

# Migration: impact on tax and social benefits in the EU

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# Motivating background

- ▶ **Migration flows toward the EU** have been on the rise in recent years, and immigration has become a key issue in the political arena in most EU countries (Dustmann and Preston 2006, Boeri, 2010).
- ▶ The **impact** that **immigration has on the tax and welfare system** and the net fiscal consequences of immigration is dominating issue of concern in the public debate.
- ▶ The **debate about the fiscal effects** (and not so much the effects on wages) of immigration has, for instance, dominated the UK debate before the **Brexit referendum** (Alfano, Dustmann, Frattini 2016).
  - ▶ **Immigrants** are often **feared to be a burden** for the receiving country's welfare state, as they may receive in social transfers more than what they pay in via their taxes.
  - ▶ One specific concern is that the **generosity of welfare provision** in destination countries **encourages immigration** of welfare-dependent migrants.

# Why this project?

- ▶ Against this background, it is surprising how **little evidence exists** on how much immigrants take out of and contribute to the public purse.
  - ▶ the **existing evidence is** often **scattered**, or **specific to some periods/countries** (e.g. Dustmann, Frattini and Halls, 2010; Dustmann and Frattini, 2014; Liebig and Mo, 2013).
- ▶ We study the **fiscal cost of migrants** with a **EU-wide perspective**

# What we do in this project

- ▶ We **build a EU-wide dataset** for the analysis of the fiscal cost of migrants, starting from EU-SILC, and integrating it with EUROSTAT and ELFS data
- ▶ We **use EUROMOD** (Sutherland and Figari, 2013; [www.euromod.ac.uk](http://www.euromod.ac.uk)), the static microsimulation model for the EU to
  1. **build data on** commonly defined tax and benefit items (“EUROMODization” of tax-benefit variables) and
  2. **quantify** the actual fiscal cost of migrants
  3. **simulate** the effect of different policies

# Data production

- ▶ Main data source: **EU-SILC** 2015 (but DE 2014) + UK **FRS** 2014 + **HBS** 2010 (for a selection of countries)
- ▶ EUROSTAT (Classification of the Functions of Government **COFOG**) for imputing cost of in kind benefits (housing, education, health care)
- ▶ EUROSTAT for **post-stratification**
- ▶ **Reweighting** by gender and age (5yrs for nationals, 10yrs for non-natives)

**Warning:** In some countries (mostly NMS) frequencies are small hence estimates may be unreliable

# Data production

## EU-SILC

- ▶ Main data source: **EU-SILC 2015**
- ▶ **Need to merge** for recovering variables:
  - ▶ **Year of migration** in the country
  - ▶ **Tenure status** of the household
- ▶ Challenges:
  1. Problems with merging of EUROMOD w/ EUSILC data as idhh and idperson do not coincide  $\implies$  we had to use a trick!
  2. NL needs using version 1 of EUSILC 2015 (thanks ISER...)
  3. EL needs ISER-provided identifiers
  4. UK needs obtaining data from UKDA (free availability upon application)
  5. DE need using EUSILC 2014
  6. Assumptions for missing information (e.g. citizenship of children if unknown in FI): give them same citizenship of both parents or “most inclusive” one.
  7. Data harmonization: In some countries age is detailed even above 80 (e.g. SK), we changed it to 80+

# EUROMOD changes

Changes provided for **28 EU MS**:

- ▶ We screened the **single country policies** using country-specific sources and modified the simulated EUROMOD policies conditional to migrant status
- ▶ All benefits and pensions have been addressed
- ▶ EUROMOD “technical” changes (see EUROMOD)
- ▶ Challenges:
  1. Not all policies are simulated
  2. Heterogeneity across EU MS

Integration of EUROMOD with the ITT **15 EU MS**, for the analysis of indirect taxation.

# EUROMOD changes

## Sources of information

- ▶ Thorough analysis of changes country by country
  - ▶ Main sources: national legislation, social assistance agencies, etc.
- ▶ Coding of each policy in EUROMOD.



# Data production (second part)

## Reweighting

ITALY	Age class	EUROSTAT aggr. freq.	EUROMOD weighted freq. (original weights,dwtold)	% Differ. [100*(C- D)/D]	EUROMOD weighted freq. (post-str. weights,dwt)	% Differ. [100*(C- F)/F]
(A)	(B)	(C)	(D)	(E)	(F)	(H)
Nationals	0-9	4,852,604	4,553,256	6.57	4,852,587	0.00
Nationals	10-19	5,242,784	5,085,992	3.08	5,242,822	0.00
Nationals	20-29	5,560,328	5,721,266	-2.81	5,560,306	0.00
Nationals	30-39	6,776,121	6,484,616	4.50	6,776,104	0.00
Nationals	40-49	8,892,402	8,722,936	1.94	8,892,461	0.00
Nationals	50-59	8,015,905	8,107,585	-1.13	8,015,919	0.00
Nationals	60-69	6,946,292	6,955,614	-0.13	6,946,282	0.00
Nationals	≥ 70	9,534,446	9,535,923	-0.02	9,534,450	0.00
EU28	0-9	165,359	271,122	-39.01	165,364	0.00
EU28	10-19	119,291	130,801	-8.80	119,287	0.00
EU28	20-29	245,656	181,172	35.59	245,653	0.00
EU28	30-39	379,763	390,378	-2.72	379,762	0.00
EU28	40-49	303,902	273,407	11.15	303,899	0.00
EU28	50-59	176,764	192,694	-8.27	176,762	0.00
EU28	60-69	54,169	66,642	-18.72	54,170	0.00
EU28	≥ 70	21,883	17,874	22.43	21,884	0.00
Non EU28	0-9	538,522	635,093	-15.21	539,318	-0.15
Non EU28	10-19	360,303	514,316	-29.95	382,177	-5.72
Non EU28	20-29	585,454	431,323	35.73	585,449	0.00
Non EU28	30-39	834,500	950,793	-12.23	836,670	-0.26
Non EU28	40-49	634,389	756,689	-16.16	634,391	0.00
Non EU28	50-59	357,444	319,985	11.71	357,442	0.00
Non EU28	60-69	134,768	132,216	1.93	134,781	-0.01
Non EU28	≥ 70	56,099	51,740	8.42	56,099	0.00

