Economic impacts of migration and migration potential in the context of EU Enlargement

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Outline:

- Economic impacts of migration

- Propensity to migration

- Immigration surplus in V4 countries

- Migration channelling

- Prediction of migration flows: Turkey and Croatia

- Main conclusions

Economic impacts of migration 1

In the absence of targeted immigration policy:

- immigrant skilled workers will be from the countries where the returns to skills are low
- immigrant unskilled persons will be from the countries where the returns to skills are high.

George Borjas (1999): a country with low payoff to human capital (high-skilled workers do not earn much more than less-skilled), people profiting from migrating to the countries with better economic opportunities are those with their skills above average.

Economic impacts of migration 2

Welfare impact of immigration on the receiving countries depends on the characteristics of the migrants and the labour market conditions.

David Card and "Mariel Boatlift" (Card, 1990): there are no adverse effect on the native labour market in terms of lower wages or increased unemployment.

The long-term impact of immigration on the capital of destination countries was shown to be positive (see e.g. Chiswick, Chiswick and Karras, 1992).

Thus, the overall consensus is that immigration improves the economic welfare of the destination countries or, at worst, has negligible effect.
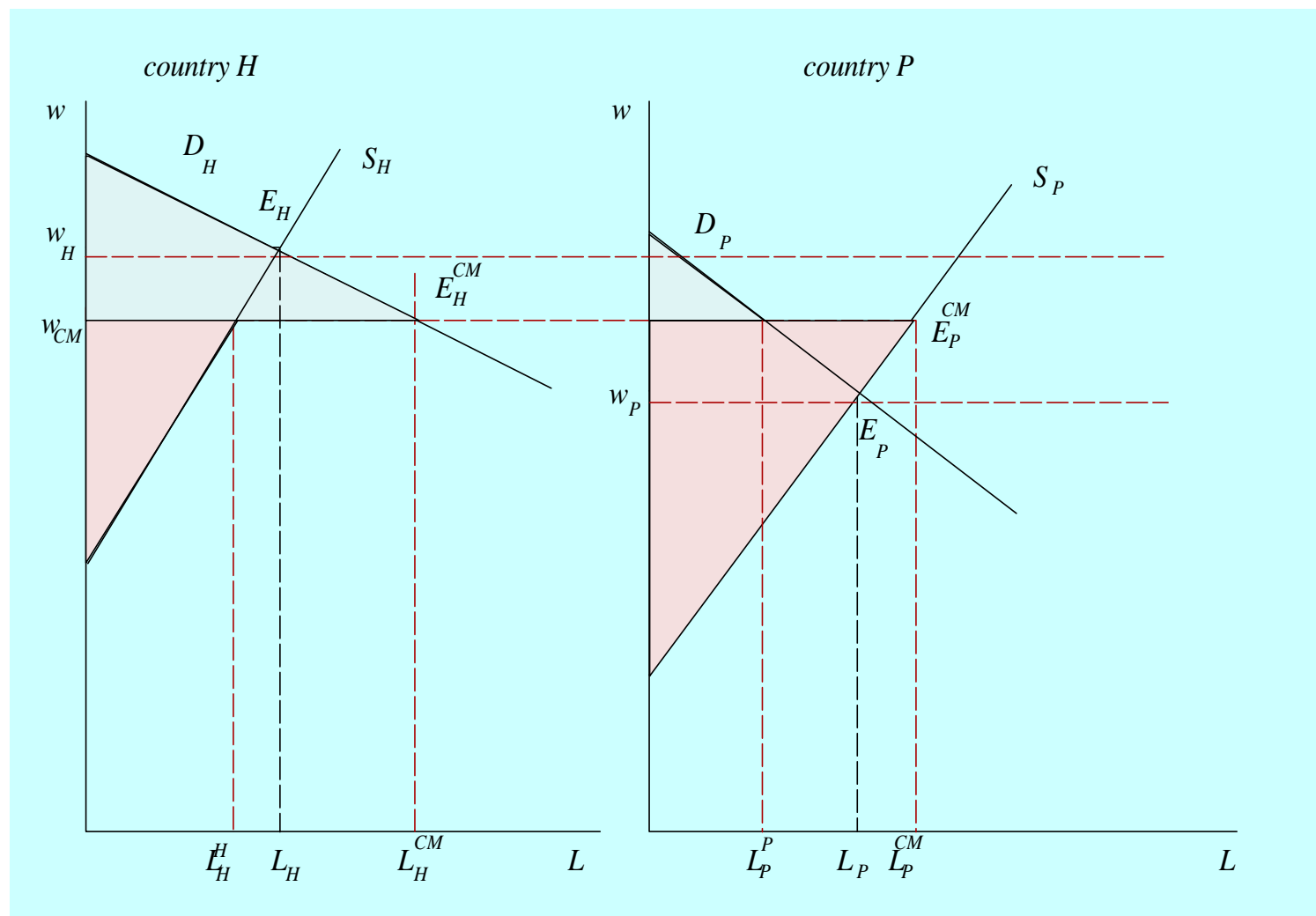
Propensity to migration 1

- The concept of propensity to migration (Strielkowski and Turnovec, 2008; 2011) in the framework of the two countries model:

$$\Pi(w_H, w_P, \alpha, risk) = \begin{cases} 1 - \dfrac{(\alpha + risk)}{w_H - w_P} & for\ (\alpha + risk) \le w_H - w_P \\ 0 & for\ (\alpha + risk) > w_H - w_P \end{cases}$$

- α is the indicator of migration transaction cost:
- Monetary (financial) cost of migration (keeping two homes, bearing travel expenses, various traveling and administrational adjustments and re-settling, etc.),
- Cost of (intangible) psychological factors (habits, language barriers, breaking of social ties in the country of origin, deprivation related to migration, etc.).
- Perceived risk of migration

Labor mobility: neo-classical solution for common market

Propensity to migration 2

- **If the difference between wages in H and P is less than the indicator of migration cost, there is no mobility motivation for the workers to move from P to H. Economic, psychological costs and the perceived risk are greater than benefits of wage differential. The propensity to migration between two countries equals to zero.**

- **If the difference between wages in H and P is greater than indicator or migration cost, workers from P will move to H. The propensity to migration between two countries equals to**

$$1 - \frac{(\alpha + risk)}{w_H - w_P}$$

- **For a given (α+risk) the greater is the difference between wages, the higher is the propensity to migration (from lower wage country to the higher wage country).**

Propensity to migration 3

Welfare increase for each of two countries:

- **For country with lower factor price, the labor: the welfare increase has happened due to the increasing revenues of factor owners (workers) who are exporting this factor (their labor) to the country with higher factor price**

- **For country with higher factor price: the welfare increase has happened due to the increase of the product**

Cross-country tabulations with the number of immigrants in selected EU-15 countries (displayed vertically) by the country of citizenship (displayed horizontally) and wage differentials (in brackets) between the target and the source countries in 2006

Source/ target country	BG	CZ	EST	HU	LV	LT	PL	RO	SK	SLO
IRL	n.a.	4447 [587.2]	2260 [741.2]	2693 [603.9]	9207 [820.7]	18064 [734.2]	40973 [653.2]	n.a.	7190 [719.4]	85 [384]
ES	83418 [377.6]	3782 [105.3]	563 [259.3]	2298 [122]	1246 [338.8]	11389 [261.3]	32843 [171.3]	287087 [394]	3188 [237.5]	426 [97.9]
NL	1924 [996.3]	1776 [724]	284 [878]	2029 [740.7]	361 [957.5]	970 [880]	10968 [790]	3020 [1012.7]	1359 [856.2]	256 [520.8]
U.K.	n.a.	8340 [701]	1475 [855]	7055 [717.7]	9485 [934.5]	17055 [857]	162390 [767]	n.a.	21725 [833.2]	185 [497.8]

Source: Eurostat (2007); Office for National Statistics (2007); Niessen at al. (2006)

Propensity to migration 4

Most frequently named catalyzes of migration: wage differentials, economic disparities between regions, differences in GDP per capita and unemployment differentials.

Driving factors of migration and labour mobility:

- Economic factors or the EU Enlargement?

- Migration potential of population of a given country (scope and size of migrations)

The idea the scope and size of migrations might differ for different countries (they strongly depend on the migration potential of population of a given country).

