Does citizenship acquisition increase the probability of employment for immigrants? Evidence from Belgian labour market

Sousso Bignandi (HEC-Liege) & Céline Piton (NBB & ULB)

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Introduction

- Developed countries have accumulated sizeable immigration population over the recent decades

- In 2013, 12% of the population in France, 13% in Germany, 17% in Sweden and 28% in Switzerland (OECD, 2015)

- At the same time, they perform poorly in the labour market: higher unemployment rates and earn substantially less than natives (Algnan et al., 2010; OECD, 2015)

- This lack of social and economic integration➔ substantial challenges for destination countries (social security and fiscal benefits)

- This situation has therefore raised questions about policies that can help improve the integration of migrants into the labour market
  - ***One effective and efficient policy available to policy-maker is to grant citizenship rights to immigrants (Huddleston, 2010)***

Research question

- Does citizenship improve migrants' labour market integration in Belgium?

  - For whom it matters the most?

Citizenship effects

- Citizenship helps migrants to offset their labour market disadvantages in several ways:
  - Unrestricted access to the labour market (public sector jobs, some regulated jobs such as medicines, architects, notaries…), Peters et al., 2020
  - Unrestricted mobility of employees without any bureaucratic hurdles (Steinhardt, 2012)
  - Reduces statistical discrimination (Govind, 2020)
  - Acts as a signal of integration and as long-term commitment to stay (Corluy et al., 2011)
  - Lowers administrative costs of hiring for employers (OECD, 2011)
  - Other: access to higher education, better housing, credits, business creation, political participation…

Why Belgium?

- Belgium is a particularly interesting case study for several reasons:

  - In 2017, first-generation immigrants accounted for 17% of the total population and over 22% of the working age population (OECD, 2018)

  - Is also one of the worst OECD country in terms of employment performance of immigrants (56% vs 68% on average in OECD and almost 70% in EU)

  - Belgium is one of the EU countries with the most disparities between regions in terms of economic and migrant distribution
  - Until 2013, the access to Belgian nationality acquisition was quite easy (7 years of legal residency). No specific requirements in terms of integration or knowledge of languages

  Hence, **this study provides a valuable contribution to the existing literature** by studying this issue in a more liberal context, unlike previous studies which have focused on countries that impose strict conditions such as some European countries (France, Netherlands, Germany…)

Data

- Two types of data are gathered from the Crossroads Bank for Social Security (CBSS) :

  - The first database is a longitudinal database with individual data on the persons surveyed in the labour force survey 2008 and 2014 ad-hoc modules for the quarters from 2008 to 2014.

  - The second is an aggregate dataset which contains information on the entire population for all the years between 2009 and 2014

Data (2)

Comparison of both datasets

	Longitudinal dataset	Population dataset
Nb individuals	4,918	1,134,958
Type of observation	Every quarter (min 4, max 28, average 24)	Aggregate information each year
Period	2008-2014	2009-2014
Total nb obs.	118,195	6,809,746
Naturalisation		
Belgian	43%	37%
New Belgian	7.7%	9.5%
Foreigner	57%	63%
Years since naturalisation	28.3 years	27.9 years

Sources: CBSS Datawarehouse and Statbel (LFS 2008 and 2014 ad-hoc modules). Own computations.

Empirical strategy 1: evidence from longitudinal data

- Our model (Wooldridge, 2002)

$$Empl_{it} = \alpha_0 + \alpha_1 N_{it} + \alpha_2 (N_{it} * YSN_{it}) + \alpha_3 YSM_{it} + \alpha_4 YSM_{it}^2 + \beta X_{it} + \theta_t + c_i + \varepsilon_{it}$$

- $Empl_{it}$ is a dummy variable equal to 1 if individual i is employed at quarter t, and 0 otherwise.
- Our variable of interest N_{it} is a dummy variable set to 1 if individual i is naturalised in quarter t.
- YSN_{it} is the variable for years since naturalisation of individual i at quarter t.
- YSM_{it} is the variable that controls for years since migration of individual i at quarter t. $YSMsq_{it}^2$ represents the quadratic form of years since migration.
- X_{it} is a vector of covariates containing individual as well as macro characteristics, such as age, economic sector and migrants' regions of residence, that affect employment and may also be correlated with the naturalisation status of immigrants.
- θ_t represents time dummies and will control for cyclical effects on the dependent variable and potential time trends. c_i represent the individual specific time invariant component of the error term.