Source: our calculations using UDB-SILC data and EUROSTAT external statistics for validation purposes.

# Data production (second part)

## In-kind benefits

- ▶ **Main data source: COFOG** obtained from **EUROSTAT**
  - ▶ **Health**: apportion by age class and gender
  - ▶ **Education**: apportion by educational attainment
  - ▶ **Housing**: self-declaration of living in social housing

# Validation: Share of expenditures considered

## Classification of the function of government (COFOG)

	NOT CONSIDERED		CONSIDERED	
	General public Services Defence Public order Economic affairs Environment protection Recreation, culture, religion	Share of TOTAL	Housing Education Health Social protection	Share of TOTAL
Austria	59,219.60	34.0%	115,085.70	66.0%
Belgium	82,376.90	37.3%	138,604.10	62.7%
Bulgaria	7,469.00	41.5%	10,517.10	58.5%
Croatia	8,575.60	41.2%	12,262.80	58.8%
Cyprus	4,221.30	49.4%	4,327.10	50.6%
Czech Rep.	24,443.70	36.9%	41,723.70	63.1%
Denmark	40,681.50	27.7%	106,063.60	72.3%
Estonia	3,001.90	39.5%	4,595.20	60.5%
Finland	36,138.00	30.3%	83,261.00	69.7%
France	379,427.00	31.0%	846,217.00	69.0%
Germany	403,363.00	31.1%	895,438.00	68.9%
Greece	37,145.00	41.4%	52,484.00	58.6%
Hungary	24,669.30	47.2%	27,588.90	52.8%
Ireland	22,952.40	31.4%	50,090.00	68.6%
Italy	289,488.00	35.1%	536,077.00	64.9%
Latvia	3,790.60	41.9%	5,254.70	58.1%
Lithuania	4,382.30	34.6%	8,284.40	65.4%
Luxembourg	6,659.90	31.9%	14,235.30	68.1%
Malta	1,403.10	40.2%	2,091.50	59.8%
Netherlands	101,495.00	33.1%	204,709.00	66.9%
Poland	63,529.50	36.6%	110,166.70	63.4%
Portugal	35,347.20	39.5%	54,250.50	60.5%
Romania	23,009.00	43.9%	29,412.40	56.1%
Slovakia	11,654.80	36.4%	20,328.50	63.6%
Slovenia	6,943.10	37.2%	11,712.80	62.8%
Spain	170,762.00	36.7%	294,662.00	63.3%
Sweden	68,901.00	31.1%	152,322.20	68.9%
UK	310,535.70	31.6%	673,436.90	68.4%
<b>EU28</b>	<b>2,231,585.40</b>	<b>33.1%</b>	<b>4,505,202.10</b>	<b>66.9%</b>

# Validation: Housing

## Classification of the function of government (COFOG)

	Housing and community amenities, COFOG	Housing and community amenities, SILC	Housing and community amenities, %
Austria	1,141.20	1,141.20	100.00
Belgium	1,531.60	1,531.60	100.00
Bulgaria	699.10	699.13	100.00
Croatia	395.30	395.24	99.99
Cyprus	388.60	388.80	100.05
Czech Rep.	1,335.90	1,335.90	100.00
Denmark	599.50	599.62	100.02
Estonia	87.30	87.28	99.98
Finland	813.00	812.99	100.00
France	25,820.00	25,820.03	100.00
Germany	11,543.00	11,543.00	100.00
Greece	489.00	488.99	100.00
Hungary	955.10	955.09	100.00
Ireland	1,538.30	1,538.33	100.00
Italy	10,214.00	10,214.02	100.00
Latvia	261.20	261.22	100.01
Lithuania	123.10	123.10	100.00
Luxembourg	282.10	282.22	100.04
Malta	27.60	27.61	100.02
Netherlands	3,051.00		
Poland	2,944.90	2,944.88	100.00
Portugal	1,114.70	1,114.71	100.00
Romania	1,755.30	1,755.21	99.99
Slovakia	392.40	392.32	99.98
Slovenia	333.30	333.29	100.00
Spain	5,174.00	5,174.05	100.00
Sweden	3,352.30	3,352.31	100.00
UK	15,943.00	15,942.95	100.00
<b>EU28</b>	<b>89,254.80</b>	<b>89,255.08</b>	<b>100.00</b>

