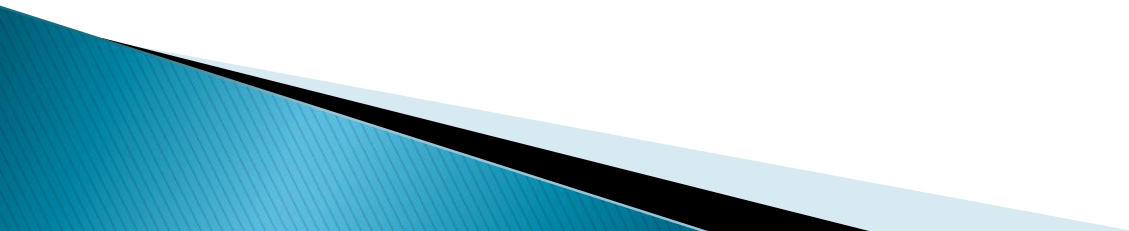


The effect of EU enlargements and labour market openings on migration

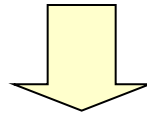
Mariola Pytliková

VSB–Technical University Ostrava, KORA and CReAM



Emigration from Central and Eastern Europe

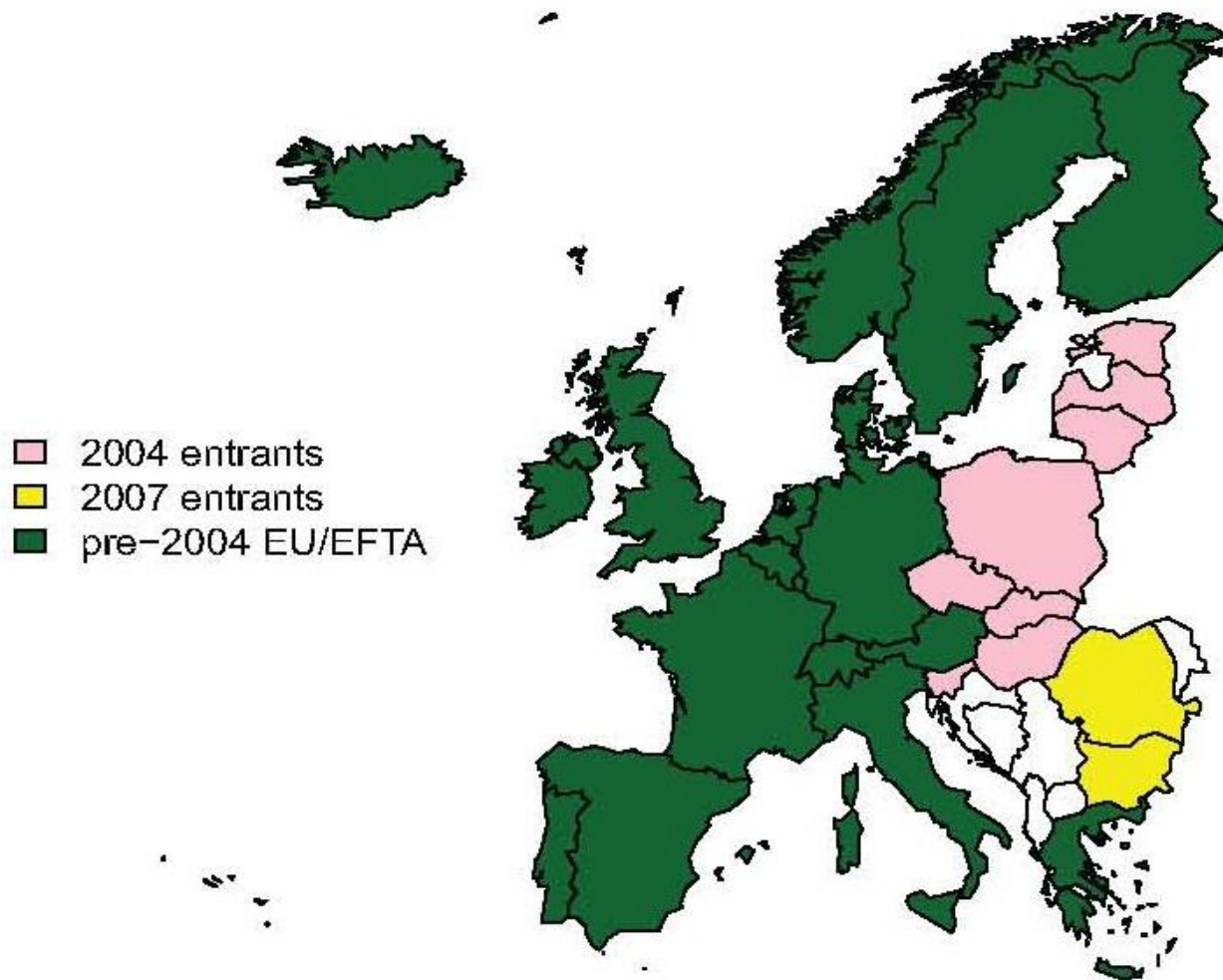
- After the fall of Iron Curtain, 1989, CEECs became a new source of emigration
- EU enlargements towards Central and Eastern European countries, 2004 and 2007



Given a geographical and cultural proximity and large economic differences - huge income gaps, growing unemployment in CEECs, emigration restrictions before 1989 = feelings of freedom

=> **Western Europe fears a mass migration**

EU/EFTA Enlargement



Emigration from Central and Eastern Europe

EU enlargement towards the East - 2004 enlargement:

- 10 new countries joined EU15 in May 2004;
- EU Acquis: Free movement of people; Fear of mass migration; possibility of restrictions on mobility
- => "transition periods"; Rule 3+2+2 years
- All in all, the "old" EU/EEA countries could keep their labor markets restricted to the new members up to 7 years from the enlargement (2011).

Emigration from Central and Eastern Europe

1st EU enlargement towards the East - 2004 enlargement:

- UK, Ireland and Sweden have opened from day one of EU enlargement in May 2004, the rest of "old" EU members imposes restrictions to free movement of workers.
- 2006 - Spain, Portugal, Greece, Italy, Finland and Iceland
- 2007 - the Netherlands and Luxembourg (November 2007)
- July 2008 - France
- May 2009 - Belgium, Denmark and Norway
- May 2011: Austria, Germany and Switzerland hold a maximum period of restrictions.

Emigration from Central and Eastern Europe

2nd EU enlargement towards the East - 2007 enlargement:

- **Bulgaria and Romania** joined the EU on January 1, 2007.
- Restrictions on labour markets possible until 2014;
- **Open doors for 2007 entrants:**
 - 2007 - Finland, Sweden, Cyprus, Czech Republic, Estonia, Latvia, Lithuania, Poland, Slovakia, Slovenia
 - 2009 - Denmark, Greece, Portugal, Spain
 - 2011 - Spain reimposes restrictions for workers from Romania
 - 2012 - Iceland, Italy
 - 2014 - the rest of EU holds a maximum period of restrictions

Motivation –previous evidence

- out-of-sample historical data on migration;
- and/or past enlargement experience;
- -> extrapolation to predict East-West migration;
- in the EU context: analyses of migration flows into one destination country, specifically Germany;
- On the basis of obtained coefficients forecasts: => problems related to (double) out-of-sample forecasts and the assumption of invariance of migration behavior across a space.