Comparison of migration potential in Czech Republic and Ireland

Strielkowski and O'Donoghue (2006)
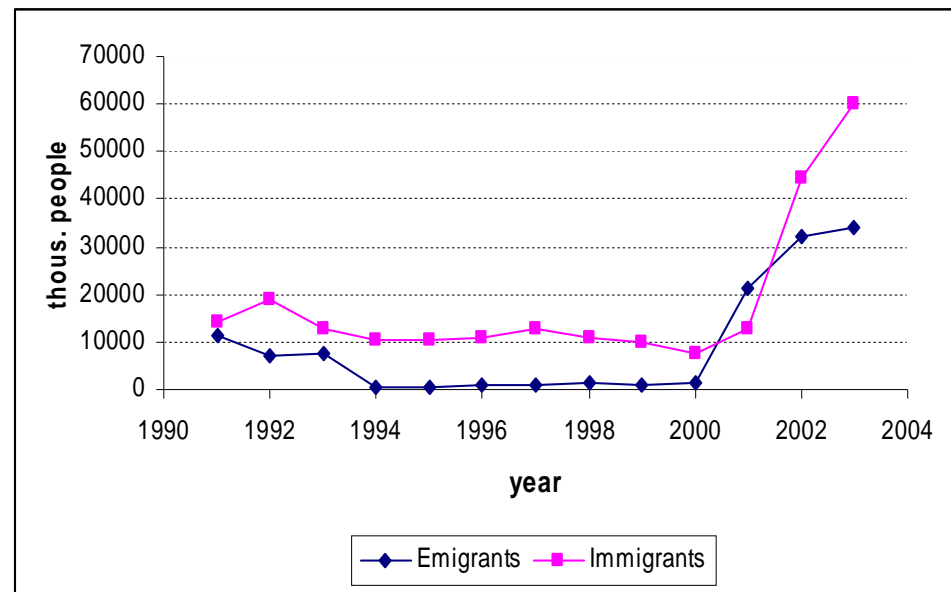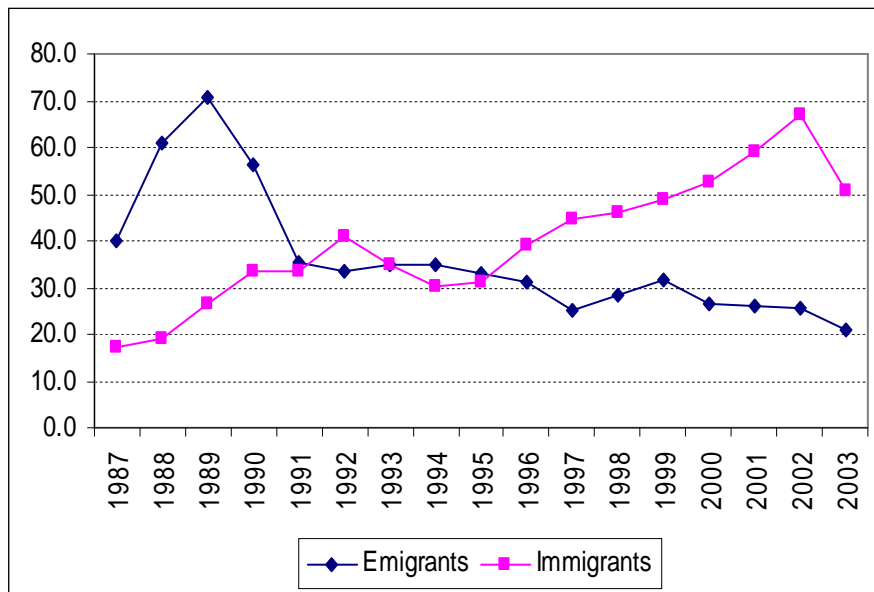
**Source:** Aidan Punch and Helen Cahill, CSO (2004); Czech Statistical Office (2005)

A comparative study: ROI and CZ

- Inward, outward and net (immigration minus emigration) migrations in both countries

- Migration potential (No. of migrants from and to the administrative regions) as a reaction to the economic incentives (expected income and employment rate).

  Data on emigration, immigration (both without distinguishing the regions of origin or destination of migrants), disposable income and employment by micro-regions

  Inter-dependence between migration and various economic factors: relating annual rate of net migration, M with wage ratio of emigration and immigration country (W_{emig}/W_{imm}) and unemployment rate ratio (U_{emig}/U_{imm})

Czech Republic
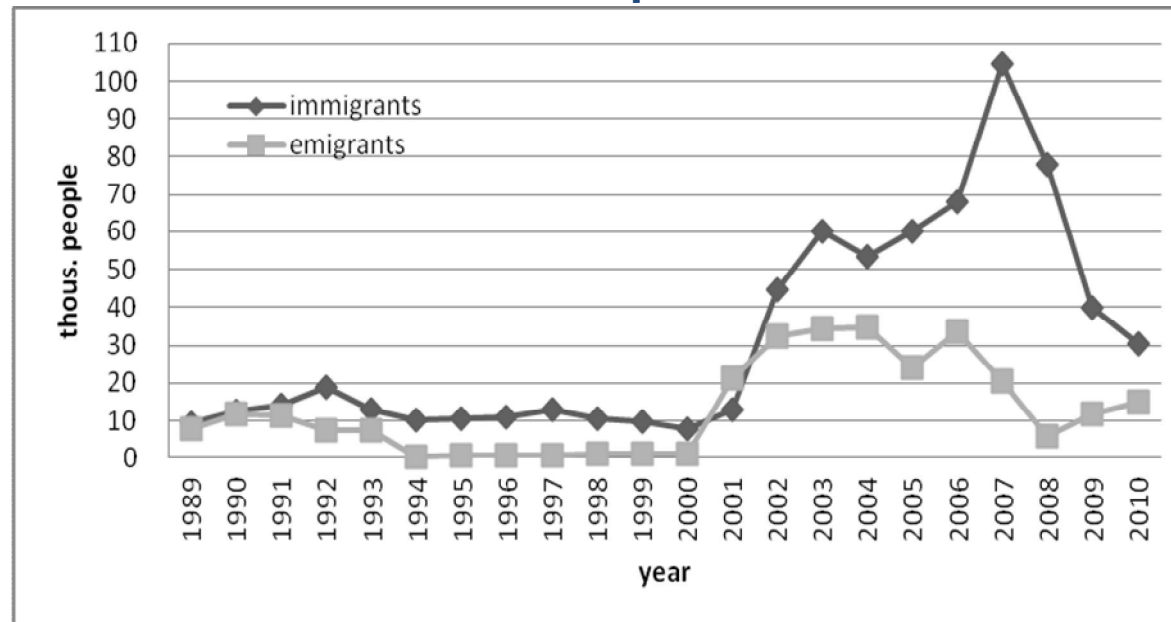
Poland
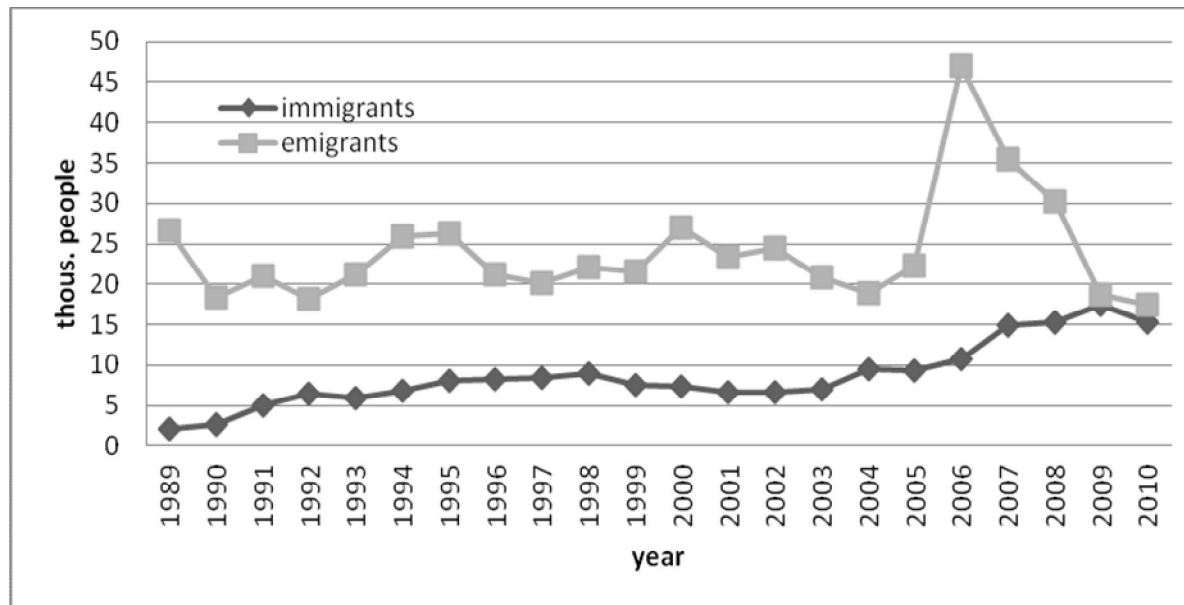
Comparison of migration potential in Czech Republic and Poland

- Comparison of migration potential and migration decisions using the data for inter-regional and rural-urban migrations (proxy for migration potential).

- Migration potential and the propensity to migrate as a reaction to worsening of the economic conditions at home are highly correlated.

- Poles are quite sensitive to worsening economic conditions at home but the Czechs posses lower value of migration potential and therefore are not so inclined to migrations (explanation for the high volume of migration from Poland after the EU 2004 Enlargement).

Propensity to migration 5

- Free mobility of labor increases total welfare in both emigration and immigration country, but has different effects for different segments of their societies

- Labor migration in common market does not lead to equalization of wages due to different propensities to migration in different countries.

- While the wage differential is significant factor of labor migration, it does not explain fully labor flows between the countries.

- Winners and losers of market integration and implications for EU Enlargement

Immigration surplus in V4 countries 1

The framework of immigration surplus was first adapted by Borjas (1994, 1995).

Production technology in the host country can be summarized using the aggregate production function with two inputs: capital (K) and labour (L), so that the total output would be equal to $Q = f(K,L)$. The workforce in Borjase's model is composed of N native and M immigrant workers.

Other important assumptions should be made:

- All capital is owned by natives (ignoring the possibility that immigrants might augment capital stock).

- All workers are perfect substitutes in production (no skill differentials).

- Both supplies of capital and foreign and native labour are perfectly inelastic.