# Validation: Education

## Classification of the function of government (COFOG)

	Education, COFOG	Education, SILC	Education, %
Austria	16,416.90	16,412.00	99.97
Belgium	25,412.90	25,345.85	99.74
Bulgaria	1,746.10	1,477.83	84.64
Croatia	2,098.80	1,776.45	84.64
Cyprus	1,058.10	1,052.95	99.51
Czech Rep.	8,011.10	6,556.74	81.85
Denmark	18,939.70	15,466.41	81.66
Estonia	1,125.50	1,125.50	100.00
Finland	13,122.00	13,112.56	99.93
France	118,005.00	117,881.03	99.89
Germany	124,349.00	123,466.52	99.29
Greece	7,758.00	7,687.41	99.09
Hungary	5,346.00	4,040.05	75.57
Ireland	8,423.40	8,416.24	99.91
Italy	65,330.00	65,244.64	99.87
Latvia	1,394.40	1,393.59	99.94
Lithuania	1,963.30	1,962.89	99.98
Luxembourg	2,458.10	2,446.40	99.52
Malta	469.40	466.73	99.43
Netherlands	35,727.00	35,727.45	100.00
Poland	21,606.20	21,602.38	99.98
Portugal	9,868.20	9,867.65	99.99
Romania	4,498.80	4,498.59	100.00
Slovakia	3,127.90	3,127.43	99.98
Slovenia	2,251.60	1,912.92	84.96
Spain	42,520.00	42,508.34	99.97
Sweden	28,493.60	28,283.19	99.26
UK	114,860.10	114,754.31	99.91
<b>EU28</b>	<b>686,381.10</b>	<b>677,614.06</b>	<b>98.72</b>

# Validation: Health care

## Classification of the function of government (COFOG)

	Health, COFOG	Health, SILC	Health, %
Austria	26,078.80	25,768.67	98.81
Belgium	32,291.00	32,045.13	99.24
Bulgaria	2,341.40	2,342.53	100.05
Croatia	2,868.20	2,868.41	100.01
Cyprus	466.00	463.67	99.50
Czech Rep.	11,893.40	11,852.10	99.65
Denmark	22,747.80	22,336.60	98.19
Estonia	1,020.60	1,022.47	100.18
Finland	17,076.00	17,121.96	100.27
France	175,661.00	173,433.77	98.73
Germany	209,651.00	201,114.56	95.93
Greece	8,364.00	8,355.70	99.90
Hungary	5,089.70	5,035.02	98.93
Ireland	13,245.50	13,284.65	100.30
Italy	116,052.00	116,677.55	100.54
Latvia	898.20	897.21	99.89
Lithuania	2,014.20	1,998.96	99.24
Luxembourg	2,475.10	2,432.32	98.27
Malta	484.10	445.57	92.04
Netherlands	54,044.00	53,904.88	99.74
Poland	19,065.90	19,131.03	100.34
Portugal	10,750.10	10,682.40	99.37
Romania	6,016.80	6,008.18	99.86
Slovakia	5,345.90	5,255.73	98.31
Slovenia	2,442.20	2,435.37	99.72
Spain	63,492.00	63,256.30	99.63
Sweden	30,323.90	30,511.07	100.62
UK	170,860.40	170,974.34	100.07
<b>EU28</b>	<b>1,013,059.20</b>	<b>1,001,656.14</b>	<b>98.87</b>