Motivation

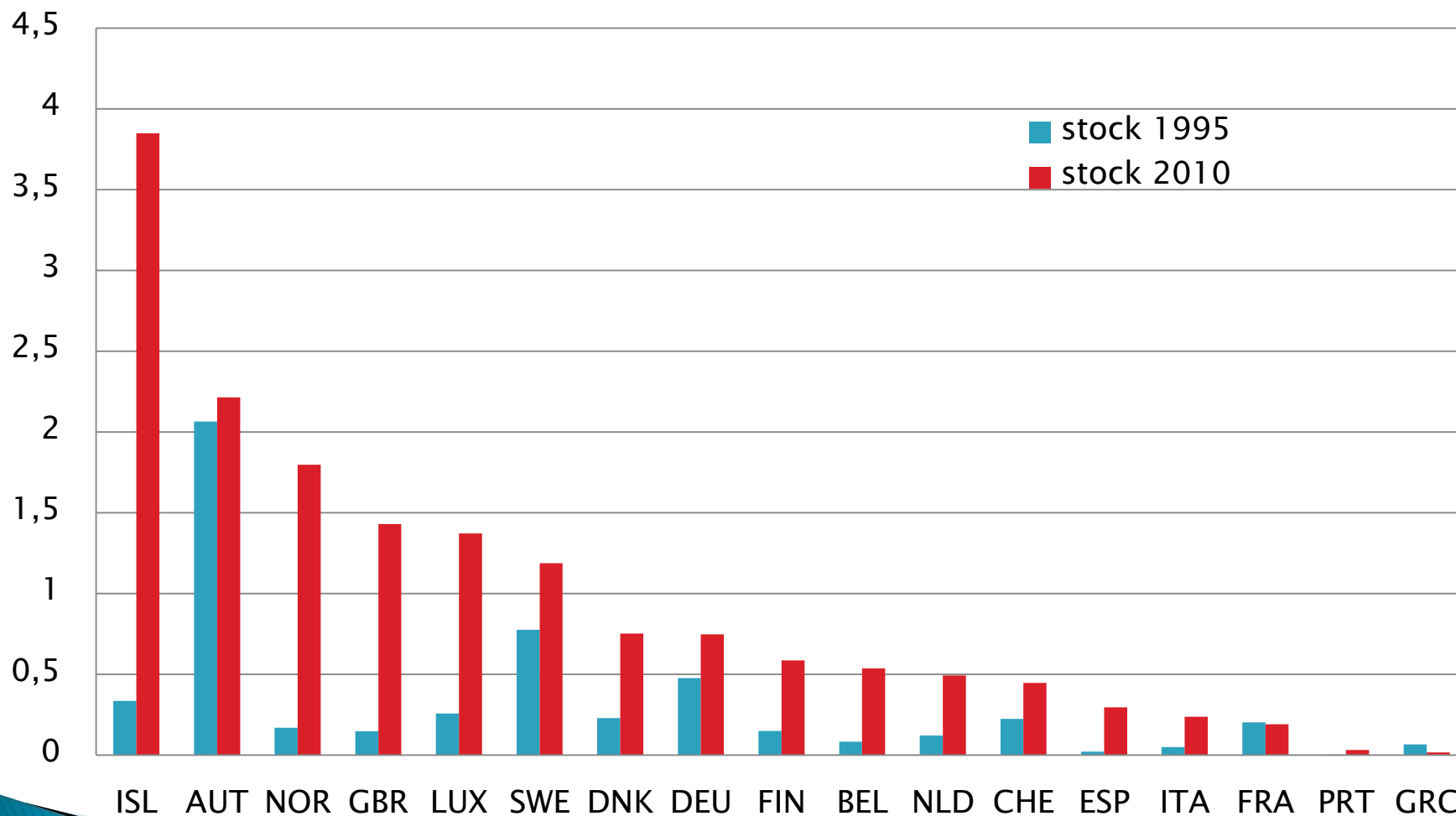
- In this paper:
 - I use actual numbers of CEE emigrants = true behavior of CEE emigrants,
 - Extended time series 1995 – 2010
 - I exploit a “natural experiment”: different timing of lifting of restrictions to the free movement of workers on migration
 - ⇒ I estimate a difference-in-differences and triple DDD estimator on the flow of migrants from 8 CEECs and Bulgaria and Romania into 18 EEA+CH countries .

Data description

- Immigration flows and foreign population stock into 42 destinations from all world source countries.
- For 27 destinations data collected from national statistical offices
- for 6 OECD countries from OECD International Migration Database (Chl, Isr, Kor, Mex, Rus and Tur)
- For 9 others from Eurostat (Bul, Cro, Cyp, Est, Lv, Ltv, Mal, Rom and Slo)
- Period: 1980 to 2010.
- **In this paper – focus on 22 destinations and migration from CEE new EU members over time 1995–2010**
- Additional control variables
 - *Economic variables*
 - *Demographic variables,*
 - *Distance variables:*
 - *Physical – distance in km*
 - *Linguistic constructed by Adsera&Pytlikova, 2012 based on Ethnologue*
 - *Neighboring dummy*
- Sources: WB–WDI, ILO, OECD
- Unbalanced panel.

EU8 foreigners in EEA countries as a % of destination population. 1995 & 2010.

Migration stocks from EU-8 as % of population

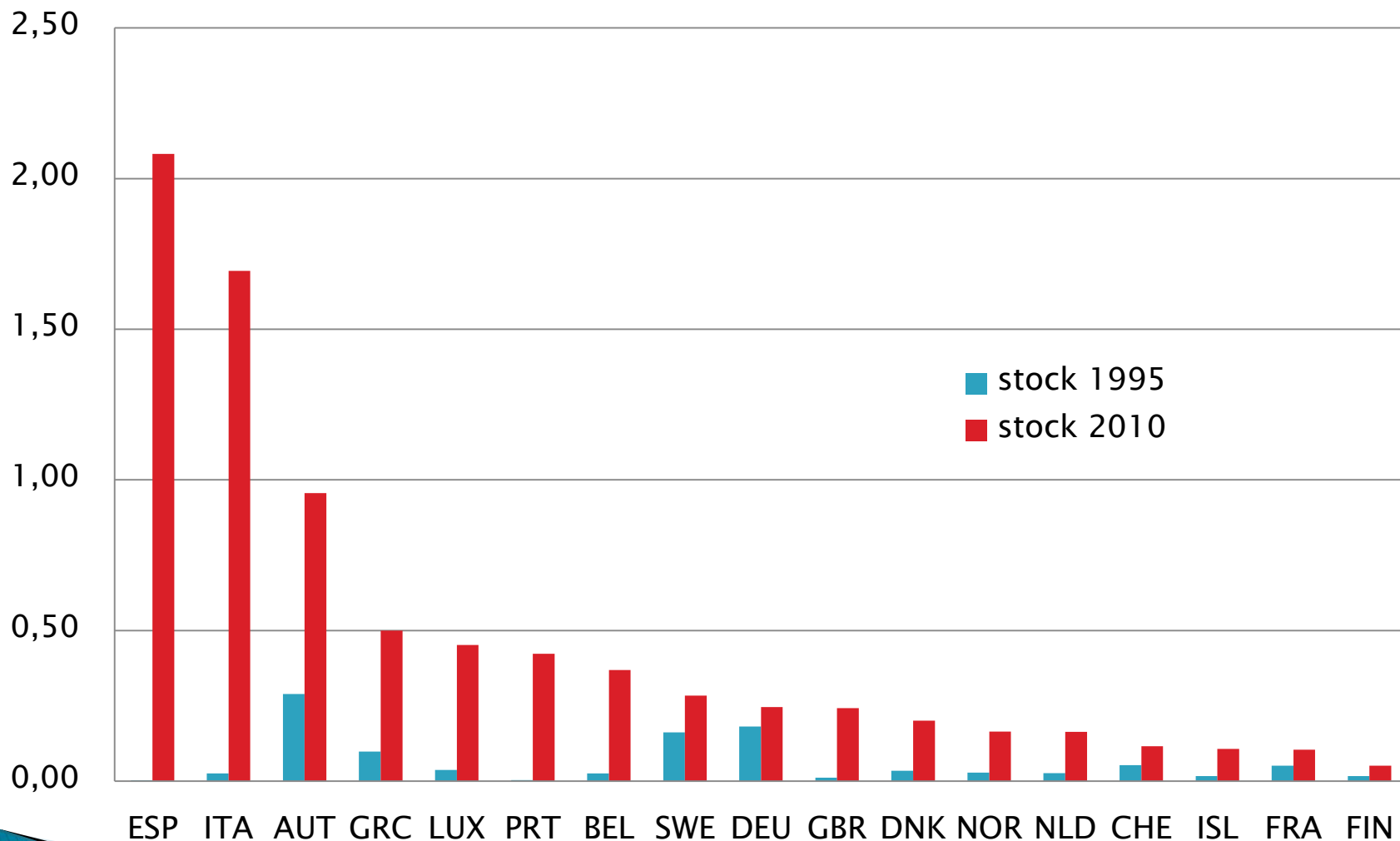


Source: National statistical offices; Own calculations.

Pytlikova: Clermont-Ferrand, January 2014

EU8 foreigners in EEA countries as a % of destination population. 1995 & 2010.

Migration stocks from EU-2 as % of population



Source: National statistical offices; Own calculations.

Model

The basic DD econometric model has the following form:

$$\ln m_{ijt} = \gamma_0 + \delta_j + \delta_i + \theta_t + \gamma_2 OPEN_{ij} + \gamma_3 \ln(GDP_j)_{t-1} + \gamma_4 \ln(GDP_i)_{t-1} + \gamma_5 \ln(GDP_i)_{t-1}^2 + \gamma_6 \ln u_{jt-1} + \gamma_7 \ln u_{it-1} + \gamma_8 \ln s_{ijt-1} + \gamma_9 lingprox_{ij} + \gamma_{10} \ln dist_{ij} + \gamma_{11} neighbour + \varepsilon_{ijt}$$

- **mijt** – emigration rate = gross migration flow per source country population,
- **full set of year dummies, and destination and country of origin effects**
- **OPEN_{ij}** – a Labour Market Opening policy variable, to be equal to 1 if there is a free movement of workers between a particular destination and source country, and 0 otherwise.
- **GDP_j, GDP_i, GDP_{i2}** – GDP per capita, PPP, constant 2005 US\$
- **U_j, U_i** – unemployment rates
- **Sijt-1** is stock of immigrants per source country population
- **Lingprox**– linguistic proximity index
- **dist_{ij}** is distance in km
- **Neighbour**
- **Robust st errors clustered** on the level of pair of countries

All vars in logs except dummies and ling proximity index.