Immigration surplus in V4 countries 2

US $

A

w_0

w_1

S   S'

B

C

D

MP_L

0   N   L = N+M
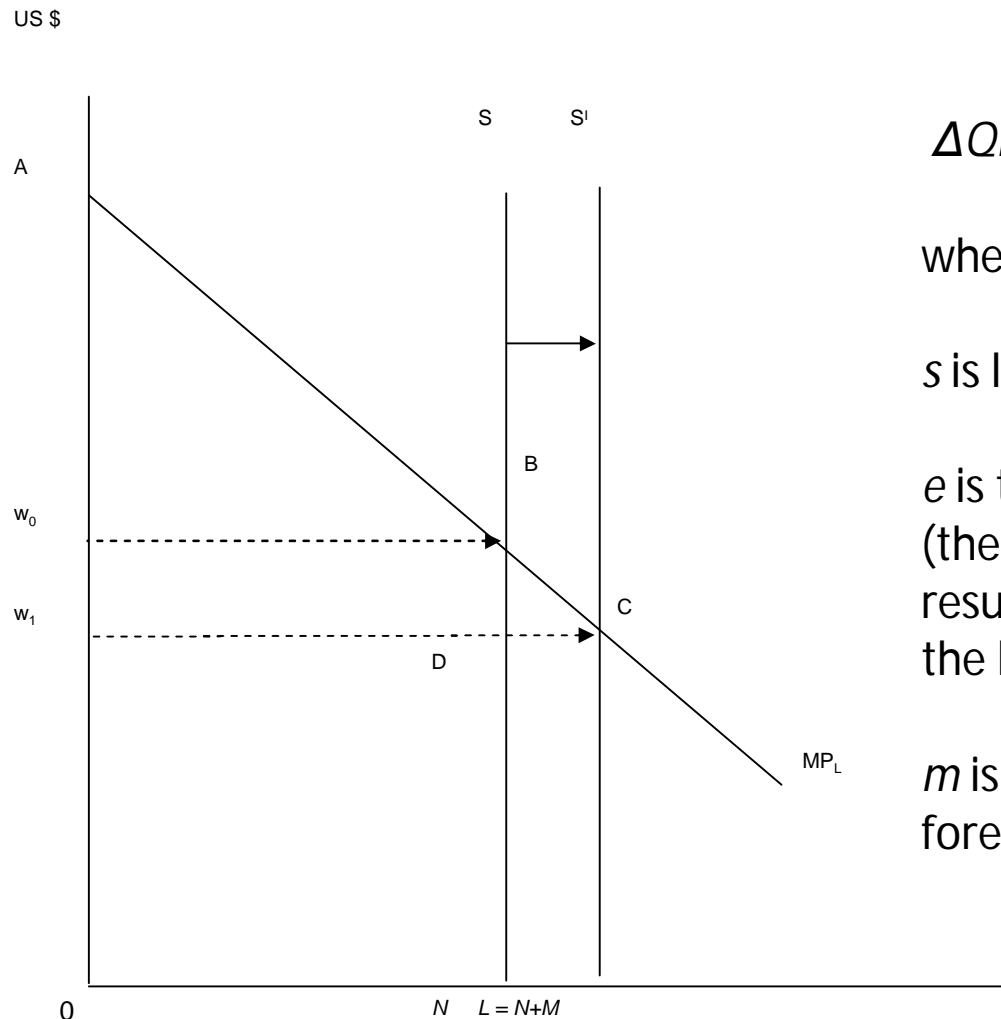
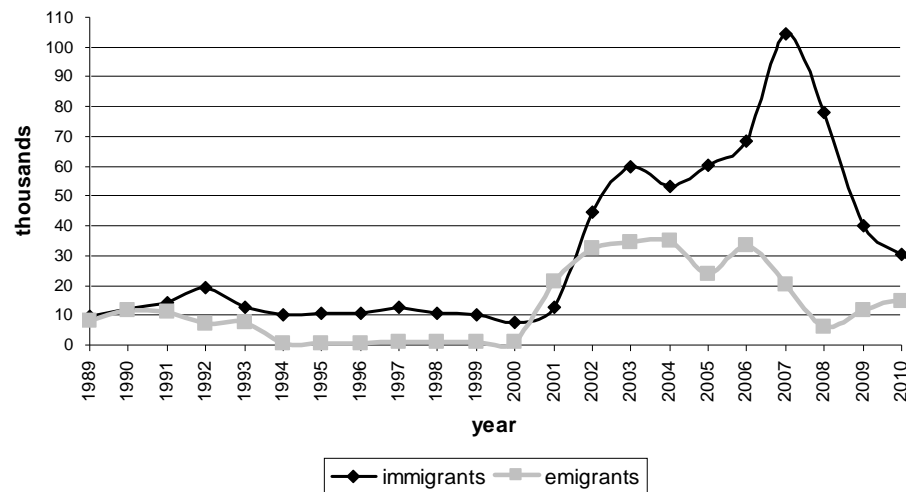$$\Delta QN/Q = - 1/2\, s\, e\, m2$$

where:

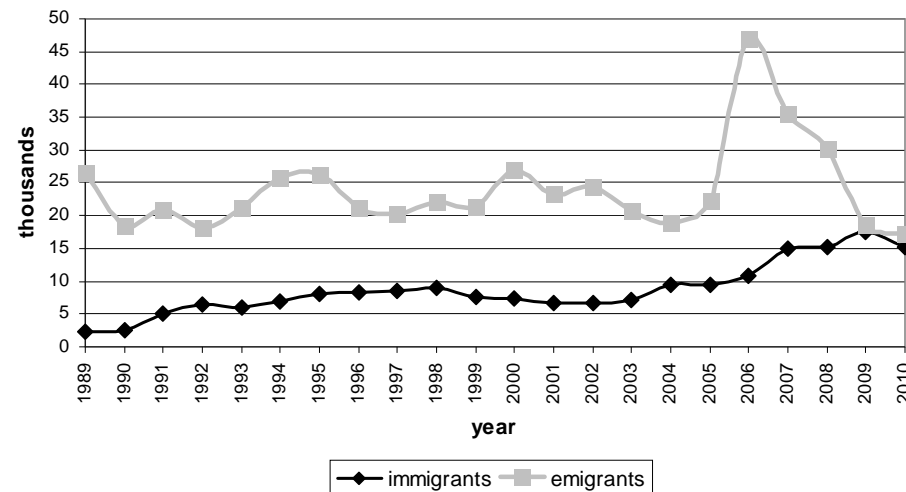s is labour's share of national income;

e is the elasticity of factor price for labour (the percentage change in the wage resulting from a 1 % change in the size of the labour force);

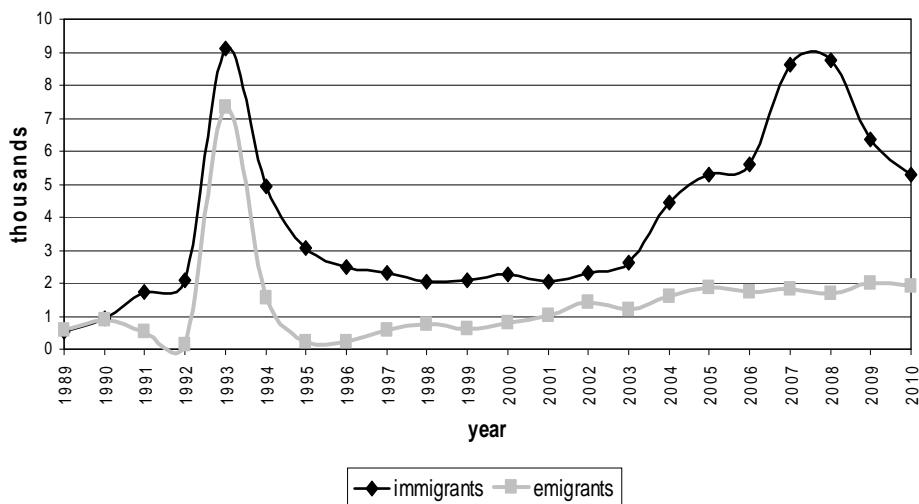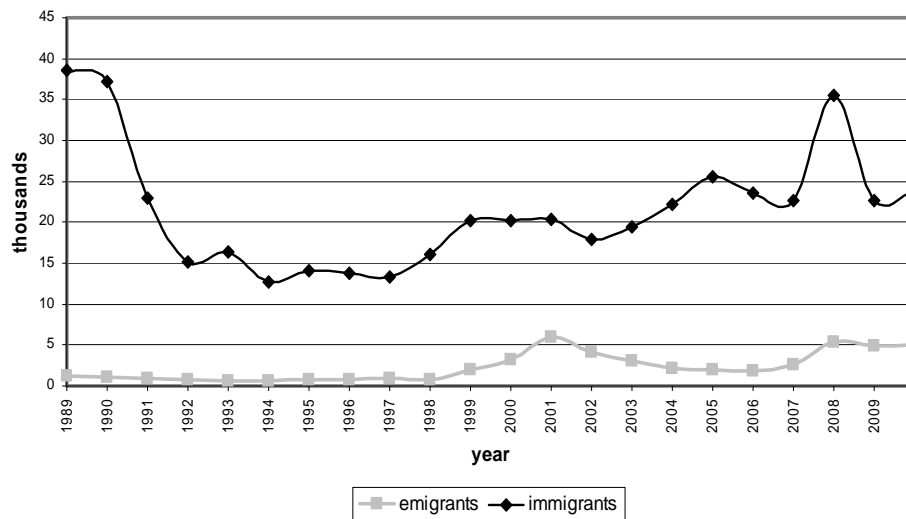m is the fraction of the workforce that is foreign-born ($m=M/L$).