Results: Estimated effect of citizenship acquisition on employment probabilities

	Baseline	Eligibility criteria	Min. observations	Instrumental variable
	(1)	(2)	(3)	(4)
Naturalised	0.0686***	0.0692***	0.0624***	0.0707***
	(0.0052)	(0.0057)	(0.0055)	(0.0091)
Naturalised*YSN	0.0025***	0.0027***	0.0031***	0.0025***
	(0.0002)	(0.0002)	(0.0002)	(0.0003)
YSM	0.0167***	0.0035	0.0174***	0.0167***
	(0.0021)	(0.0027)	(0.0022)	(0.0021)
YSM^2	-0.0002***	0.0001*	-0.0002***	-0.0001***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Other covariates	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes
Nb. obs.	104,308	79,624	96,592	104,308

Sources: CBSS Datawarehouse, Statbel (LFS 2008 and 2014 ad-hoc modules), authors computations.
Robust standard errors in parentheses. Statistical significance *** p<0.01, ** p<0.05, * p<0.1. FE includes time, region of origin times region of residence and individual dummies. Other covariates include age categories.

Results (2): Analysis of the effect of naturalization on the type of job

	Public sector	**Private sector**	**Self-employed**	**Full-time job**
	(1)	**(2)**	**(3)**	**(4)**
Naturalised	-0.0042**	0.0457***	0.0270***	0.0602***
	(0.0020)	(0.0049)	(0.0037)	(0.0044)
Naturalised*YSN	0.0021***	-0.0009***	0.0013***	0.0007***
	(0.0001)	(0.0002)	(0.0002)	(0.0002)
YSM	0.0007	0.0106***	0.0054***	0.0065***
	(0.0008)	(0.0020)	(0.0015)	(0.0018)
YSM^2	-0.00002**	-0.0001***	0.00001	-0.0001**
	(0.00000)	(0.0000)	(0.0000)	(0.0000)
Other covariates	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes
Nb. obs.	104,308	104,308	104,308	104,308

Sources: CBSS Datawarehouse, Statbel (LFS 2008 and2014 ad-hoc modules), authors computations.
Robust standard errors in parentheses. Statistical significance*** p<0.01, ** p<0.05, * p<0.1. FE includes time, region of origin times region of residence and individual dummies. Other covariates include age categories and economic sectors.

Empirical strategy 2: evidence from the population data

- Our model:

$$Empl_i = \alpha_0 + \beta_1 N_i + \beta_2 HH_i + \theta X_i + \delta_t + \varepsilon_i$$

- $Empl_i$ as before, is a dummy variable equal to 1 if individual i is employed and 0 otherwise.

- Our variable of interest N_i is a dummy variable set to 1 if individual i is naturalised.

- HH_i is a variable that controls for household characteristics. This variable is categorised into 8 and indicates for example whether the individual is married or not, single with children or not.

- X_i is a set of covariates including: education level (2 dummies), age (8 dummies), origin country (10 dummies), gender, region of residence (2 dummies), reason for migration (6 dummies), and years since migration (10 dummies).

- δ_t represents years dummies. These will reflect the fact that the population may have different distributions across our study period.

- ε_i represents the error term.

Results 1: Estimated average marginal effects of citizenship acquisition on employment probabilities by gender

	Full (1)	Men (2)	Women (3)
Naturalised	0.0741*** (0.00143)	0.0787*** (0.00205)	0.0651*** (0.00198)
Household categories			
Base: Single			
Married couple with child	0.0267*** (0.00121)	0.0986*** (0.00160)	-0.0453*** (0.00192)
Married couple without children	0.0533*** (0.00160)	0.0792*** (0.00224)	0.0151*** (0.00234)
Non-married couple with child	0.0333*** (0.00164)	0.0655*** (0.00228)	-0.0149*** (0.00242)
Non-married couple without children	0.0998*** (0.00170)	0.0902*** (0.00248)	0.0828*** (0.00238)
Single with child	-0.0303*** (0.00180)	0.0279*** (0.00445)	-0.0895*** (0.00225)
Children in the household	-0.0923*** (0.00196)	-0.0942*** (0.00263)	-0.109*** (0.00298)
Another person living in the same household	0.0291*** (0.00165)	0.0482*** (0.00218)	-0.00495* (0.00254)
Education level			
Base: high			
Medium	-0.0218*** (0.00130)	-0.0217*** (0.00187)	-0.0197*** (0.00182)
Low	-0.0805*** (0.000992)	-0.0782*** (0.00143)	-0.0786*** (0.00138)
Other covariates	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Observation	1,328,835	663,156	665,679

Source: CBSS Datawarehouse 2009-2014, authors computations.
Robust standard errors in parentheses. Statistical significance*** p<0.01, ** p<0.05, * p<0.1. Other covariates include age, origin country, gender (for full), region of residence, reason for migration and years since migration. Year dummies include a dummy for all years from 2010-2014, 2009 being the base year. Note that low-educated individuals have a low secondary education diploma; medium-educated have a certificate of higher secondary education and high-educated hold a degree in tertiary education.