Overview of policy changes with respect to lifting restrictions on the access to labor market for workers from the new EU 2004 member states

| EEA/EFTA countries | Lifting restrictions on free movement of workers | Treatments and Controls | Pre-treatment period | Post-treatment period |
|--------------------|--|-------------------------|----------------------|-----------------------|
| Austria | May 2011 | Control | 1995–2010 | – |
| Belgium | May 2009 | Treatment | 1995–2008 | 2009–2010 |
| Denmark | May 2009 | Treatment | 1995–2008 | 2009–2010 |
| Finland | May 2006 | Treatment | 1995–2005 | 2006–2010 |
| France | July 2008 | Treatment | 1995–2007 | 2008–2010 |
| Germany | May 2011 | Control | 1995–2010 | – |
| Greece | May 2006 | Treatment | 1995–2005 | 2006–2010 |
| Iceland | May 2006 | Treatment | 1995–2005 | 2006–2010 |
| Ireland | May 2004 | Treatment | 1995–2003 | 2004–2010 |
| Italy | July 2006 | Treatment | 1995–2005 | 2006–2010 |
| Luxembourg | November 2007 | Treatment | 1995–2007 | 2008–2010 |
| Netherlands | May 2007 | Treatment | 1995–2006 | 2007–2010 |
| Norway | May 2009 | Treatment | 1995–2008 | 2009–2010 |
| Portugal | May 2006 | Treatment | 1995–2005 | 2006–2010 |
| Spain | May 2006 | Treatment | 1995–2005 | 2006–2010 |
| Sweden | May 2004 | Treatment | 1995–2003 | 2004–2010 |
| Switzerland | May 2011 | Control | 1995–2010 | – |
| UK | May 2004 | Treatment | 1995–2003 | 2004–2010 |

Overview of policy changes with respect to lifting restrictions on the access to labor market for workers from Bulgaria and Romania

| EEA/EFTA countries | Lifting restrictions on free movement of workers | Treatments and Controls | Pre-treatment period | Post-treatment period |
|-----------------------|--|-------------------------|----------------------|-----------------------|
| Austria | January 2014 | Control | 1995–2010 | – |
| Belgium | January 2014 | Control | 1995–2010 | – |
| Denmark | May 2009 | Treatment | 1995–2008 | 2009–2010 |
| Finland | January 2007 | Treatment | 1995–2006 | 2007–2010 |
| France | January 2014 | Control | 1995–2010 | – |
| Germany | January 2014 | Control | 1995–2010 | – |
| Greece | January 2009 | Treatment | 1995–2008 | 2009–2010 |
| Iceland | January 2012 | Control | 1995–2010 | – |
| Ireland | January 2014 | Control | 1995–2010 | – |
| Italy | January 2012 | Control | 1995–2010 | – |
| Luxembourg | January 2014 | Control | 1995–2010 | – |
| Netherlands | January 2014 | Control | 1995–2010 | – |
| Norway | January 2014 | Control | 1995–2010 | – |
| Portugal | January 2009 | Treatment | 1995–2008 | 2009–2010 |
| Spain | January 2009 (Aug 2011) | Treatment | 1995–2008 | 2009–2010 |
| Sweden | January 2007 | Treatment | 1995–2006 | 2007–2010 |
| Switzerland | January 2014 | Control | 1995–2010 | – |
| UK | January 2014 | Control | 1995–2010 | – |
| <i>Robustness:</i> | | | | |
| Hungary | January 2009 | Treatment | 1995–2006 | 2007–2010 |
| Other EU8 dest | January 2007 | Treatments | 1995–2006 | 2007–2010 |

EU enlargement effect on migration

Model with both, the labour market openings and the EU enlargement effects:

$$\ln m_{ijt} = \gamma_0 + \delta_j + \delta_i + \theta_t + \gamma_1 EUenl_{ij} + \gamma_2 OPEN_{ij} + \gamma_3 \ln(GDP_j)_{t-1} + \gamma_4 \ln(GDP_i)_{t-1} + \gamma_5 \ln(GDP_i)_{t-1}^2 \\ + \gamma_6 \ln u_{jt-1} + \gamma_7 \ln u_{it-1} + \gamma_8 \ln s_{ijt-1} + \gamma_9 lingprox_{ij} + \gamma_{10} \ln dist_{ij} + \gamma_{11} neighbour + \varepsilon_{ijt}$$

- **EUenlij** – the EU enlargement policy dummy,
 - equal to 1 for pairs of 17 EEA destination countries and the EU8 and EU2 source countries for the period after year 2004 and 2007, respectively.
 - equal to 0 for the pre-treatment period for those pair of countries, and for pairs of the non-EU destinations – Australia, Canada, New Zealand, Switzerland and USA – and the EU8– and EU2– source countries.
- In addition, I run the econometric models above with pairs of country fixed effects in order to capture (unobserved) traditions, historical and cultural ties between a particular pair of destination and origin countries:

$$\ln m_{ijt} = \gamma_0 + \delta_{ij} + \theta_t + \gamma_1 EUenl_{ij} + \gamma_2 OPEN_{ij} + \gamma_3 \ln(GDP_j)_{t-1} + \gamma_4 \ln(GDP_i)_{t-1} + \gamma_5 \ln(GDP_i)_{t-1}^2 \\ + \gamma_6 \ln u_{jt-1} + \gamma_7 \ln u_{it-1} + \gamma_8 \ln s_{ijt-1} + \gamma_9 lingprox_{ij} + \gamma_{10} \ln dist_{ij} + \gamma_{11} neighbour + \varepsilon_{ijt}$$

Difference-in-Differences analyses of labour market openings of EU countries on migration flows from new EU10 member states, 22 destinations, years 1995–2010.

| VARIABLES | EU8+EU2 | | EU8 | | EU2 | |
|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|
| LMO | 0.378*** | 0.353*** | 0.298*** | 0.348*** | 0.536*** | 0.524* |
| Dest & Origin FE | YES | | YES | | YES | |
| Pair of country FE | YES | | YES | | YES | |
| Constant | -89.043*** | -93.528*** | -116.716*** | -131.480*** | 456.667 | 496.926 |
| Observations | 2,424 | 2,424 | 1,910 | 1,910 | 514 | 514 |
| Adjusted R-sq | 0.861 | 0.905 | 0.868 | 0.911 | 0.896 | 0.8976 |

Dependent Variable: Ln(Emigration Rate). Controls included: networks, economic and distance variables, time dummies. Robust standard errors clustered on country pairs level, *** p<0.01, ** p<0.05, * p<0.1; The sample of destinations consists of the “old” 17 EEA countries and 5 non-EU countries: Australia, Canada, New Zealand, Switzerland and the United States.

Difference-in-Differences analyses, Controls for the EU enlargement in order to separate the labour market openings effects from the EU enlargement effects, 22 destinations, years 1995-2010.

| VARIABLES | EU8+EU2 | | EU8 | | EU2 | |
|--------------------|------------|------------|-------------|-------------|----------|----------|
| LMO | 0.290*** | 0.268*** | 0.248** | 0.282*** | 0.363** | 0.353 |
| EUenl | 0.308*** | 0.334*** | 0.169 | 0.246** | 0.798*** | 0.818*** |
| Dest & Origin FE | YES | | YES | | YES | |
| Pair of country FE | YES | | YES | | YES | |
| Constant | -90.909*** | -96.769*** | -117.518*** | -133.533*** | 425.877 | 475.934 |
| Observations | 2,424 | 2,424 | 1,910 | 1,910 | 514 | 514 |
| Adjusted R-sq | 0.862 | 0.9065 | 0.868 | 0.9116 | 0.899 | 0.9012 |

Dependent Variable: Ln(Emigration Rate). Controls included: networks, economic and distance variables, time dummies. Robust standard errors clustered on country pairs level, *** p<0.01, ** p<0.05, * p<0.1; The sample of destinations consists of the “old” 17 EEA countries and 5 non-EU countries: Australia, Canada, New Zealand, Switzerland and the United States.

Triple difference (DDD) estimator –2004 EU–8

- ▶ similarly as in DD, but add:
 - Non–experimental group of source countries:
 - Russia, Croatia, Albania and Ukraine sources
 - post–treatment period varies according to the different time of lifting restrictions

DDD analyses of labour market openings and EU enlargements; Period: 1995–2010.
Experimental groups of source countries: Albania, Croatia, Russia and Ukraine.

| VARIABLES | EU8+EU2+4CEECs | | EU8+4CEECs | | EU2+4CEECs | |
|--------------------|----------------|-----------|------------|----------|------------|----------|
| LMO | 0.237*** | 0.338*** | 0.233** | 0.385*** | -0.051 | 0.401* |
| EUenl | 0.594*** | 0.637*** | 0.548*** | 0.596*** | 1.142*** | 1.238*** |
| Dest & Origin FE | YES | | YES | | YES | |
| Pair of country FE | YES | | YES | | YES | |
| Constant | -22.903 | -35.511** | -4.795 | -25.343 | -17.699 | -27.292 |
| Observations | 3,110 | 3,110 | 2,596 | 2,596 | 1,200 | 1,200 |
| Adjusted R-sq | 0.861 | 0.9081 | 0.864 | 0.9130 | 0.886 | 0.9133 |

Dependent Variable: Ln(Emigration Rate). Controls included: networks, economic and distance variables, time dummies. Robust standard errors clustered on country pairs level, *** p<0.01, ** p<0.05, * p<0.1; The sample of destinations consists of the “old” 17 EEA countries and 5 non-EU countries: Australia, Canada, New Zealand, Switzerland and the United States.