Czech Republic

thousands

110
100
90
80
70
60
50
40
30
20
10
0

1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

year

◆ immigrants ■ emigrants

Poland

thousands

50
45
40
35
30
25
20
15
10
5
0

1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

year

◆ immigrants ■ emigrants

Slovakia

thousands

10
9
8
7
6
5
4
3
2
1
0

1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

year

◆ immigrants ■ emigrants

Hungary

thousands

45
40
35
30
25
20
15
10
5
0

1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

year

■ emigrants ◆ immigrants

Immigration surplus for US, V4 (1995, USD)*

Country	s	e	m (m=M/L)	Economy size	Immigration surplus	Immigration surplus, % GDP
United States	0.58	-0.58	6.3 %	7 trillion	7 billion	0.067
Czech Republic	0.39	-1.23	2.16 %	56 billion	6,28 million	0.0113
Hungary	0.42	-1.11	0.51 %	42 billion	265 thousand	0.0006
Poland	0.59	-0.57	0.06	136 billion	9.2 thousand	0.000006
Slovakia	0.38	-1.27	0.16	25.3 million	8843	0.000059

Immigration surplus for US, V4 (2009, USD)*

Country	s	e	m (m=M/L)	Economy size	Immigration surplus	Immigration surplus, % GDP
United States	0.57	-0.62	8.21 %	14 trillion	16.7 billion	0.1189
Czech Republic	0.44	-1.06	4.36 %	190 billion	84.1 million	0.04406
Hungary	0.44	-1.05	1.48 %	117 billion	6.4 million	0.00507
Poland	0.47	-0.95	0.16 %	432 billion	276 thousand	0.000064
Slovakia	0.44	-1.03	0.59 %	87 billion	364 thousand	0.000804

Note: * We use average annual exchange rates $/CZK, $/EUR, $/PLN, $/HUF for 1995 and 2009;
Source: AMECO Database (2011); OECD (2010b); U.S. Bureau of Labour Statistics (2011); own calculations

Immigration surplus:

Czech Republic, Hungary, Poland and Slovakia (1993-2010)
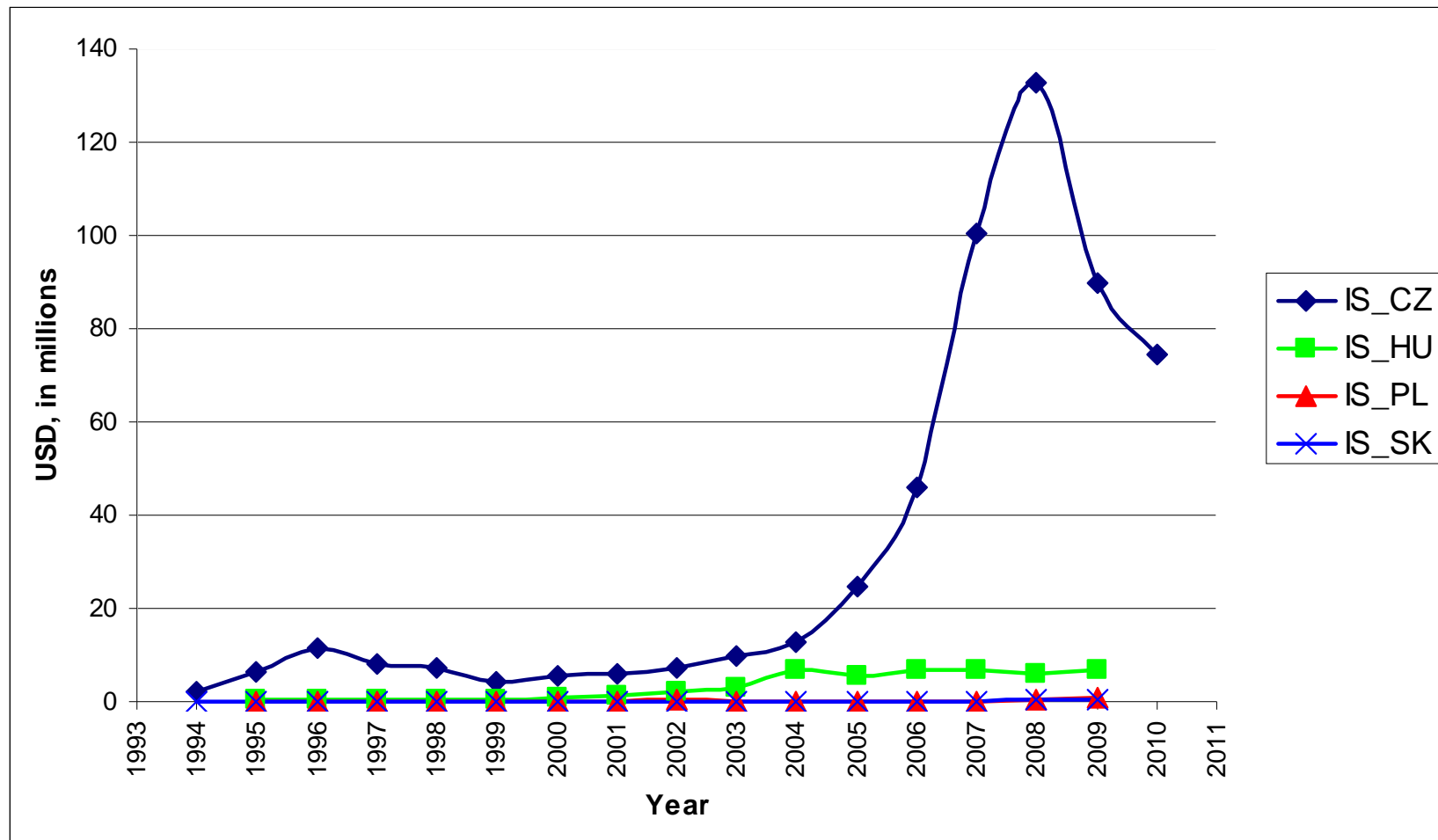
Migration channeling 1

- Occupations are important sites in which structural factors articulate with individual agency (Sassen, 1988).

- Cultural linkages are augmented by labour market integration between the origin and destination country, which makes it easier to translate work skills and education between labour markets.

- Unskilled Mexicans with work experience in the Mexican agricultural sector have migrated to work in the U.S. agricultural sector for decades (Massey, et al. 2002; Mize and Swords 2010; Mize 2006). There is also evidence that skilled Mexican labour also migrates along occupational lines (Hernandez-Leon (2008) describes skilled migration from Monterrey, Mexico to Houston, Texas in the oil sector).

Ukrainian migrants in the Czech Republic
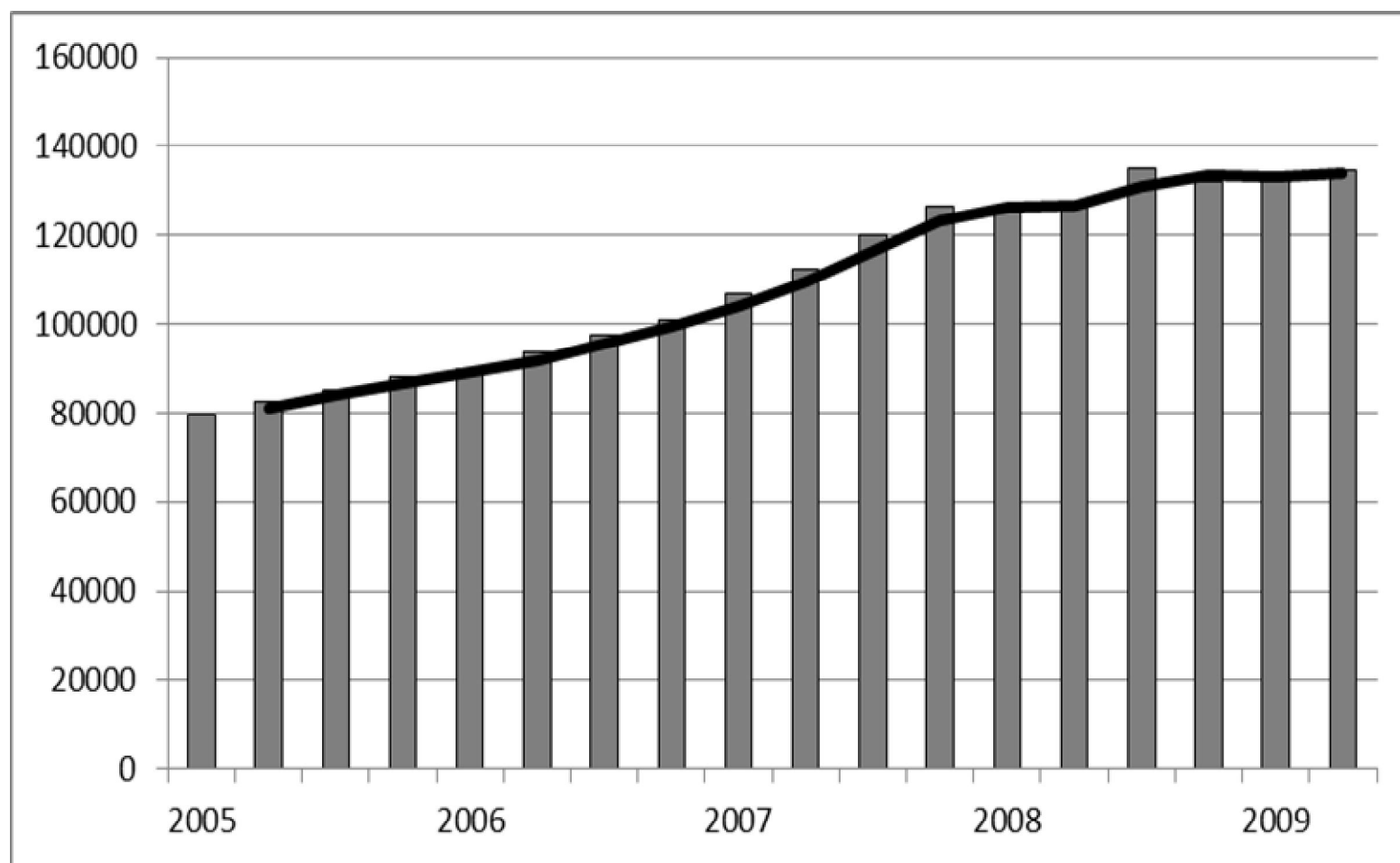
Migration channeling 2

- The results show that occupations serve as structural channels in the context of significant international political-economic integration between Ukraine and the Czech Republic.

