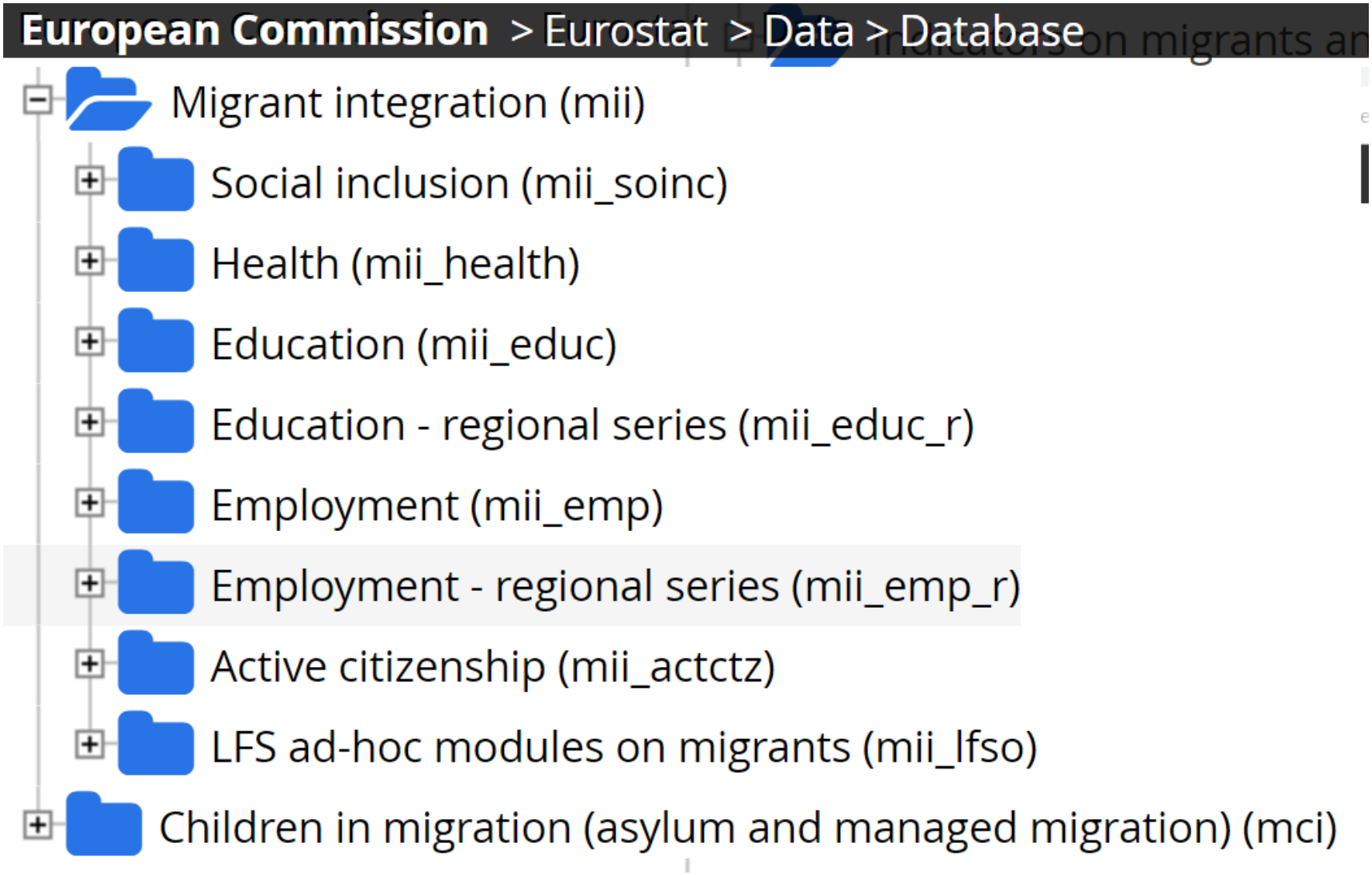

Table 1: Summary Statistics and Variable Definition

Variables	Definition	Obs	Mean	Std. Dev.	Min	Max
$gini$	GINI index	292	31.52	3.69	23.72	42.18
$ginireal$	After tax GINI index	281	29.91	4.34	23.01	43.60
$top10$	Income share held by highest 10%	279	24.76	2.34	20.14	31.73
$top20$	Income share held by highest 20%	292	39.65	0.77	34.04	48.37
$herf$	Herfindahl index	416	0.07	0.03	0.03	0.3
age	Age dependency ratio (% of working-age population)	408	48.58	3.89	38.09	59.17
sav	Adjusted savings: natural resources depletion (% of GNI)	374	0.87	2.20	0.00	17.06
$arable$	Arable land (per capita arable land area)	371	23.99	12.93	1.20	58.89
SI_{EU}	Social inclusion – immigrants from EU	289	-0.025	1.42	-5.54	2.60
SI_{nonEU}	Social inclusion – immigrants from non-EU	314	0.07	1.36	-5.53	2.97
$SI_{foreign}$	Social inclusion – all foreign immigrants	333	0.02	1.38	-5.40	2.12

Empirical method

- Panel data model using System GMM (take cares of endogeneity)
- **OLS Regressions with fixed effects**

$$inequal_{i,t} = \alpha_0 + \alpha_1 SI_{i,t} + \alpha_2 X_{i,t} + \delta_i + b_t + \epsilon_{i,t} \quad (1)$$

- **GMM regression**

$$inequal_{i,t} = \alpha_3 + \alpha_4 inequal_{i,t-1} + \alpha_5 SI_{i,t} + \alpha_6 X_{i,t} + b_t + u_{i,t} \quad (2)$$

- Where SI is social inclusion. $X_{i,t}$ is a set of control variables including savings rate, age dependency ratio and arable land rate.
- α_0 is constant across time and cross-section, δ_i is the country dummy, b_t is the time dummy, and ϵ is the error term.

	Pooled OLS Regressions			System GMM Regressions		
	(1)	(2)	(3)	(4)	(5)	(6)
$l.ginireal$				0.979***	1.132***	0.948***
				(25.93)	(11.64)	(13.55)
SI_EU	-0.009***			-0.002**		
	(-6.77)			(-2.36)		
SI_nonEU		-0.008***			-0.009***	
		(-5.07)			(-3.44)	
$SI\_foreign$			-0.012***			-0.003*
			(-7.53)			(-1.94)
age	0.002***	0.001	0.001***	0.000	-0.001	0.000