**TESTING VALIDITY: Placebo tests: period 1995–2003;
placebo enlargement year for EU8=1997; placebo for EU2=2000**

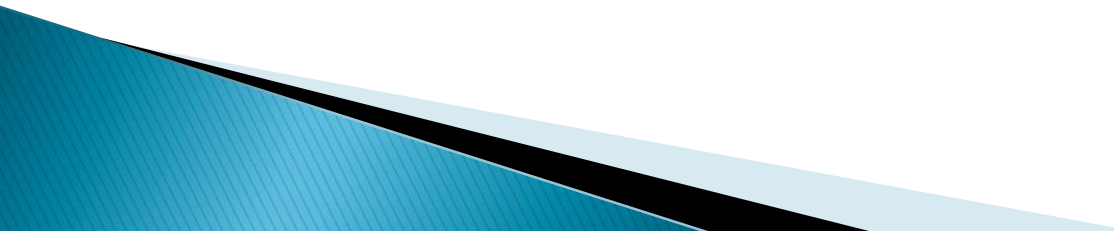
| VARIABLES | EU8+EU2 | | EU8+EU2 | |
|--------------------|-------------|-------------|-------------|-------------|
| | | | | |
| LMO | 0.140 | 0.093 | 0.123 | 0.091 |
| EUenl | | | 0.121 | 0.018 |
| Dest & Origin FE | YES | | YES | |
| Pair of country FE | | YES | | YES |
| Constant | -131.288*** | -162.262*** | -121.079*** | -160.794*** |
| Observations | 1,239 | 1,239 | 1,239 | 1,239 |
| Adjusted R-sq | 0.856 | 0.9175 | 0.856 | 0.9175 |

Dependent Variable: Ln(Emigration Rate). Controls included: networks, economic and distance variables, time dummies. Robust standard errors clustered on country pairs level, *** p<0.01, ** p<0.05, * p<0.1

SUMMARY:

- ▶ A positive effect of labour market openings on migration:
 - migrants move to countries with greater formal labor market access over those in which their access is restricted.
 - The relationships hold even in the most restrictive models with economic and distance indicators, existing immigrant stocks and country or country pair FE.
 - in models without networks, the coefficients on DD and DDD are always significant positive;
 - It holds also for 32 destinations
 - It holds even if I control for the overall effect of the “EU entry” on migration.
 - the estimated “EU entry” effect is positive and significant in all DD and DDD model specifications, and it is larger than the “labour market opening” effect.

FUTURE RESEARCH

- More robustness analyses:
 - restrict to sample of countries with a perfect coverage
 - Models with net migration rate on the RHS
 - Multiple choices and channels studied in my separate paper with John Palmer from PU
- 

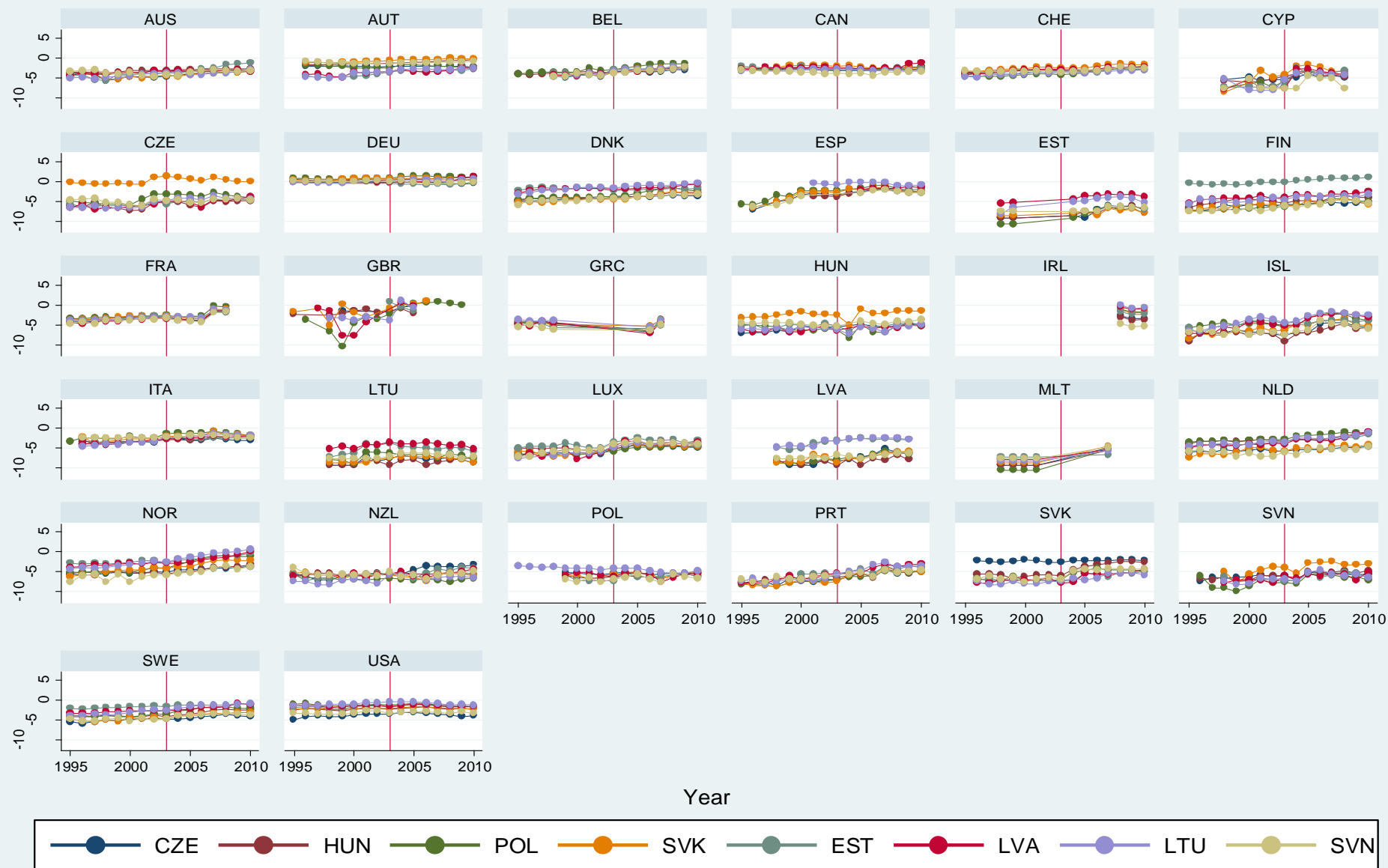
Labor Market Laws and intra-European Migration: The Role of the State in Shaping Destination Choices

By John Palmer, *Princeton University* and Mariola Pytlikova
VSB-TU, KORA and CReAM

- ⇒ Use an employment rights index collected by John Palmer to evaluate how granting employment rights law influence migration.
- ⇒ We study immigrants multiple choices
- ⇒ We study potential mechanisms behind

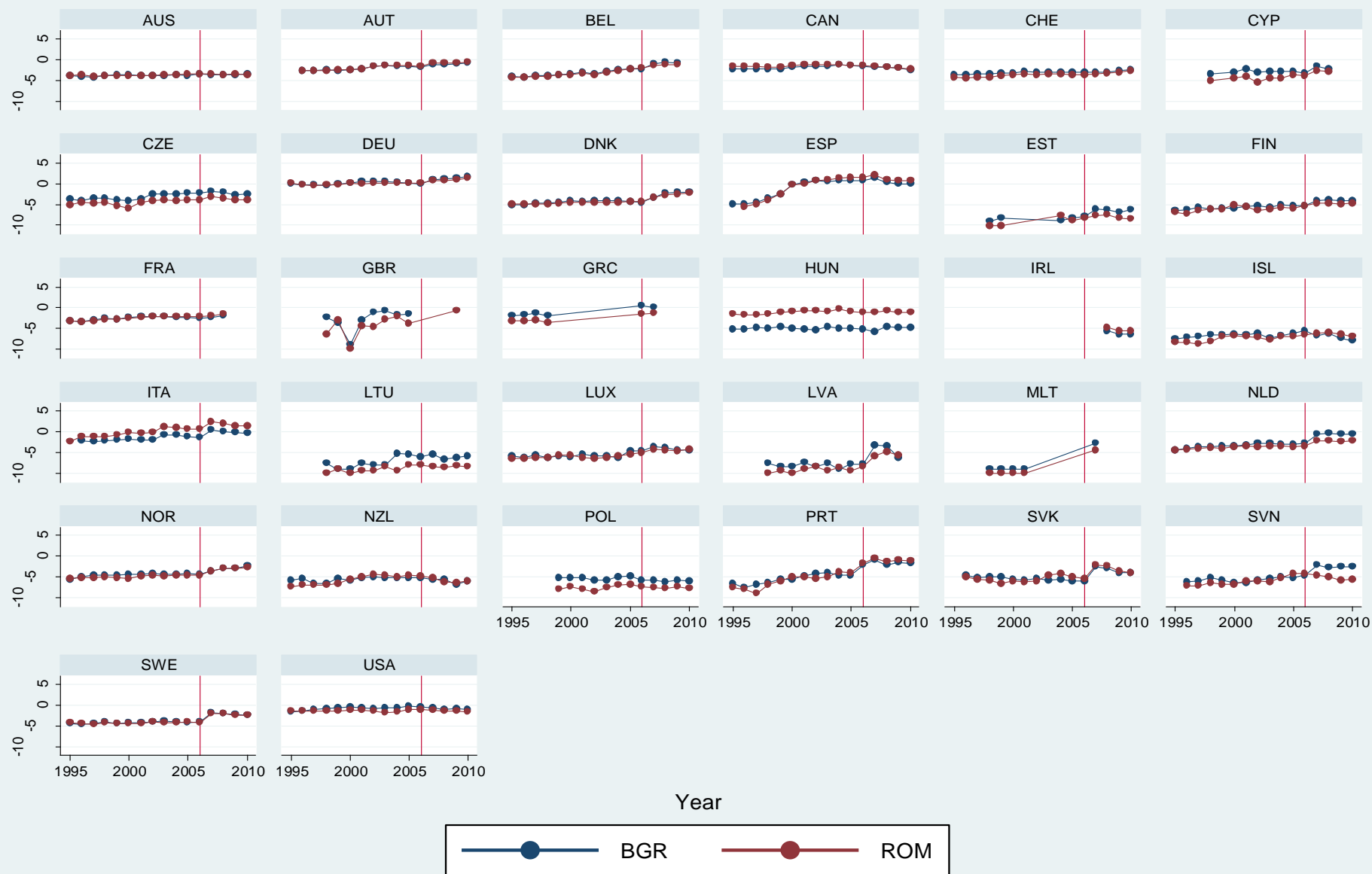
- ⇒ WE FIND:
- ⇒ migrants are attracted to destinations that give them greater formal labor market access.
- ⇒ Decreasing restrictions in one destination diverted migrants from other potential destinations.
- ⇒ The effect of destination labor market access is:
 - ⇒ weaker for destinations with *larger existing co-national networks*, and for migrants from *linguistically closer* countries and from countries with *higher average education*.