- Across all economic sectors, Ukrainian immigrants with work experience in a particular sector of the Ukrainian economy are more likely to work in the same sector of the Czech economy than immigrants with different occupational backgrounds.

- The analysis focused especially on the construction industry, because of its importance in the process of new destination formation in the Czech Republic, and found Ukrainian migration to the Czech Republic is strongly channeled along occupational lines linking the Ukrainian and Czech construction sectors.

Statistics for sectors with occupational channelling

Sectors	Occupation in Ukraine	Occupation in the Czech Republic
Primary sector		
Forestry, fishing	5	2
Secondary sector		
Manufacturing	16	8
Electricity, gas and head production	1	1
Construction	68	63
Tertiary sector		
Transport and storage	9	5
Healthcare and welfare	18	18

Total number of observations: 153

Migration channeling 3

- No empirical support to be found in justifying the myth of "over-qualified" Ukrainian "doctor" or lawyer" working on a construction site in Prague (In addition, educational standards are different)

- Occupational channeling might be also happening in Ukraine. Few migrants worked in primary sector.

- Results corroborated by in-depth interviews and previous research

- If there was a Ukrainian "brain-drain" and human capital loss, it has already stopped: new destinations, migration policies and restrictions

Prediction of migration flows: Turkey and Croatia 1

- **Turkish labor migration to Europe dates back to the early 1960s**
  - **Ankara treaty: low-skilled temporary workers, on mutually beneficial conditions**
  - **Oil crisis: recruitment of Turkish workers stopped, migration continues mainly due to family reunification**
  - **80's new type of migration asylum seekers**
  - **In 21st century the migration is slowing down. In 2004 the stock of Turks living abroad decreased by 2% and reached approximately 3.5 million**

# Prediction of migration flows: Turkey and Croatia 2

- Clearly the biggest community of Turks in today's EU can be found in Germany

- Approximately 76% of Turks migrating to Europe go to Germany

	2004	% of total	Rank **	Source
Austria	142	6	1	Labour Force Survey, Statistics Austria
Belgium	79	3	6	Population register, National Statistical Office.
Denmark	31	1	1	Statistics Denmark.
Finland	3	0	10	Central population register, Statistics Finland.
France	n.a.	n.a.	n.a.	Census, National Institute for Statistics and Economic Studies (INSEE).
Germany	1 764	76	1	Statistisches Bundesamt, Wiesbaden
Greece*	77	3	3	National Statistical Service of Greece.
Netherlands	196	8	1	Register of Population, Central Bureau of Statistics (CBS).
Norway	9	0	11	Central Population Register, Statistics Norway.
Sweden	35	1	10	Population register, Statistics Sweden.
Total	2 336	100		

* Data are from 2001; ** Ranking of minority size in each country

Foreign citizens in Germany

Turks were not the only one ethnic that contributed to German economic growth: Italians, Spaniards and Portuguese also took part in boosting upheaval of West German economy that took place in the 1960s
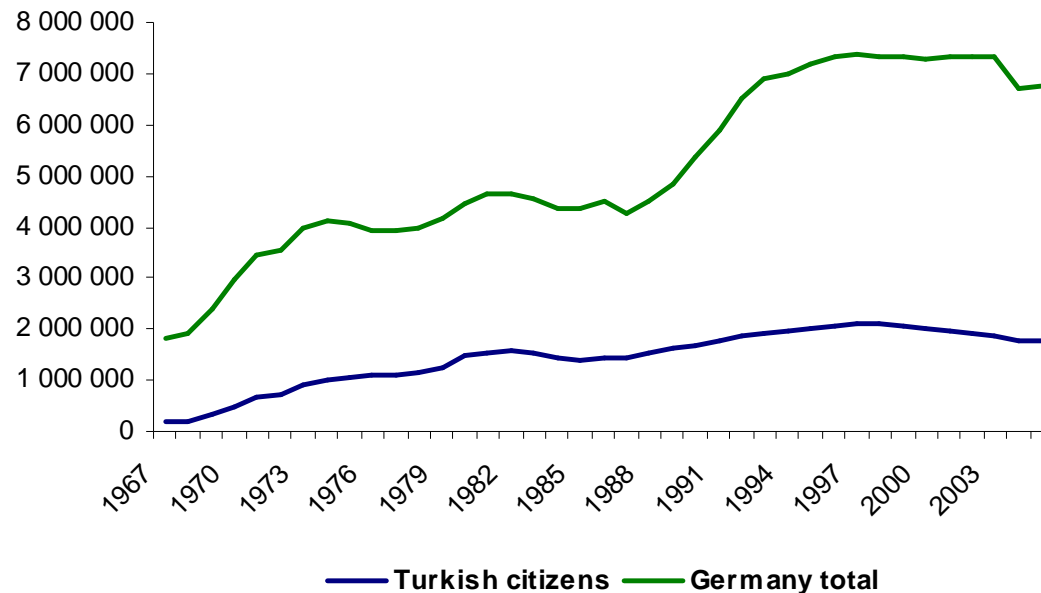
Lack of the appropriate data

- **The most notorious problem with estimation of migrations is the lack of appropriate data**

- **Data used in this paper for inward migrations to Germany are for the period of 1967 to 2005**

- **Difference in a stock of foreign citizens normalized by the home country population taken as a proxy for migration**

- **The sample is pooled for 18 European source countries**

- **Two breaks in migration stock data series – 1972, 1987-89**

Prediction of migration flows: Turkey and Croatia 3

- Simple error correction model based on human capital approach
- GDP per capita of a country is taken as a proxy for individuals' incomes both in source and target countries
- The average employment rate in both target and source country is taken as a proxy for the labor market conditions
- The lagged migration stocks serves as a proxy for network effects

$$m_{fht} = \alpha_h + \beta_1 \ln(w_{ft}/w_{ht}) + \beta_2 \ln(w_{ht}) + \beta_3 \ln(e_{ft}) + \beta_4(m_{fh,t-1}) +$$

$$+\beta_5(m_{fh,t-2}) + \beta_6 * DummyF + Z_{fh}\gamma + \varepsilon_t$$

- Zfh – vector of time-invariant variables which affect the migration between two countries such as geographical proximity and language.
- dummy – Free mobility of labour.

Prediction of migration flows:
Turkey and Croatia 3

- Panel data used are characterized by smaller cross-section dimension (18 cross-sections) and relatively larger time dimension (39 annual observations)

- Variables were tested for the cointegration (in order to see whether the long-term equilibrium between migration stocks and explanatory variables existed) that showed that they formed the cointegration set

- The most efficient estimator in this framework was the Seemingly Unrelated Regression* (SUR). However, it also appeared relevant to estimate the model using classical panel data Least Squares (PLS) and General method of moments (GMM)

* see Alvarez-Plata, Brücker, and Siliverstovs (2003)

Panel data estimation results

	PLS	GMM	SUR
C	-4.5302 **		-4.2034 **
w_{ht}	0.0419 **	0.0331 **	0.0444 **
w_{ft}/w_{ht}	0.0533 *	0.0935	0.0422 **
e_{ft}	0.761 **	0.698 **	0.7398 **
$m_{fh,t-1}$	1.5006 **	1.1233 **	1.3536 **
$m_{fh,t-2}$	-0.5083 **	-0.3558 **	-0.4929 **
Dummy	0.0113 **	0.0095 **	0.0152 **

**,* coefficients are significant at 1 and 5% level, respectively

Cross section fixed effect (Turkey)	0.2875

	PLS	GMM	SUR
Sample (adjusted)	1969 2005	1970 2005	1969 2005
Cross sections	18	18	18
Total panel observations (balanced)	666	648	666

The estimated model is based on SUR regression

$$m_{fht} = -4.2034 + 0.0422 * \ln(w_{ft} / w_{ht}) + 0.0444 * \ln(w_{ht}) +$$
$$+ 0.7398 * \ln(e_{ft}) + 1.3536 * (m_{fh,t-1}) - 0.4929 * (m_{fh,t-2})$$
$$+ 0.0152 * DummyF + Z_{fh}\gamma.$$

- **Lagged variables of migration have significant and positive impact on migration. That represents the crucial network effect that makes 0.86 % of former migration**

- **The dummy variable has a positive sign and it is significant, however its impact is rather small - that migrants with the biggest incentives to move have already done so before introduction of free movement of labour**

- **The country-specific effect captures the characteristics specific for each country that might effect migration and is equal to 0.2875 for Turkey**

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# Simulation of migration: 2006-2030

- **Migration from Turkey into Germany (or from Croatia to the EU) can be simulated based on the results obtained from the main model**

- **Data for simulated period taken from Eurostat and World Bank**

- **Three scenarios projected – Optimistic, Realistic, Pessimistic**

- **The estimated results as well as the exogenous variables might not exactly reflect the reality, thence they should be taken with care**