	(2.99)	(0.81)	(2.81)	(1.43)	(-0.34)	(0.98)
sav	-0.003***	-0.003***	-0.003***	0.001	0.000	-0.000
	(-5.47)	(-5.61)	(-5.36)	(1.40)	(0.35)	(0.31)
$arable$	-0.001**	-0.000	-0.000	-0.002*	-0.001	-0.000
	(-2.56)	(-0.93)	(-0.93)	(-1.77)	(-1.53)	(-1.08)
Observations	198	206	220	182	200	187
Countries	25	26	27	25	27	26
Instruments				13	13	13

Robustness check: alternative measure

	$top10$ Sample			$top20$ Sample		
	(1)	(2)	(3)	(4)	(5)	(6)
SI_EU	-0.570***			-0.426***		
	(-3.11)			(-3.03)		
SI_nonEU		-0.654***			-0.781***	
		(-5.80)			(-3.00)	
$SI\_foreign$			-1.178*			-0.772*
			(-1.95)			(-1.81)
age	0.097***	0.139***	0.088	0.446***	-0.206	0.350
	(5.14)	(2.64)	(1.40)	(9.58)	(-0.45)	(0.95)
sav	0.009	-0.114	0.015	-0.475***	-0.388	-0.680
	(0.55)	(-0.98)	(0.12)	(-3.19)	(-0.87)	(-1.57)
$arable$	-0.006	0.010	0.028	-0.011	0.070	-0.039
	(-0.68)	(0.53)	(1.09)	(-0.32)	(0.41)	(-0.34)
Observations	154	170	180	162	181	192
Countries	27	29	30	27	29	30
Instruments	16	12	12	17	12	12

Robustness check confirms the same results

- alternative measure of income inequality
- alternative estimation techniques
- Sub-components of Social Inclusion

Conclusion

- increasing social inclusion among EU and non-EU migrants reduces income inequality significantly.
- This relationship hold in both alternative estimation techniques and using sub-components of SI (Causal)
- In particular, overcrowding rate seems to matter the most for EU migrants in terms of inequality reduction,
- while housing cost matters the most for non-EU migrants for the same purpose.

limitations

- Unbalanced panel (short time series)
- measurement of social inclusion.
- lack of observations on the sub-indicators of social inclusion can certainly be further improved in the future, when the availability of both the scale and the scope of public data on these social measures improve.

Thank you for your attention!
Question??