Trends in log(emigration rate) from EU8 countries to EEA/EFTA destinations, 95–2010



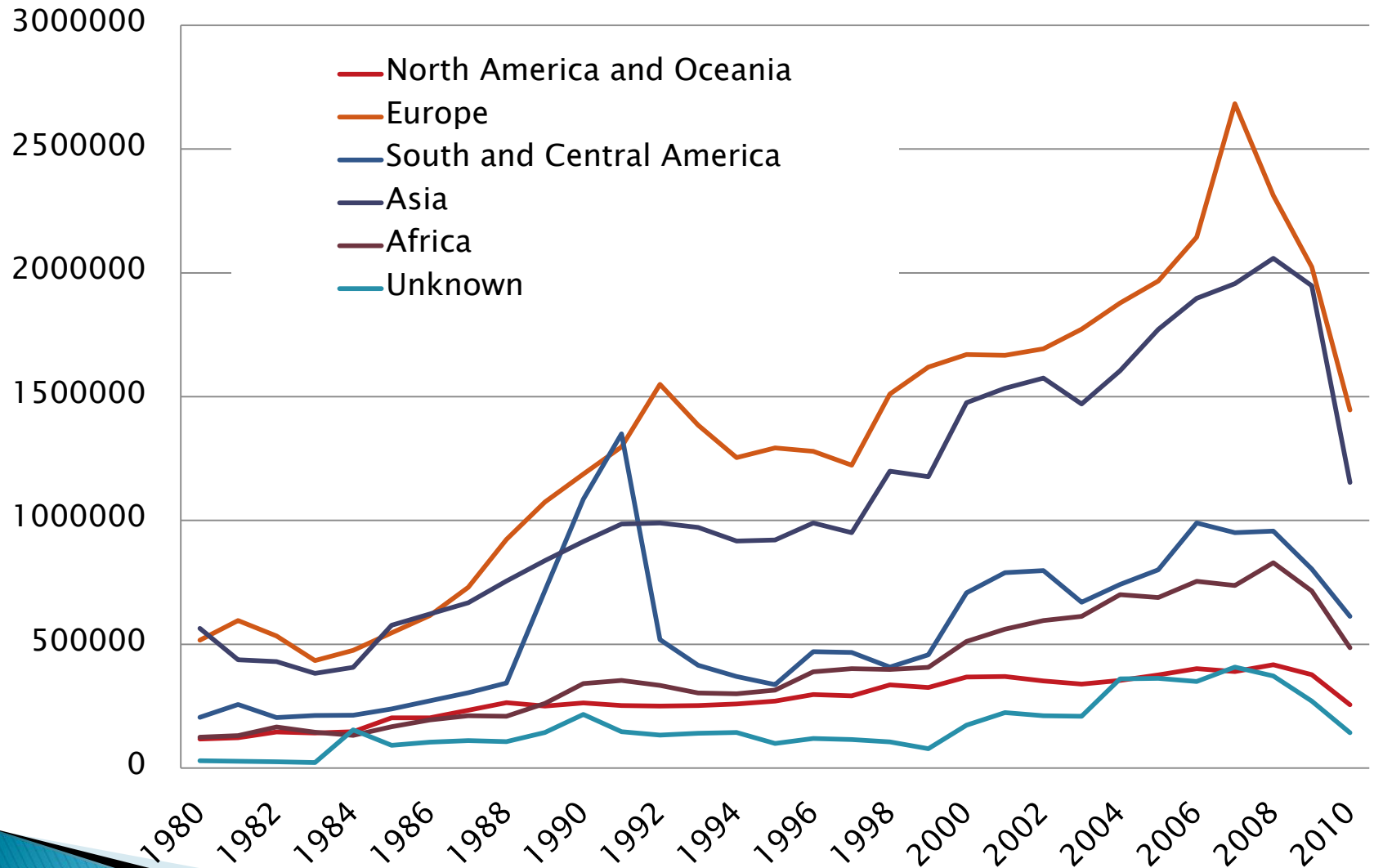
Graphs by 3-letter Code of Destination country i

Trends in log(emigration rate) from EU2 countries to EEA/EFTA destinations, 95–2010