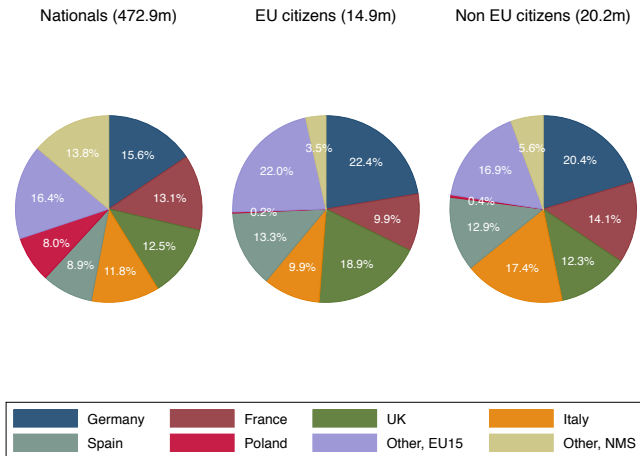
# Validation: Social protection

## Classification of the function of government (COFOG)

	Social protection, COFOG	Social protection, SILC	Social protection, %
Austria	63,641.80	63,371.45	99.58
Belgium	67,804.20	67,878.82	100.11
Bulgaria	5,232.20	5,813.77	111.12
Croatia	6,256.70	5,326.30	85.13
Cyprus	2,358.30	3,324.06	<b>140.95</b>
Czech Rep.	18,001.50	16,650.82	92.50
Denmark	42,815.80	44,807.11	104.65
Estonia	2,081.20	2,553.07	<b>122.67</b>
Finland	39,301.00	40,918.13	104.11
France	419,965.00	484,279.38	115.31
Germany	437,382.00	454,449.06	103.90
Greece	35,040.00	32,001.67	91.33
Hungary	14,426.50	12,638.51	87.61
Ireland	22,973.50	19,613.72	85.38
Italy	326,863.00	287,402.50	87.93
Latvia	2,385.70	2,464.34	103.30
Lithuania	3,477.00	3,311.23	95.23
Luxembourg	7,300.30	6,826.18	93.51
Malta	934.10	1,056.75	113.13
Netherlands	76,423.00	116,679.44	<b>152.68</b>
Poland	58,447.80	54,170.77	92.68
Portugal	29,798.30	28,778.69	96.58
Romania	15,582.30	16,159.94	103.71
Slovakia	10,560.70	7,517.81	<b>71.19</b>
Slovenia	6,136.00	7,029.90	114.57
Spain	167,418.00	158,874.86	94.90
Sweden	58,354.60	68,825.41	<b>117.94</b>
UK	312,865.30	255,289.09	81.60
<b>EU28</b>	<b>2,253,825.80</b>	<b>2,268,012.77</b>	<b>100.63</b>

# Migration in the EU, where we stand

Distribution of nationals, EU mobile citizens and non-EU immigrants across EU countries





# Migration in the EU, where we stand

Relative distribution of nationals and non-EU immigrants across EU countries

**Table:** Distribution of non-EU migrants across the EU relative to the total population of nationals.

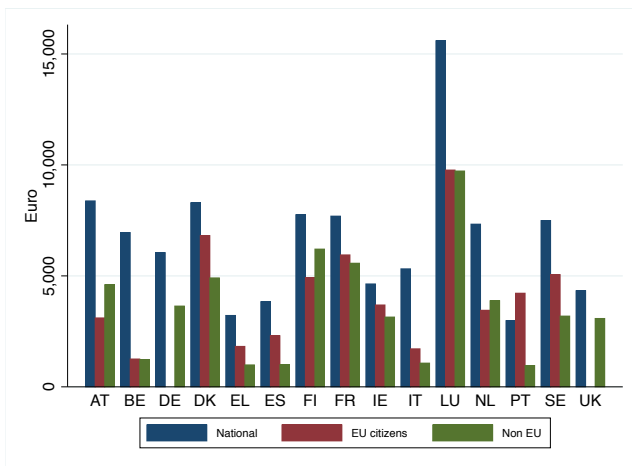
	Nationals	Non EU citizens	"Proportional distribution" of migrants
Germany	15.6%	20.3%	1.30
France	13.1%	14.0%	1.07
UK	12.5%	12.3%	0.98
Italy	11.8%	17.4%	1.47
Spain	8.9%	12.9%	1.45
Poland	8.0%	0.4%	0.05
Other, EU15	16.3%	17.1%	1.05
Other, NMS	13.8%	5.6%	0.41

Source: our calculations using EUROSTAT data.

where we stand

# The fiscal effect of immigration: expenditures

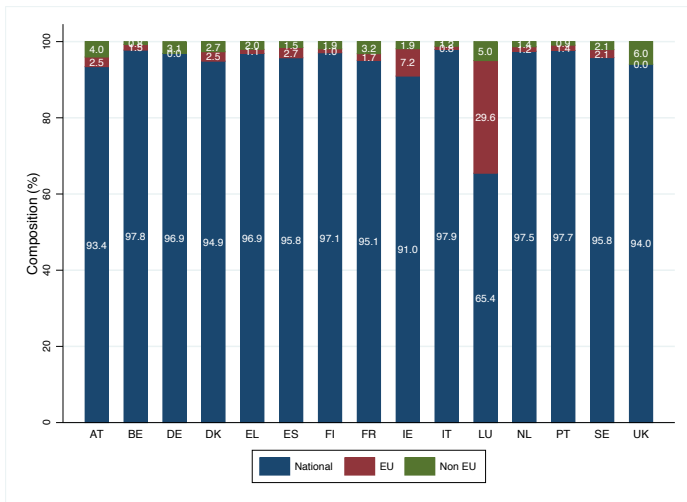
Total benefits and pensions per capita, EU15



In all EU15 countries the amount of per capita benefits received by nationals is higher than the amount of benefits received by both EU and non-EU immigrants.

# The fiscal effect of immigration: expenditures

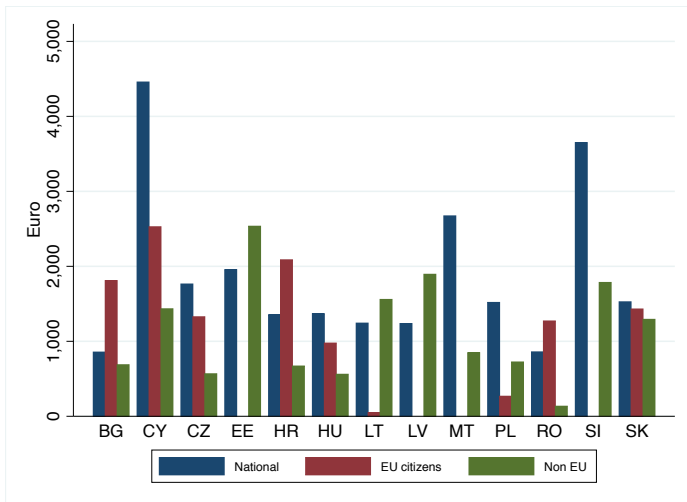
Decomposition of expenditure for benefits and pensions by citizenship, EU15



In all EU15 countries nationals account for a substantially higher share of expenditures than their population share (see next slide).