Results 2: by origin: EU vs non-EU

	EU			Non-EU		
	Full	Men	Women	Full	Men	Women
	(1)	(2)	(3)	(4)	(5)	(6)
Naturalised	0.0484***	0.0511***	0.0443***	0.0705***	0.0711***	0.0600***
	(0.00411)	(0.00643)	(0.00531)	(0.00155)	(0.00219)	(0.00218)
Other covariates	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observation	538,361	247,677	290,684	790,474	415,479	374,995

Source: CBSS Datawarehouse 2009-2014, authors computations.
Robust standard errors in parentheses. Statistical significance*** p<0.01, ** p<0.05, * p<0.1. Other covariates include age, education level, origin country, gender (for full), region of residence, reason for migration and years since migration and household composition. Year dummies include a dummy for all years from 2010-2014, 2009 being the base year.

Results 3: Estimated average marginal effect of citizenship on employment probabilities by origin regions

	EU-15	EU-13	Other European Countries	EU candidates	Maghreb	Near and Middle East	North America	Oceania Far East	Latin America	Other African Countries	Other Asian Countries
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
					Panel A: Full						
Naturalized	0.0346***	0.0950***	0.0391***	0.0494***	0.0904***	0.0421***	0.0695***	0.0219**	0.0743***	0.0745***	0.0549***
	(0.00544)	(0.00647)	(0.00349)	(0.00494)	(0.00304)	(0.00521)	(0.0249)	(0.00876)	(0.00777)	(0.00318)	(0.00744)
Observation	407,673	130,688	130,676	72,608	208,674	71,133	6,879	32,220	43,622	189,701	34,961
					Panel B: Men						
Naturalized	0.0369***	0.128***	0.0445***	0.0417***	0.0979***	0.0500***	0.0751**	0.0237*	0.0655***	0.0596***	0.0369***
	(0.00794)	(0.0113)	(0.00528)	(0.00673)	(0.00407)	(0.00665)	(0.0366)	(0.0124)	(0.0126)	(0.00464)	(0.0124)
Observation	192,995	54,682	58,006	41,974	126,778	49,294	3,251	14,554	16,934	92,791	11,897
					Panel C: Women						
Naturalized	0.0307***	0.0698***	0.0332***	0.0388***	0.0567***	0.0277***	0.0659**	0.0180	0.0797***	0.0803***	0.0578***
	(0.00739)	(0.00788)	(0.00465)	(0.00710)	(0.00450)	(0.00819)	(0.0333)	(0.0122)	(0.00981)	(0.00435)	(0.00929)
Observation	214,678	76,006	72,670	30,634	81,896	21,839	3,628	17,666	26,688	96,910	23,064
Other covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: CBSS Datawarehouse 2009-2014, authors computations. Robust standard errors in parentheses. Statistical significance*** p<0.01, ** p<0.05, * p<0.1. Other covariates include age, education level, gender (for full), region of residence, reason for migration and years since migration and household composition. Year dummies include a dummy for all years from 2010-2014, 2009 being the base year. Note that our results might underestimate the employment effect of citizenship for immigrants born in the EU-27 or/and outside the EU such as North American if they are working for international organisations such as NATO or the EU. The reason that, these individuals are recorded as inactive in the data from the BCSS.

Results 4: Estimated marginal average effects of citizenship on employment probabilities by level of development of origin countries

	Developed countries			Developing countries		
	All	Men	Women	All	Men	Women
	(1)	(2)	(3)	(4)	(5)	(6)
Naturalized	0.0592***	0.0608***	0.0553***	0.0778***	0.0765***	0.0676***
	(0.00249)	(0.00379)	(0.00329)	(0.00177)	(0.00246)	(0.00253)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	708,136	323,488	384,648	620,699	339,668	281,031

Source: CBSS Datawarehouse 2009-2014, authors computations.
Robust standard errors in parentheses. Statistical significance*** p<0.01, ** p<0.05, * p<0.1. Other covariates include age, education level, origin country, gender (for full), region of residence, reason for migration and years since migration and household composition. Year dummies include a dummy for all years from 2010-2014, 2009 being the base year.