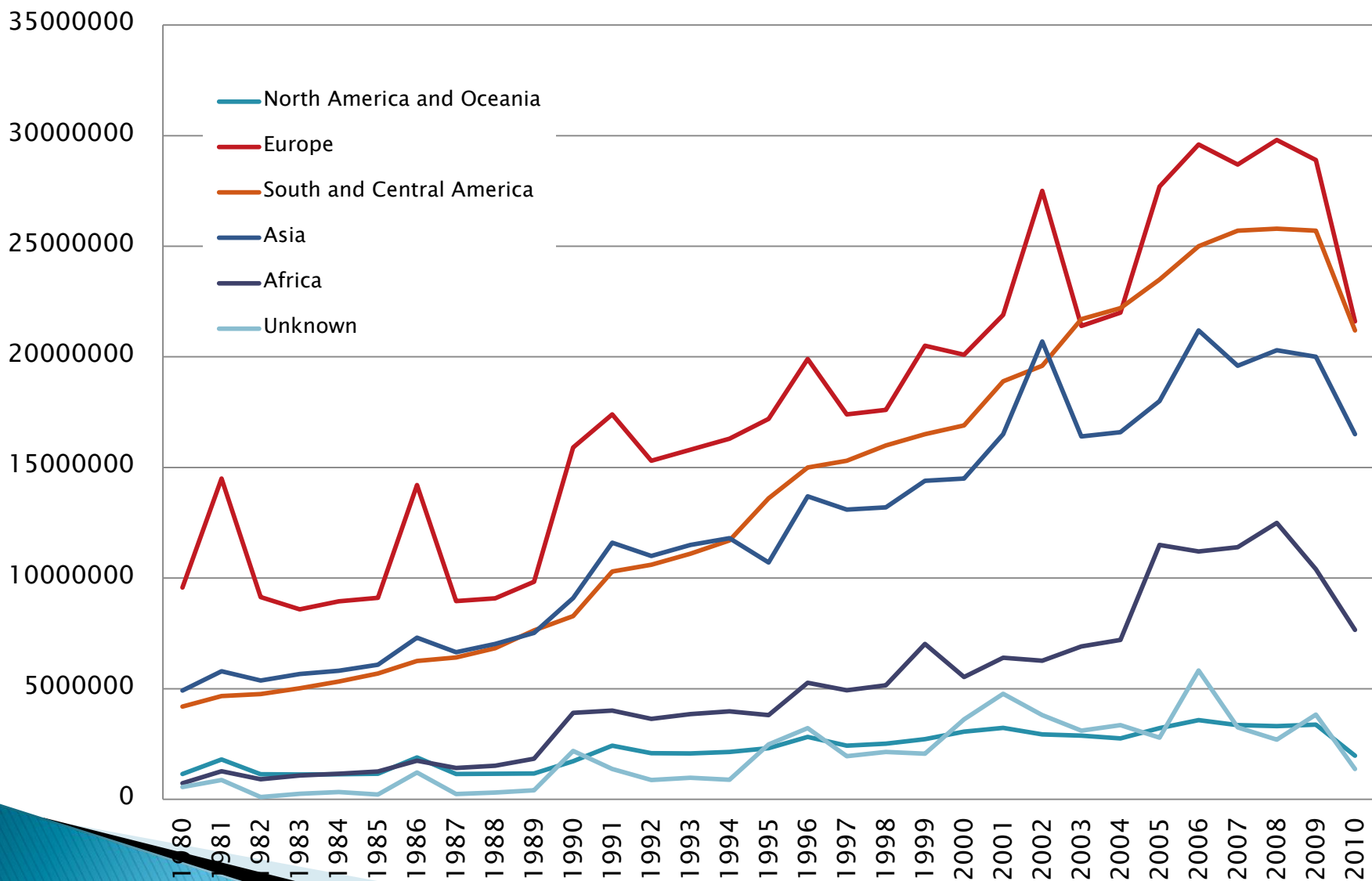


Graphs by 3-letter Code of Destination country i

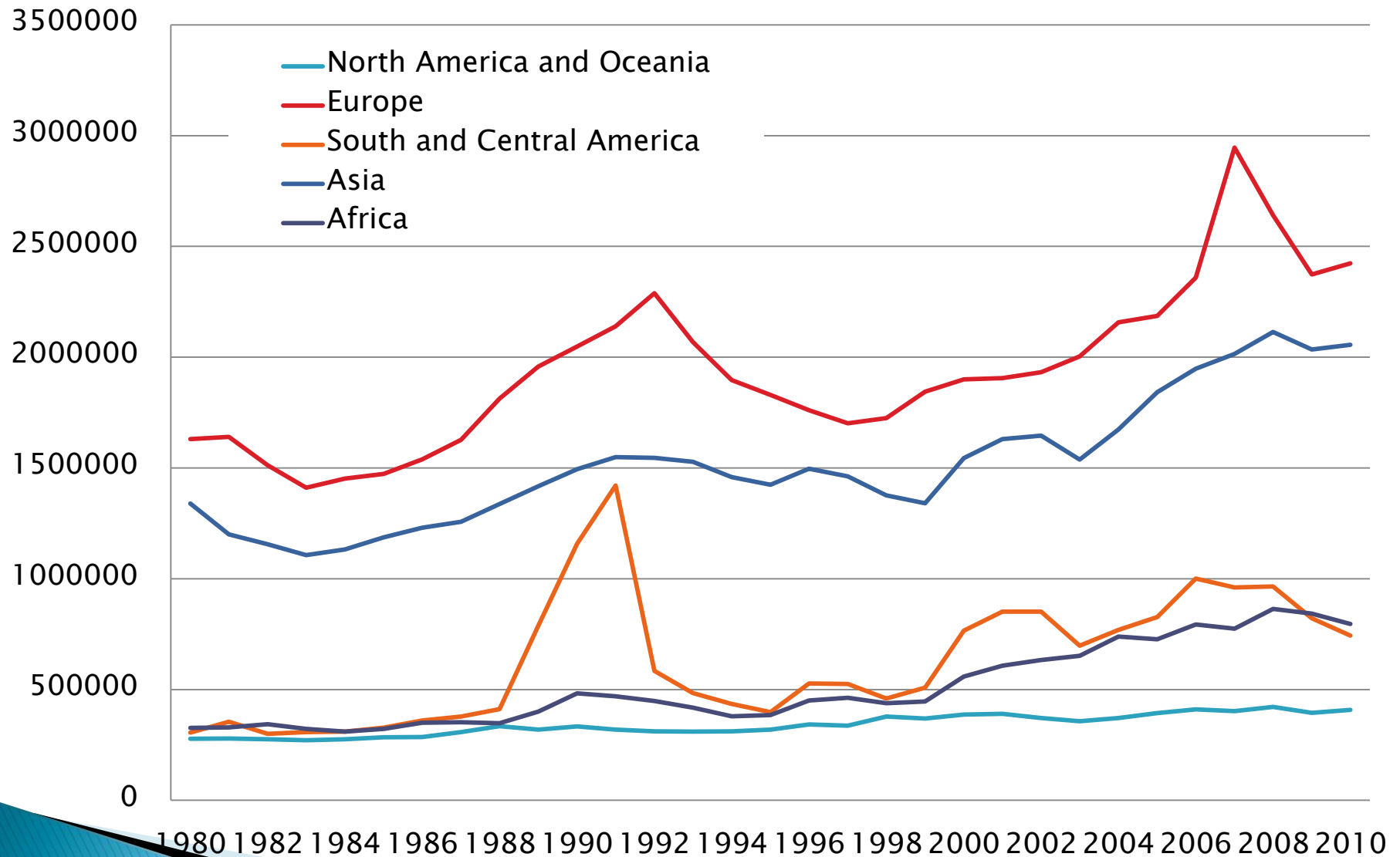
Evolution of migration flows



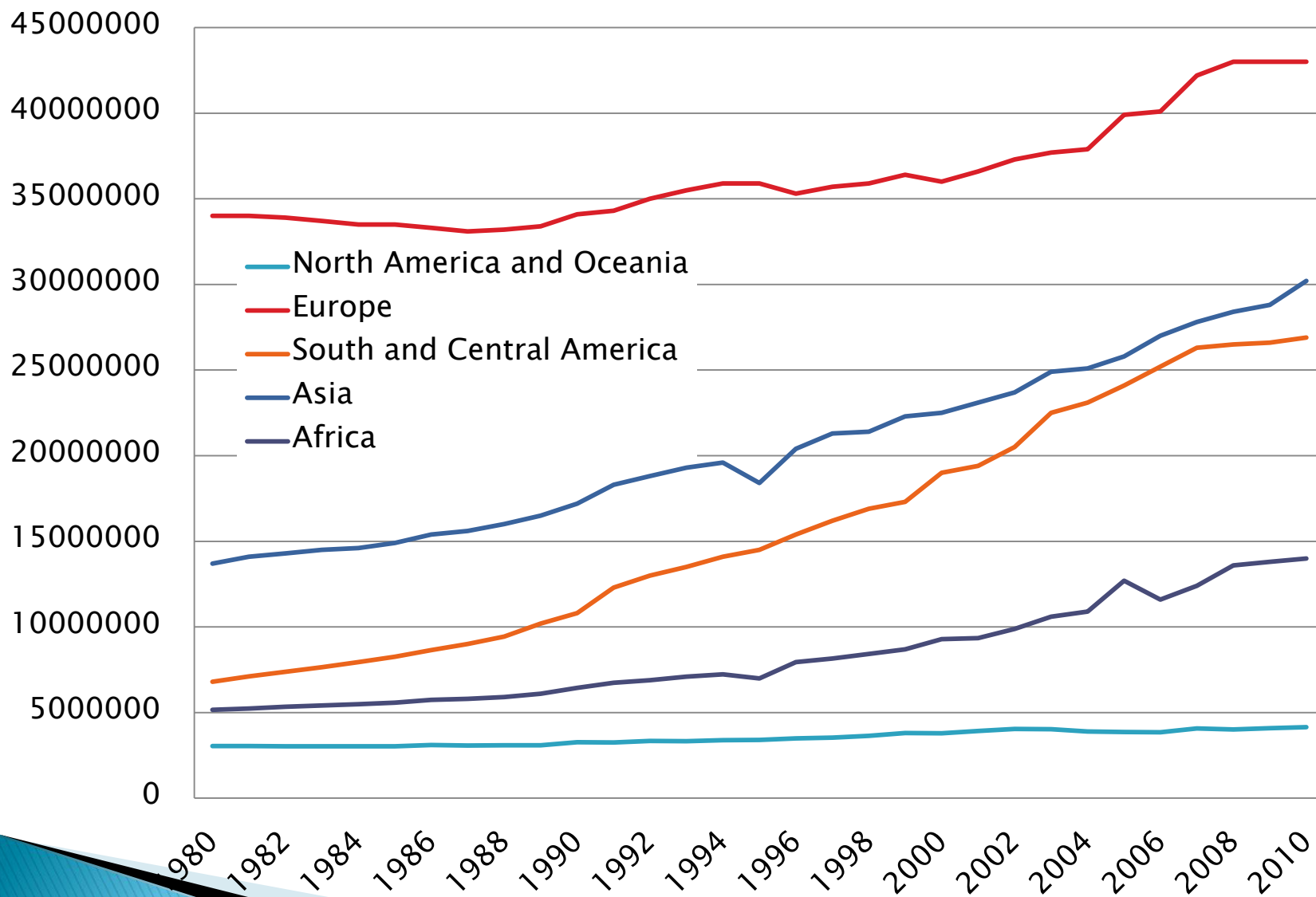
Evolution of stocks of migrants



Gross migration flows with interpolations



Foreign population stocks with interpolations



DDD analyses of labour market openings of EU countries on migration flows from new EU8 and EU2 member states, years 1995–2010.

| VARIABLES | Non-exp: EU15 source | | | pureLMO EU8+EU2 | Non-exp: Rus, Cro, Alb, Ukr | | | pureLMO EU8+EU2 |
|------------------|----------------------|------------|----------------|--------------------|-----------------------------|-----------------|-----------------|--------------------|
| | EU8 | EU2 | EU8+EU2 | | EU8 | EU2 | EU8+EU2 | |
| DDD | 0.209*** | 0.012 | 0.162** | 0.103 | 0.413*** | 0.614*** | 0.349*** | 0.041 |
| Dest & Origin FE | YES | YES | YES | YES | YES | YES | YES | YES |
| Constant | -47.617*** | -79.645*** | -62.335*** | -71.136** | 30.082* | 6.852 | 6.609 | -76.878*** |
| Observations | 5,285 | 4,084 | 5,737 | 1,110 | 2,239 | 1,038 | 2,691 | 566 |
| Adjusted R-sq | 0.887 | 0.899 | 0.881 | 0.932 | 0.866 | 0.867 | 0.859 | 0.928 |

Dependent Variable: Ln(Emigration Rate). Controls included: networks, economic and distance variables, time dummies. Robust standard errors clustered on country pairs level, *** p<0.01, ** p<0.05, * p<0.1; pureLMO restricts the time period to after EU enlargements (>2004 & >2007)

Motivation –previous evidence

- studying determinants important – knowledge about behaviour, possibility to use the coefficient for forecasts of migration potential.
- some studies forecasting migration potential from CEECs:

2 different approaches:

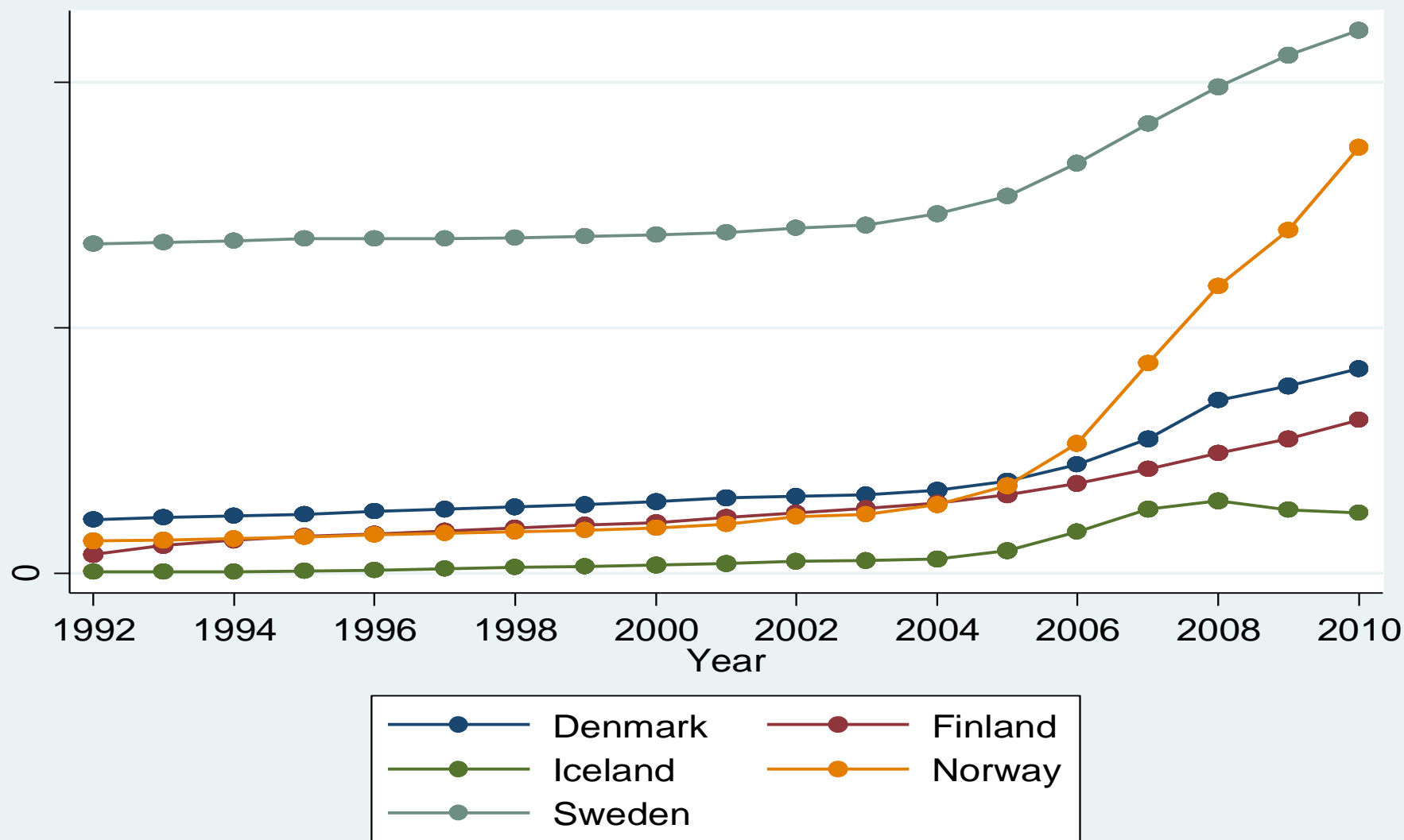
A) surveys: 6 – 30% of the CEE populations, see e.g. Wallace (1998), Fassmann and Hintermann (1997).

B) econometric analysis: a long-run migration potential is usually estimated at around 2–5%, net migration potential around 2% of source countries population, see Pytlikova (2006), Dustmann et al. (2003) or Alvarez-Plata et al. (2003).

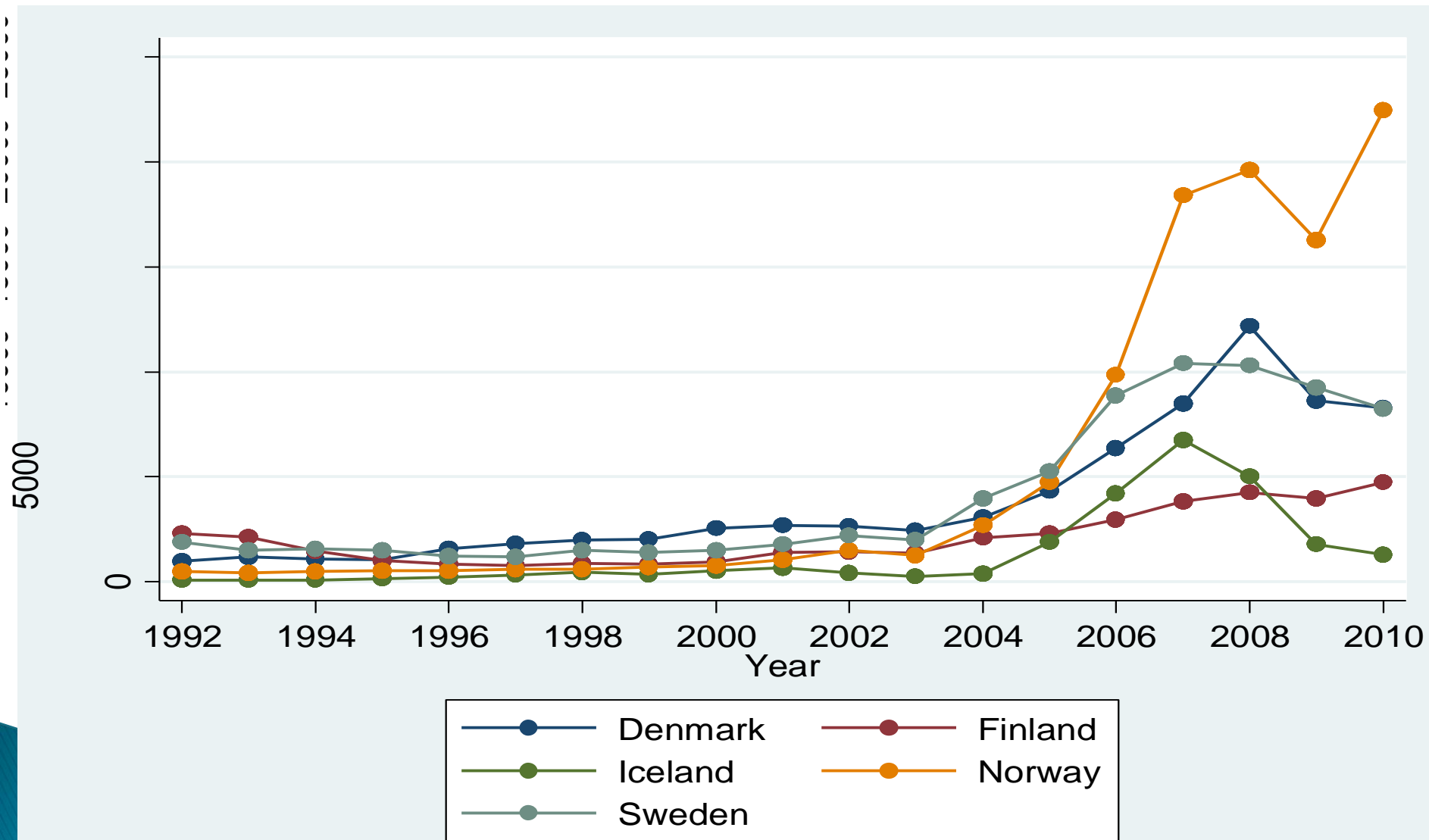
- Example of a forecast for UK: 5.000–13.000 immigrants per year to UK (Dustmann et al. 2003) ; Reality: around 500.000 CEE immigrants between 2004 and 2006!!!

Why so bad forecasts?