# The fiscal effect of immigration: expenditures

Total benefits and pensions per capita, non-EU15

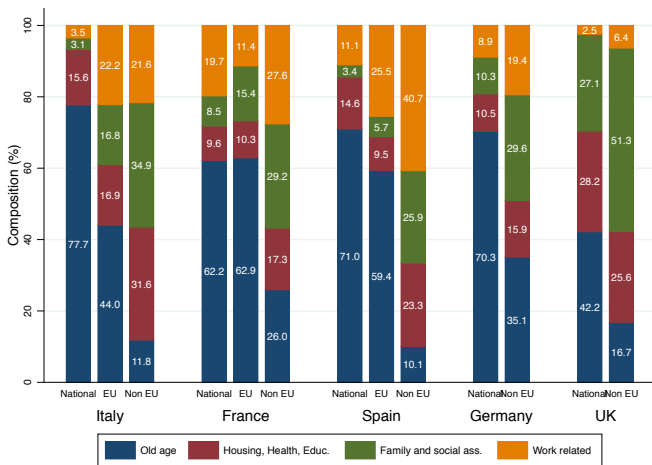


Notes: Our calculations using UDB SILC data. For EE, LV, MT and SI, Nationals also include EU citizens. Note: less than 30 obs in SILC data for EU-citizens for RO, PL, LT; less than 30 obs in SILC data for non-EU citizens for SK, RO, HU.

# Composition of public expenditures, by group

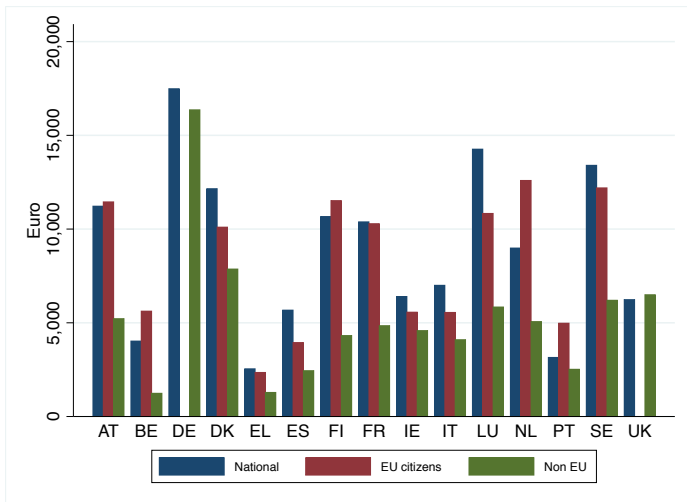
Decomposition of aggregate public benefits and pensions by category and citizenship, selected countries

Higher incidence of country nationals on benefits expenditures largely due to higher receipt of pensions and health-related expenditures



# The fiscal effect of immigration: revenues

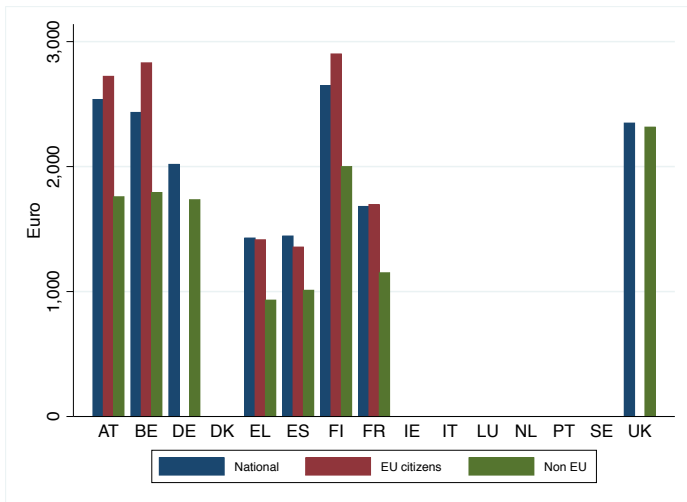
Total **direct** taxes and SSC per capita, EU15



In many countries, nationals' per capita contributions higher than immigrants' (esp. non-EU), reflecting differences in per capita income

# The fiscal effect of immigration: revenues

Total **indirect** taxes per capita, EU15



In many countries, nationals' per capita contributions higher than immigrants' (esp. non-EU), reflecting differences in per capita income

# Putting together revenues and expenditures

- ▶ We can now compute for each country the per capita difference between the amount paid in income tax and SSC, and the amount of benefits received by each of the three population groups.
- ▶ Note that interpreting such a difference as the average net fiscal contribution of individuals of each group may be misleading:
  - ▶ Not all sources of government revenues and all items of government expenditures are included.