Realistic scenario: Turkey
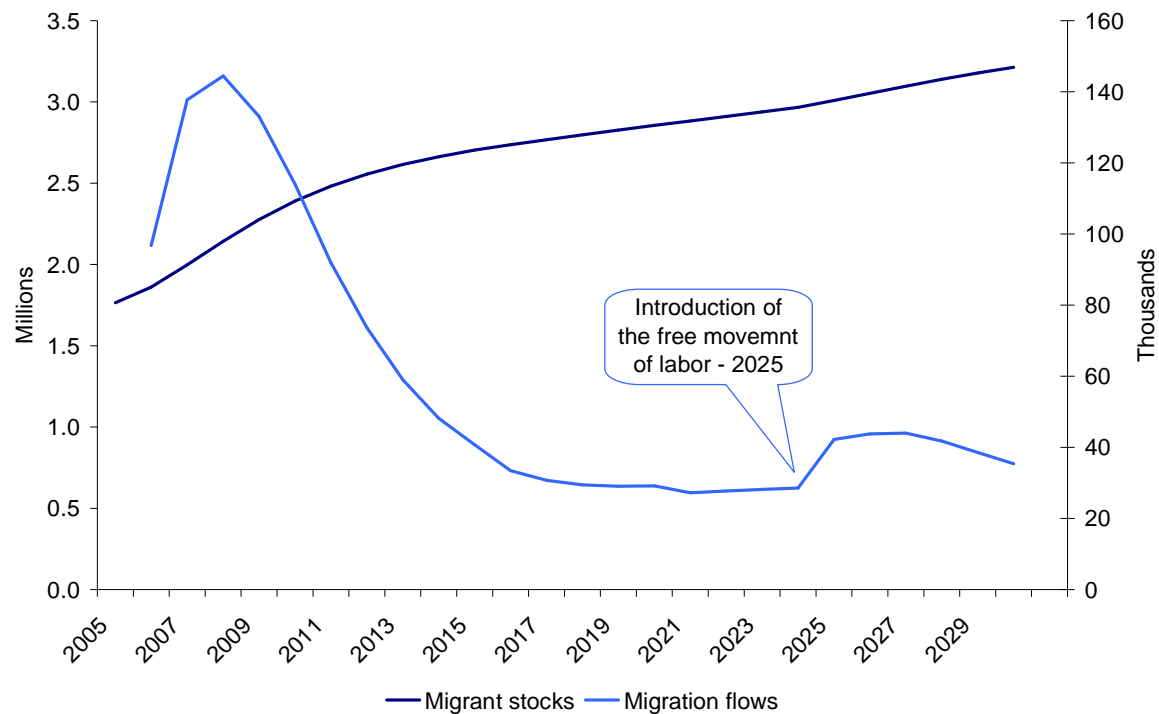
Employment rate remains unchanged, GDP in Germany and Turkey grows at rate 2 % and 4 % p.a. respectively, dummy variable for free movement of labor from the year 2025

Optimistic scenario: Turkey
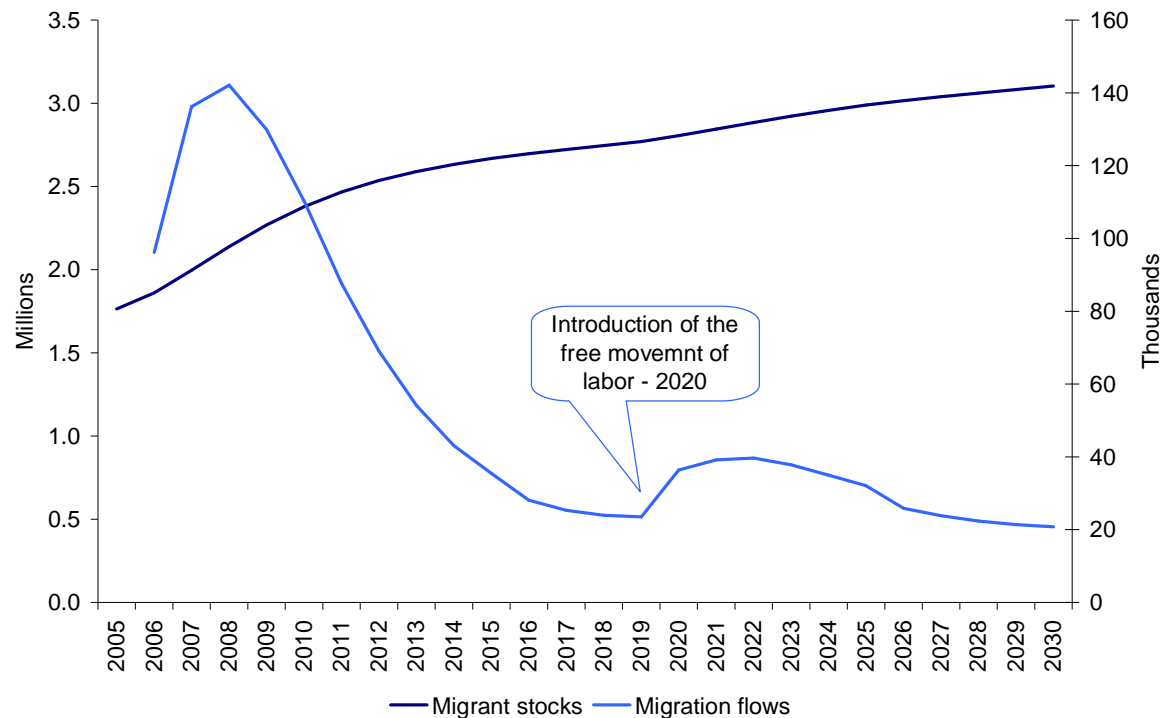
GDP per capita of Turkey converges to the German GDP per capita in a rate of 4 % p.a. and free movement of labour is introduced in 2020. The employment rates remain constant

Pessimistic scenario: Turkey
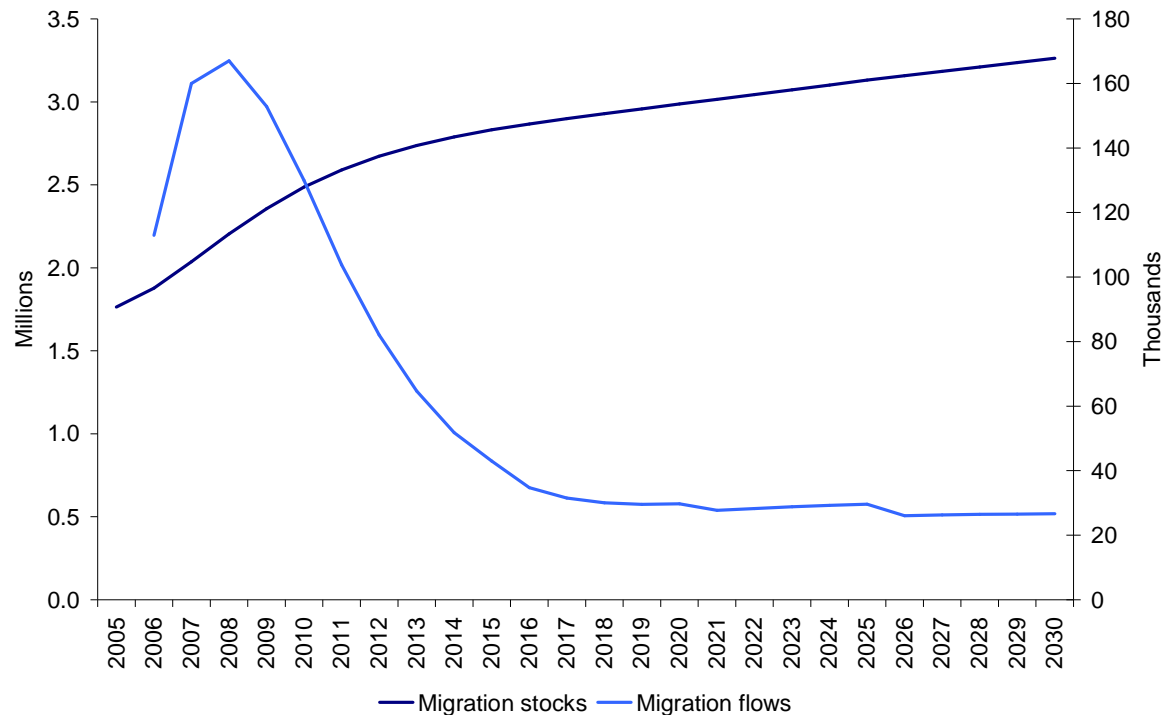
- German GDP per capita grows as fast as the Turkish GDP per capita, free movement of labour is not introduced at all, the employment rate in Germany is set about 2 % higher compared to the base case and then remains stable