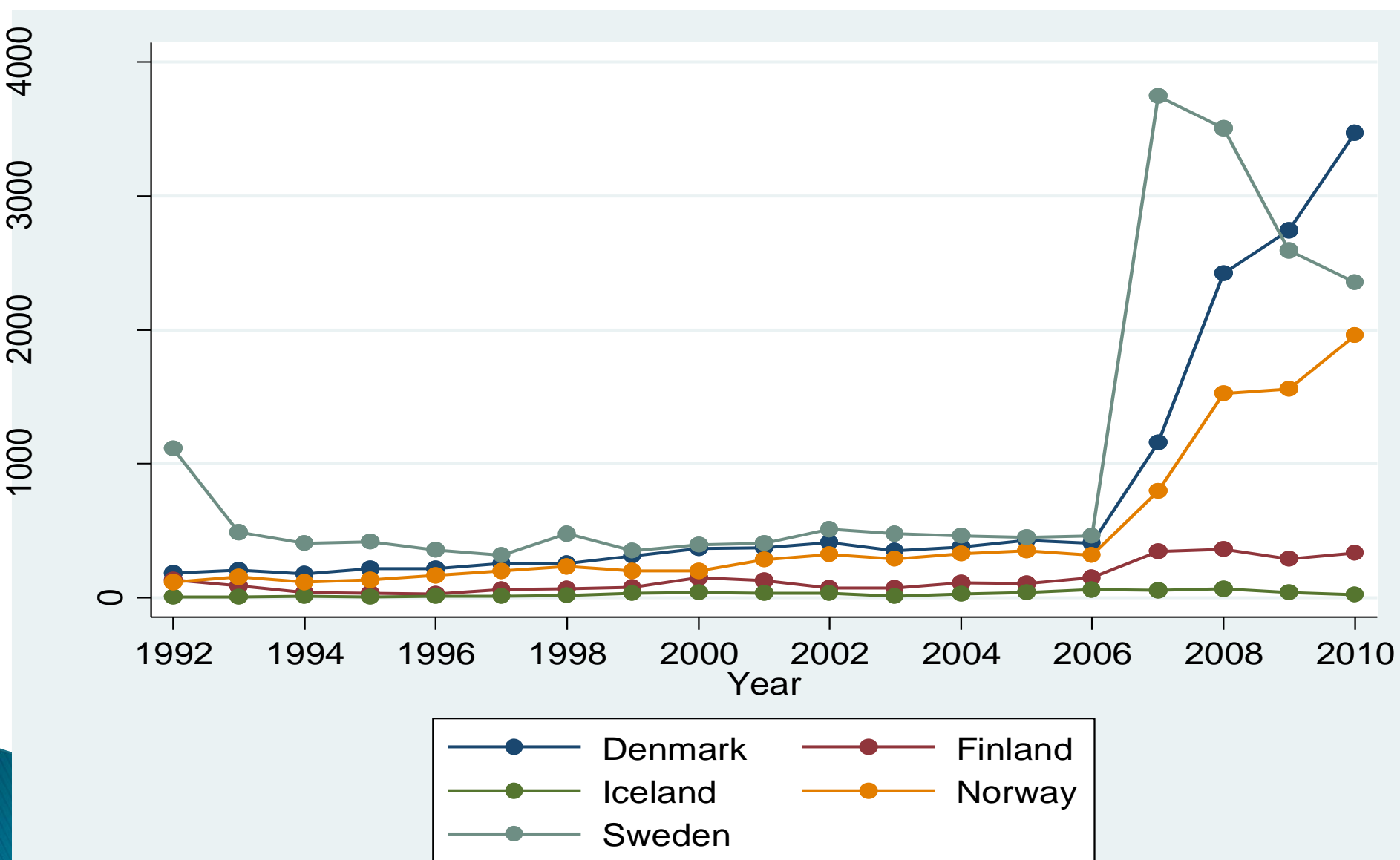
Foreign population from EU-8 (Hun, PL, Slo, CR, SR, Est, Lat, Lith) living Nordic countries. 1992-2010



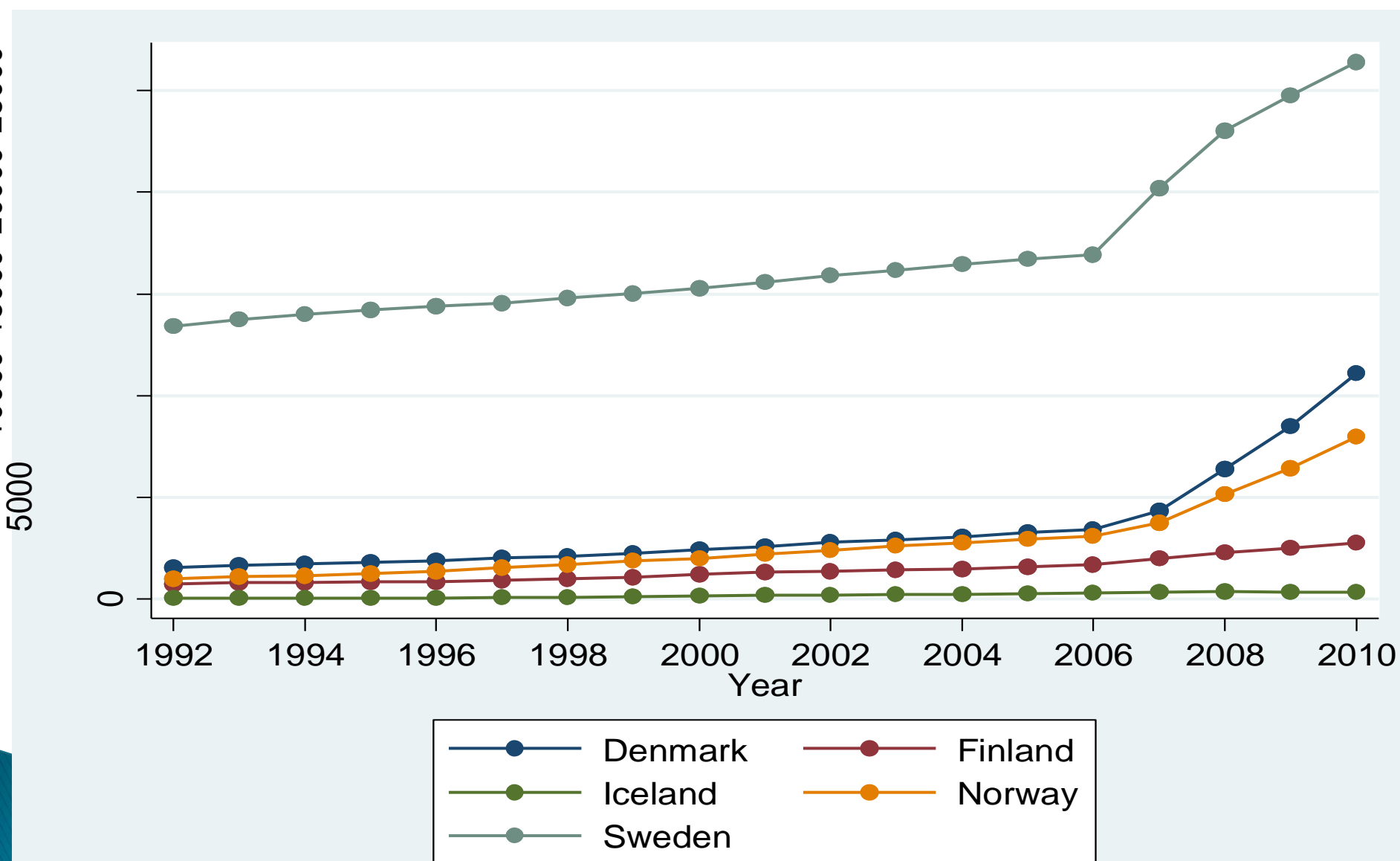
Immigration flows from EU-8 (Hun, PL, Slo, CR, SR, Est, Lat, Lith) to Nordic countries. 1992-2010



Immigration flows from Bulgaria and Romania to 5 Nordic countries. 1992-2010



Foreign population from Bulgaria and Romania living in Nordic countries. 1992-2010



CEE foreigners in Nordic countries as a % of destination population. 1990 & 2010.

| <i>DESTINATIONS:</i> | DENMARK | | FINLAND | | ICELAND | | NORWAY | | SWEDEN | |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <i>ORIGINS:</i> | 1990 | 2010 | 1990 | 2010 | 1990 | 2010 | 1990 | 2010 | 1990 | 2010 |
| CR and SR, CZECHO-SLOVAKIA | 0,019 | 0,043 | 0,005 | 0,013 | 0,020 | 0,094 | 0,021 | 0,080 | 0,099 | 0,091 |
| HUNGARY | 0,026 | 0,047 | 0,010 | 0,029 | 0,015 | 0,050 | 0,032 | 0,051 | 0,176 | 0,165 |
| POLAND | 0,172 | 0,481 | 0,019 | 0,052 | 0,109 | 2,976 | 0,107 | 1,183 | 0,416 | 0,755 |
| ESTONIA* | 0,002 | 0,020 | 0,042 | 0,468 | 0,001 | 0,045 | 0,002 | 0,057 | 0,134 | 0,108 |
| LATVIA* | 0,002 | 0,058 | 0,001 | 0,020 | 0,003 | 0,207 | 0,002 | 0,100 | 0,023 | 0,050 |
| LITHUANIA* | 0,002 | 0,113 | 0,001 | 0,012 | 0,002 | 0,466 | 0,001 | 0,322 | 0,003 | 0,072 |
| SLOVENIA* | 0,00002 | 0,005 | 0,00002 | 0,000 | - | 0,010 | 0,00007 | 0,005 | 0,001 | 0,011 |
| <i>Total 2004 EU Entrants</i> | <i>0,223</i> | <i>0,766</i> | <i>0,078</i> | <i>0,594</i> | <i>0,15</i> | <i>3,848</i> | <i>0,165</i> | <i>1,797</i> | <i>0,852</i> | <i>1,252</i> |
| BULGARIA | 0,005 | 0,061 | 0,005 | 0,021 | 0,007 | 0,042 | 0,011 | 0,053 | 0,023 | 0,072 |
| ROMANIA | 0,019 | 0,140 | 0,003 | 0,031 | 0,0004 | 0,066 | 0,010 | 0,112 | 0,103 | 0,212 |
| <i>Total 2007 EU Entrants</i> | <i>0,024</i> | <i>0,201</i> | <i>0,008</i> | <i>0,052</i> | <i>0,007</i> | <i>0,108</i> | <i>0,021</i> | <i>0,165</i> | <i>0,126</i> | <i>0,284</i> |
| TOTAL % of destination population | 0,247 | 0,9672 | 0,086 | 0,6460 | 0,157 | 3,9550 | 0,186 | 1,9625 | 0,978 | 1,5354 |
| TOTAL % of ALL IMMIGRANTS | 3,690 | 7,7570 | 1,302 | 4,6481 | 3,794 | 10,8784 | 4,665 | 11,7898 | 9,235 | 14,8883 |

Source: National statistical offices; Own calculations.

Pytlikova: Clermont-Ferrand, January 2014