# Putting together revenues and expenditures

## Revenues

- ▶ Revenues: only personal income taxes, social security contributions, and some type of capital taxes, and indirect taxation included
  - ▶ Taxes not included: taxes on production (taxes on land, building and other structures, taxes on international transactions, taxes on pollution, ...) and corporate taxes. These are sources of revenues that cannot be credibly traced down to a specific group of the population.

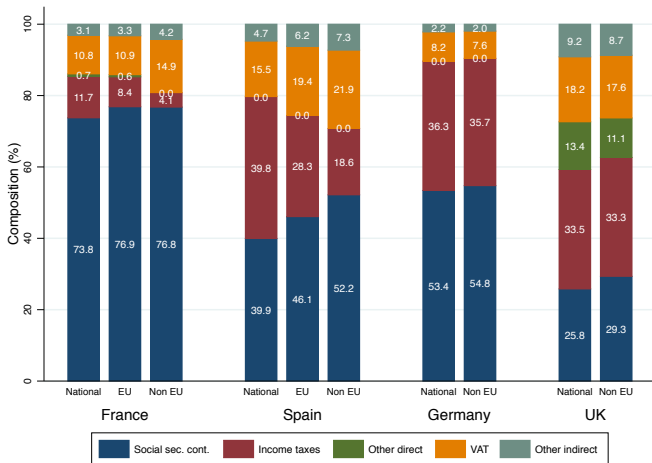
# Putting together revenues and expenditures

## Expenditures

- ▶ Expenditures: only in-kind expenditures for health, education and social housing and in-cash benefits are included
  - ▶ In 2015, these account for about **63.5% of total expenditures**, ranging between 72% in Denmark and 53% in Hungary.
  - ▶ Expenditures for public goods and services that are likely provided in the same amount and at the same cost regardless of population size (e.g. national defense), or whose cost of provision is very likely to be lower than the average cost (road maintenance, garbage collection) not included.
- ▶ Note also that cross-country comparisons in the amount of the differences are difficult
- ▶ The following graphs' main purpose is to facilitate within-country comparisons across different population groups

# Composition of Taxes

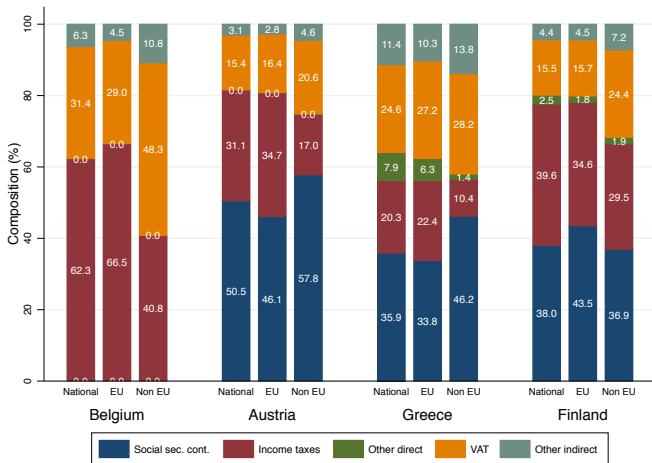
Composition of direct and indirect taxes, ITT-available EU15 countries



Notes: Our calculations using UDB SILC data.

# Composition of Taxes

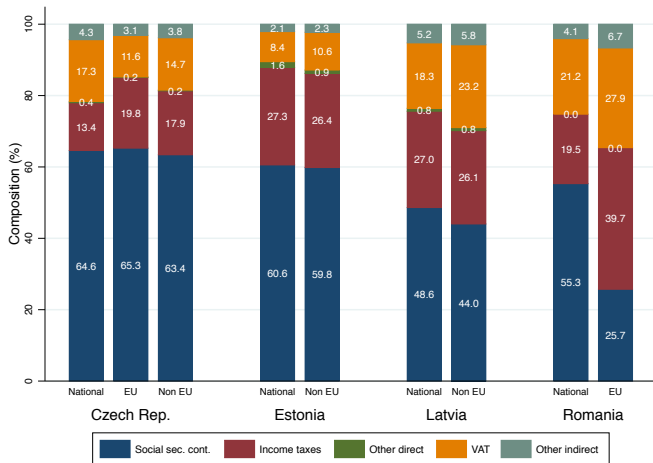
Composition of direct and indirect taxes, ITT-available EU15 countries



Notes: Our calculations using UDB SILC data.

# Composition of Taxes

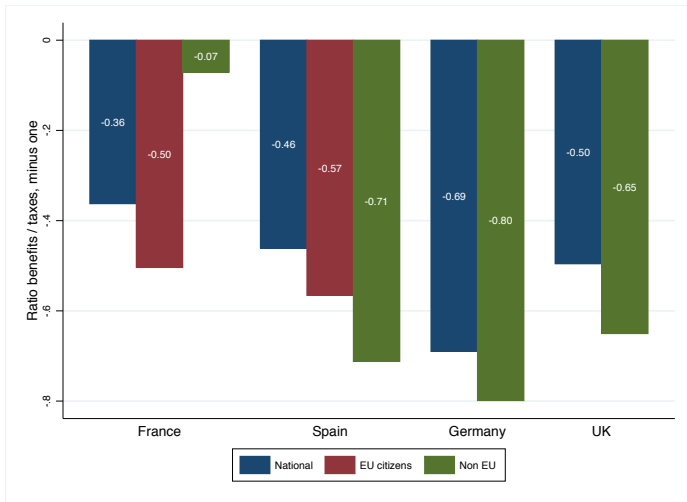
Direct and indirect taxes, ITT-available non-EU15 countries



Notes: Our calculations using UDB SILC data.