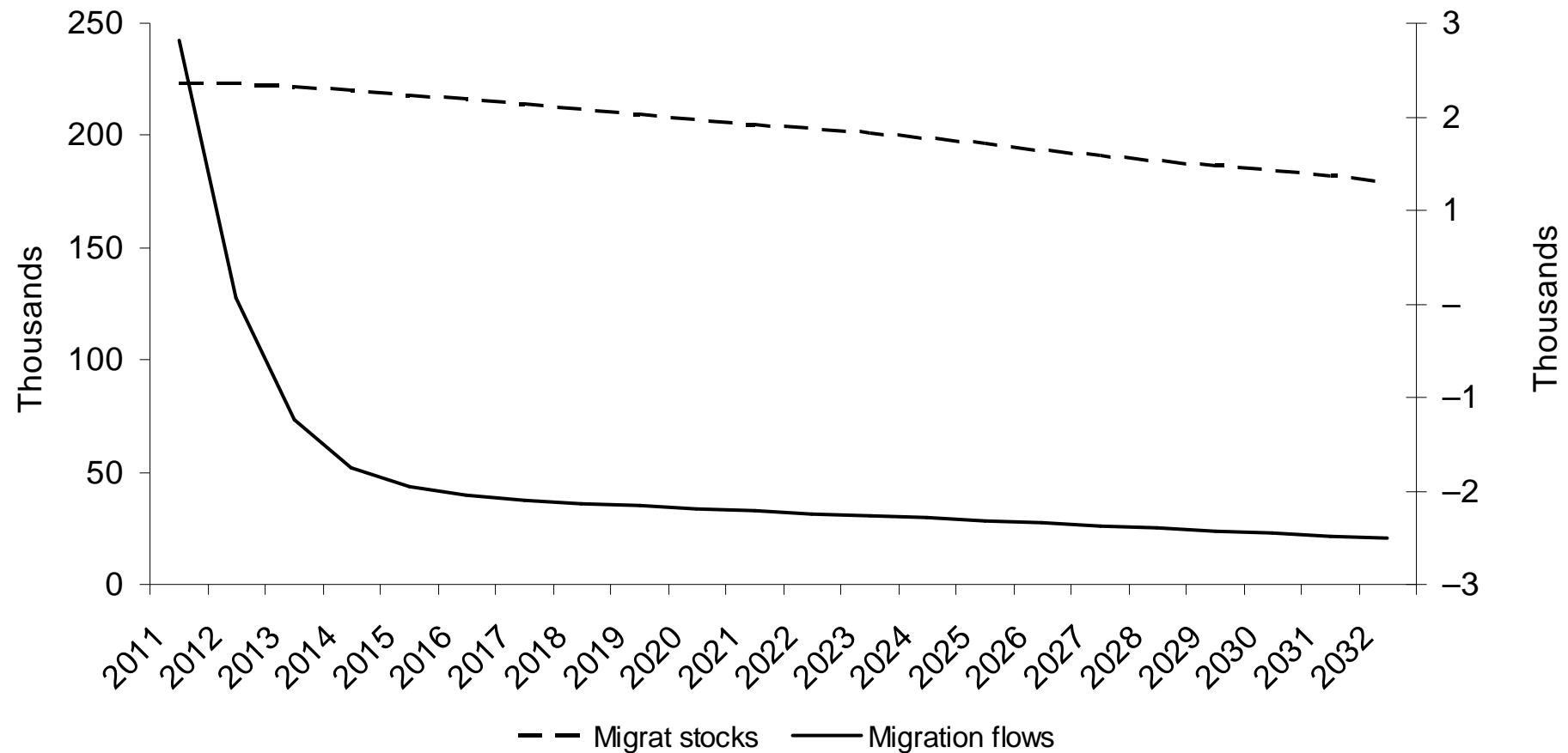# Extrapolation results for Turkish migration to the EU15 until 2030
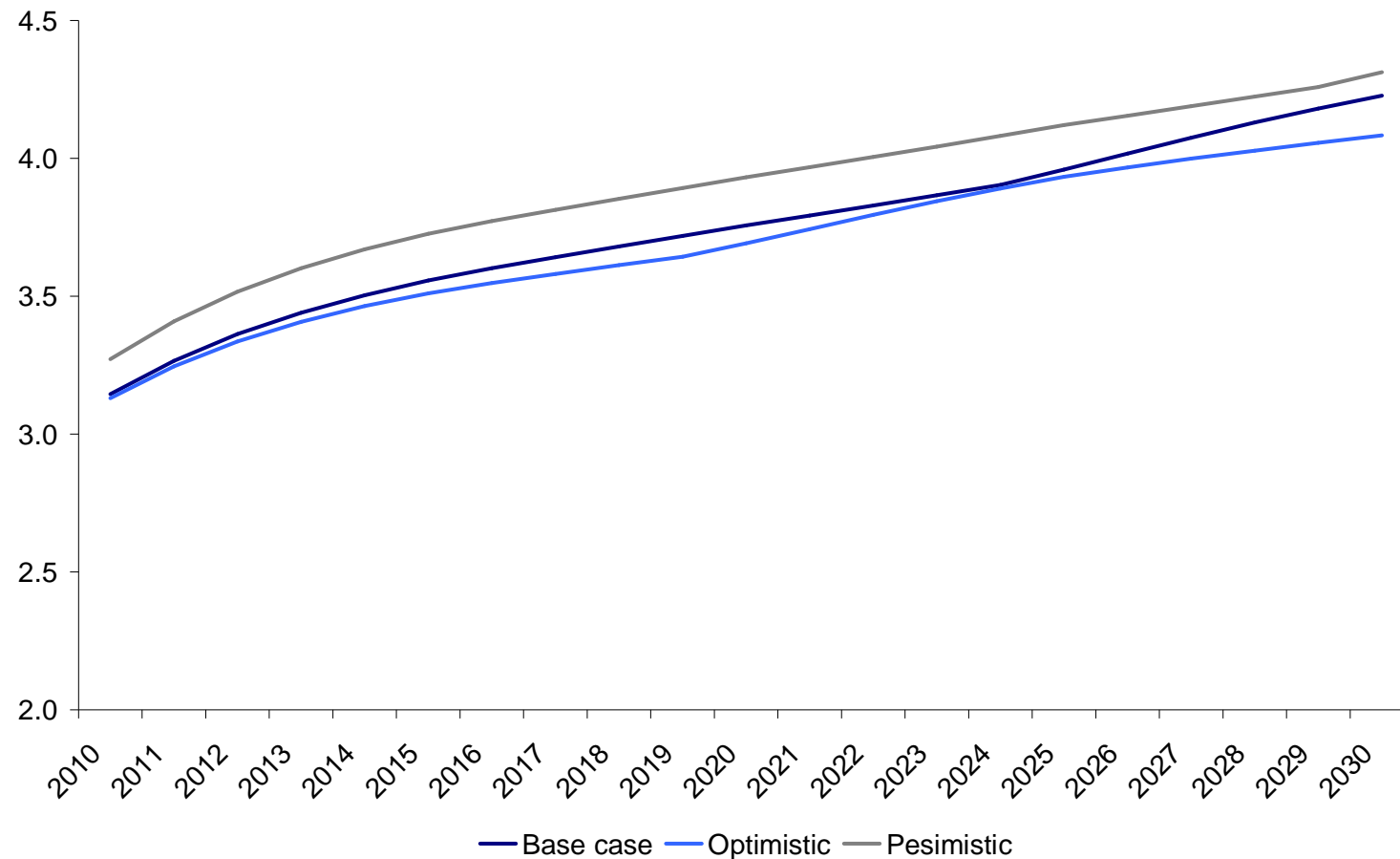
Prediction of migration flows: Turkey and Croatia 4

## Polish EU Accession in 2004: lessons for the further Enlargements (with regard to migration)?

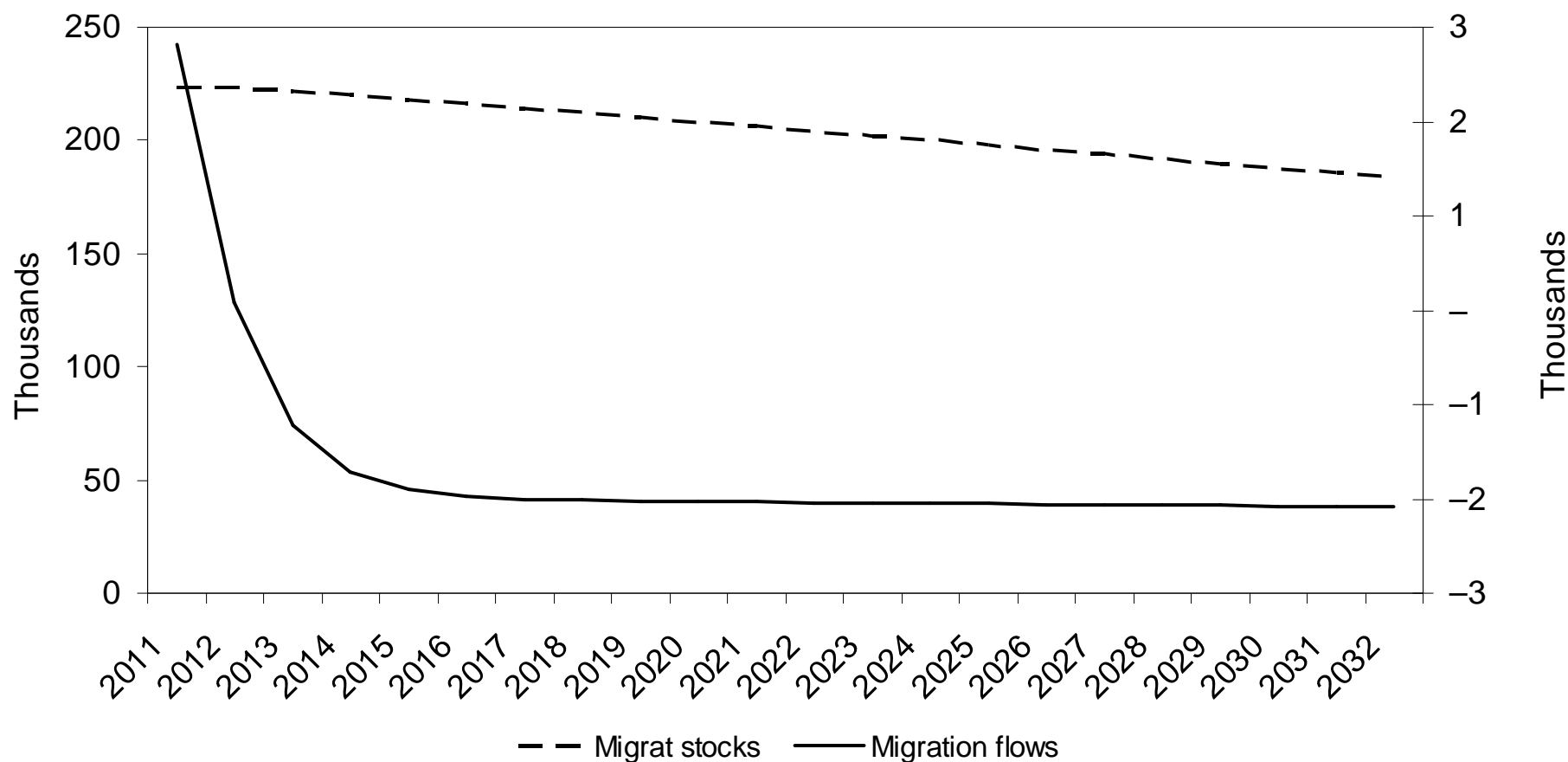|	Poland	Turkey
Population	38 million	73 million
GDP per capita (USD current PPPs)	19 747	15 320
Inward FDI	201 million USD	186 million USD
Unemployment rate (total civilian labor force)	9.6%	10.6%
Government deficit	-7.9% of GDP	-4.6% of GDP
Inflation	2.6%	8.6%