# Percentage gains by citizenship

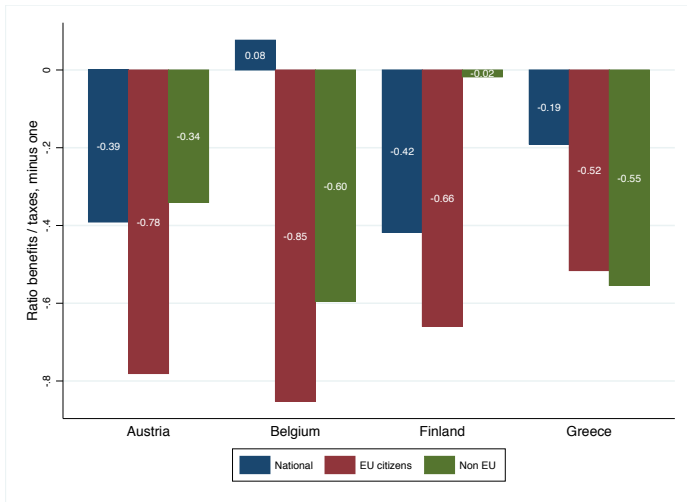
Total (direct and indirect) taxes and total revenues, ITT-available EU15 countries



Notes: Our calculations using UDB SILC data.

# Percentage gains by citizenship

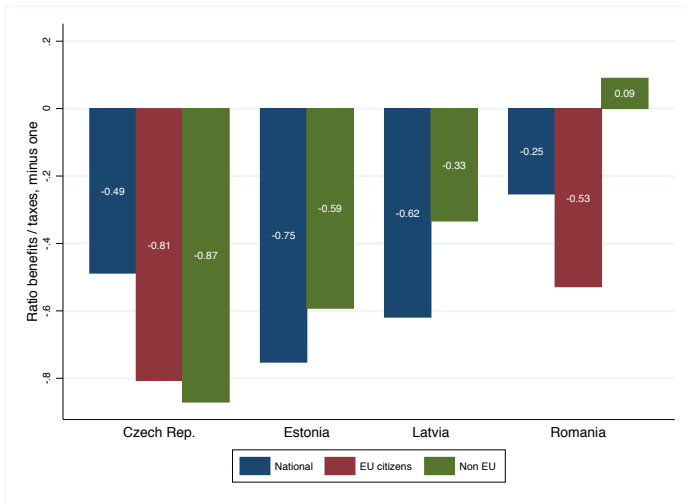
Total (direct and indirect) taxes and total revenues, ITT-available EU15 countries



Notes: Our calculations using UDB SILC data.

# Percentage gains by citizenship

Total (direct and indirect) taxes and total revenues, ITT-available non-EU15 countries



Notes: Our calculations using UDB SILC data.



# Open issues: Validation of VAT revenues

Using ITT and COFOG

Country	COFOG VAT	ITT VAT	Share (%)
Romania	12939.2	4846.08	37.45
Estonia	1872.5	874.3	46.7
Czech Rep.	12217.2	6324.7	51.77
France	151622	85406.12	56.33
UK	177969	100888.2	56.69
Finland	18974	11229.48	59.18
Germany	211616	128379.49	60.67
Latvia	1876.3	1204.73	64.21
Austria	26231.8	17844.2	68.03
Spain	69982	50379.54	71.99
Greece	12885	10449.1	81.1
Belgium	27546.6	22869.84	83.0

Notes: Variables are expressed in million Euros.

# The fiscal effect of immigration: revenues - expenditures

## Stylized facts

- ▶ In several countries the average difference between payments and benefits receipts for immigrants is higher than for nationals.
- ▶ EU immigrants tend to make larger contributions than non-EU nationals, especially in the EU 15 countries.

# The fiscal effect of immigration: revenues - expenditures

Average per capita differences between taxes and SSC - benefits, EU15

	Nationals	EU citizens	Non EU citizens
Austria	2,899.7	8,589.4	705.9
Belgium	-558.0	3,272.8	-1,304.5
Germany	11,385.4	n.a.	12,651.3
Denmark	4,521.6	3,794.9	2,470.3
Greece	-680.9	508.4	281.8
Spain	1,730.9	1,690.7	1,406.5
Finland	2,958.7	6,663.6	-1,882.7
France	3,530.7	4,310.4	41.8
Ireland	1,856.7	1,986.5	1,692.2
Italy	1,674.0	3,826.8	3,010.8
Luxembourg	-978.4	1,367.7	-3,685.3
Netherlands	1,633.3	9,177.1	2,076.8
Portugal	180.5	755.0	1,556.0
Sweden	5,895.3	6,726.4	1,497.3
UK	1,625.2	n.a.	3,379.3