Year: 2010

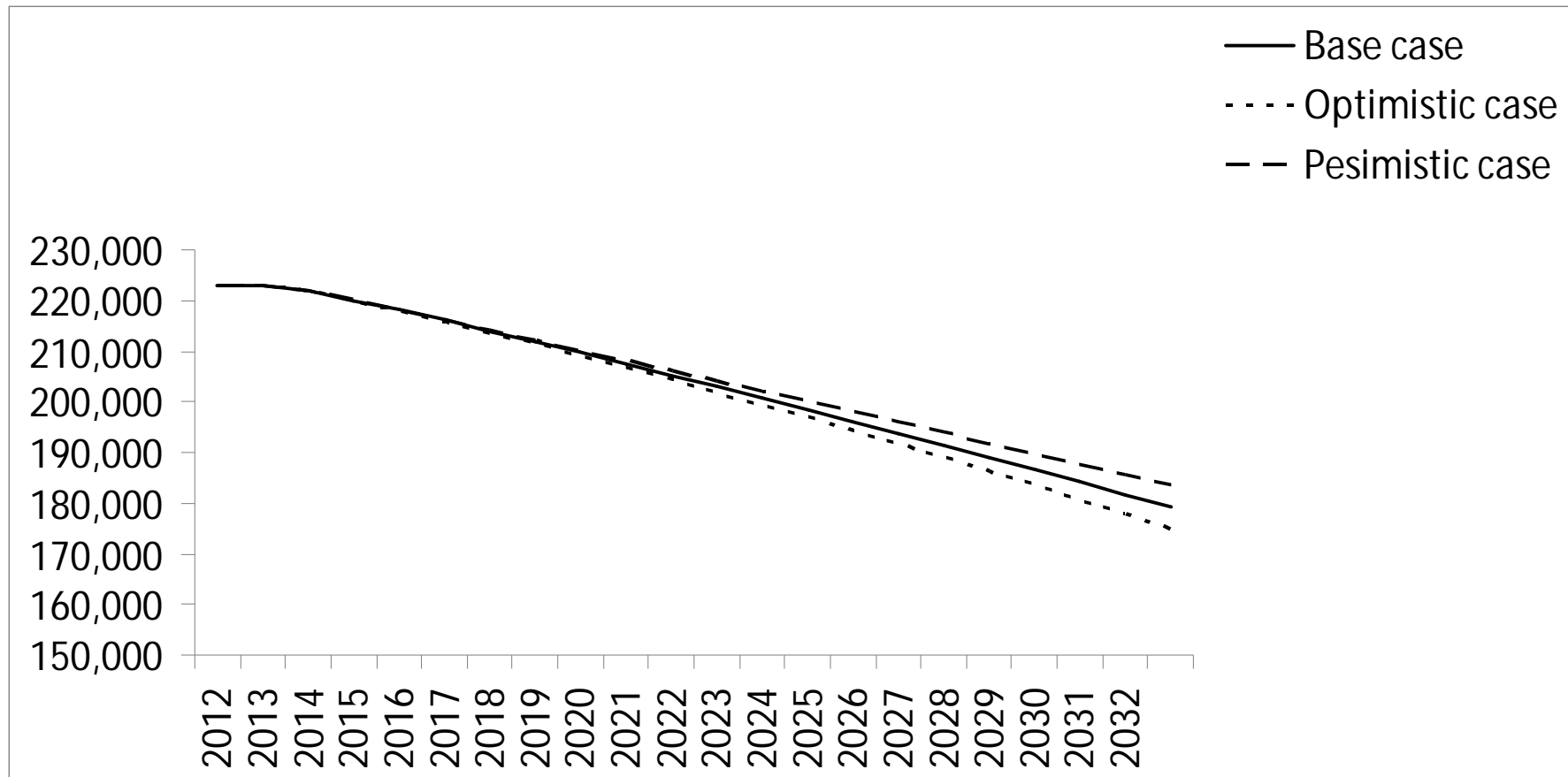# Realistic scenario: Croatia

Optimistic scenario: Croatia
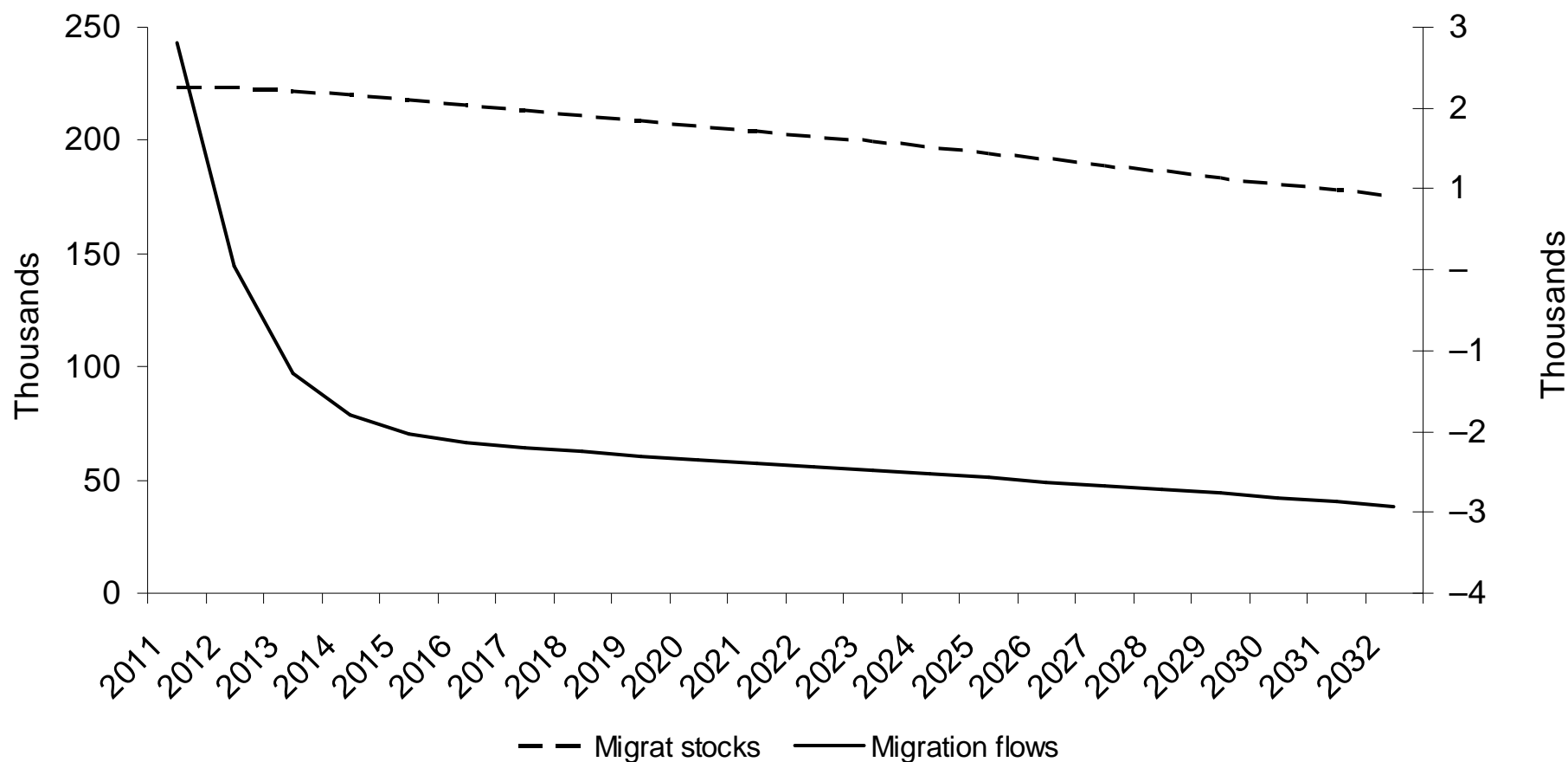
Pessimistic scenario: Croatia

Extrapolation results for Croatian migration to the EU15 until 2030

Prediction of migration flows:
Turkey and Croatia 5

- EU can not afford to have a "zero migration" policy under current institutional framework

- Turks (or Croats) with the strongest incentives to migrate had already settled in the EU

- The impact of economic convergence or introduction of free movement of labour on migration is not very significant, migration should not increase dramatically

- Factors such various social and political factors, can significantly change the character of migration and thus also the migrants flows

- The drop in migration in recent years might not be fully captured; hence the forecasted values tries to off set the recent decrease and can overshoot the real situation

Main conclusions

- EU can not afford to have a "zero migration" policy under current institutional framework

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Main conclusions 2

- V4 countries: from emigration countries to target countries for incoming migration
- Propensity to migration in V4 is not very high (except for Poland)
- Labour migration from the former USSR states (free movement of labour) or tourist visas?
- Channels of migration
- Visa abolition for the Eastern Europe: costs and benefits
- Economic benefits of migration is always positive
- Winners and losers of open borders and free migration flows

Thank you for your attention!

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