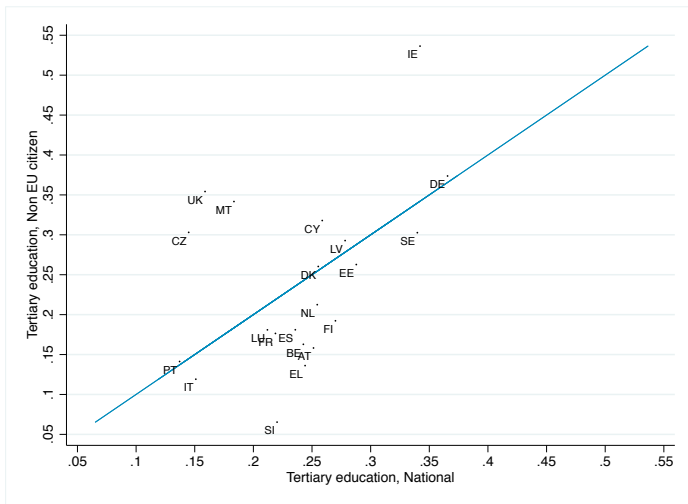
Source: our calculations using extended version of EU-ROMOD. For DE, EE, LV, MT and SI, Nationals also include EU citizens. For THE UK non-EU citizens are considered as non nationals.

# Conclusions and outlook for future work

- ▶ Our analysis shows that immigrants **tend to contribute proportionally more than nationals**.
- ▶ Significant **cross-country variability**, due to demographic characteristics of the population, and to differences in the tax and benefit systems.
- ▶ Our extension of EUROMOD allows for the analysis of policy simulations, both at the single country and at the EU28 level.
- ▶ We are currently working on the following simulations:
  - ▶ **Simulation 1:** "collapse of the EU"
  - ▶ **Simulation 2:** "Welcoming EU"
  - ▶ **Simulation 3/4:** "extending required period of residence for conditional benefits by 5/10 years"
  - ▶ Any suggestion for “**sensible**” simulations?

# Migration in the EU, where we stand

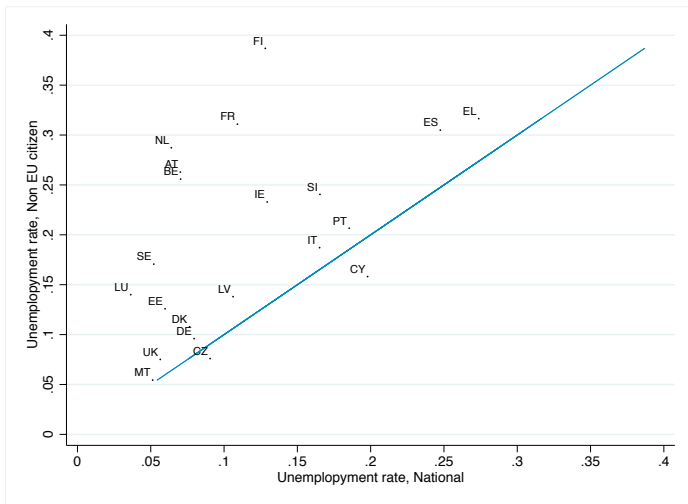
% Tertiary educated non-EU immigrants vs. natives



Notes: Our calculations using UDB SILC data. Countries with less than 100 observations excluded. For DE, EE, LV, MT and SI, Nationals also include EU citizens. For UK non-EU citizens are considered as non nationals

# Migration in the EU, where we stand

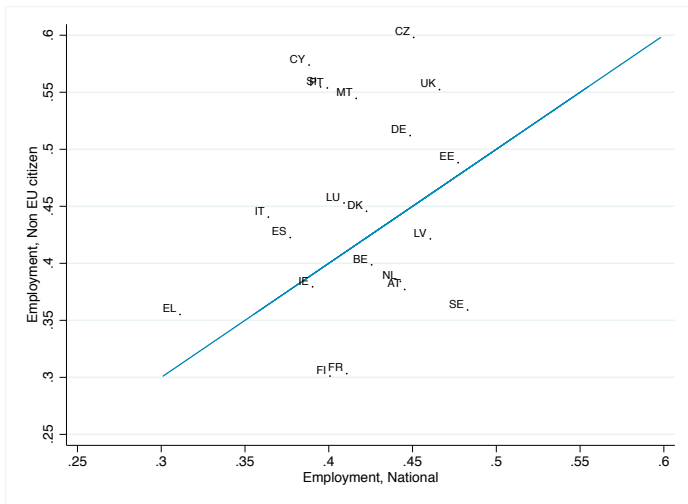
Unemployment rate (on total work force) of non-EU immigrants vs. natives



Notes: Our calculations using UDB SILC data. Countries with less than 100 observations excluded. For DE, EE, LV, MT and SI, Nationals also include EU citizens. For UK non-EU citizens are considered as non nationals

# Migration in the EU, where we stand

Employment rate (on total population) of non-EU immigrants vs. natives



Notes: Our calculations using UDB SILC data. Countries with less than 100 observations excluded. For DE, EE, LV, MT and SI, Nationals also include EU citizens. For UK non EU citizens are considered as non nationals.