Results 5: Estimated average marginal effects of citizenship on employment probabilities by education level

	Highly educated			Medium-educated			Low educated		
	Full	Men	Women	Full	Men	Women	Full	Men	Women
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Naturalized	0.0762***	0.0730***	0.0711***	0.0471***	0.0495***	0.0453***	0.0792***	0.0875***	0.0648***
	(0.00256)	(0.00373)	(0.00348)	(0.00342)	(0.00490)	(0.00475)	(0.00199)	(0.00281)	(0.00277)
Household categories									
Base: Single									
Married couple with child	0.0274***	0.106***	-0.0355***	0.0471***	0.116***	-0.0268***	0.0321***	0.0970***	-0.0446***
	(0.00209)	(0.00295)	(0.00298)	(0.00340)	(0.00446)	(0.00531)	(0.00168)	(0.00210)	(0.00296)
Married couple without children	0.0539***	0.0784***	0.0284***	0.0628***	0.0780***	0.0311***	0.0617***	0.0822***	0.0132***
	(0.00259)	(0.00391)	(0.00349)	(0.00444)	(0.00601)	(0.00666)	(0.00230)	(0.00307)	(0.00361)
Non-married couple with child	0.0324***	0.0710***	-0.00899**	0.0589***	0.0883***	0.0152**	0.0288***	0.0550***	-0.0222***
	(0.00284)	(0.00423)	(0.00386)	(0.00412)	(0.00563)	(0.00616)	(0.00233)	(0.00310)	(0.00371)
Non-married couple without children	0.0865***	0.0765***	0.0769***	0.116***	0.100***	0.108***	0.105***	0.0971***	0.0771***
	(0.00237)	(0.00375)	(0.00308)	(0.00432)	(0.00593)	(0.00639)	(0.00301)	(0.00403)	(0.00462)
Single with child	-0.0207***	0.0271***	-0.0661***	-0.0195***	0.0460***	-0.0776***	-0.0211***	0.0291***	-0.0884***
	(0.00360)	(0.00988)	(0.00413)	(0.00489)	(0.0126)	(0.00606)	(0.00234)	(0.00540)	(0.00320)
Children in the household	-0.120***	-0.119***	-0.133***	-0.110***	-0.111***	-0.131***	-0.0491***	-0.0622***	-0.0534***
	(0.00414)	(0.00624)	(0.00558)	(0.00379)	(0.00513)	(0.00578)	(0.00294)	(0.00368)	(0.00507)
Another person living in the same household	0.00863***	0.00840**	0.00282	0.0378***	0.0558***	0.000515	0.0397***	0.0646***	-0.0181***
	(0.00264)	(0.00379)	(0.00367)	(0.00435)	(0.00552)	(0.00710)	(0.00241)	(0.00303)	(0.00403)
Other covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Years dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	441,058	188,357	252,701	214,060	106,368	107,692	673,717	368,431	305,286

Source: Source: CBSS Datawarehouse 2009-2014, authors computations.
Robust standard errors in parentheses. Statistical significance*** p<0.01, ** p<0.05, * p<0.1. Other covariates include, age, origin country, gender (for full), region of residence, reason for migration and years since migration and household composition. Year dummies include a dummy for all years from 2010-2014, 2009 being the base year.

Conclusion

- Citizenship increases the employment probability of immigrants
- This effect is even stronger for non-EU immigrants
- The effect being small for women
- The level of education plays a very important role in the labour market

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Stat desc

	Longitudinal dataset			Population dataset			
	Total	Naturalised	Foreigners	Total	Naturalised	Foreigners	*p.m. natives*
Socio-economic position							
Employed	46%	50%	42%	49%	51%	47%	*69%*
Not employed	55%	50%	58%	51%	49%	53%	*31%*
Years of residence							
0-4 years	16%	1%	28%	28%	2%	44%	
5-9 years	19%	11%	25%	13%	11%	15%	
10 years or more	62%	83%	45%	52%	82%	34%	
missing	3%	4%	2%	6%	5%	7%	
Country of birth							
EU14	36%	16%	51%	32%	14%	43%	
Other EU countries	9%	5%	12%	11%	4%	14%	
Other European countries	7%	9%	6%	7%	9%	7%	
EU candidate countries	7%	12%	4%	8%	14%	4%	
The Maghreb	18%	28%	10%	17%	27%	10%	
The Near and Middle East	4%	5%	3%	4%	5%	3%	
North America	1%	0%	1%	1%	0%	1%	
Oceania and the Far East	3%	3%	2%	3%	3%	3%	
Central and South America	3%	4%	3%	3%	4%	3%	
Sub-Saharan Africa	10%	14%	7%	11%	15%	8%	
Other Asian countries	3%	4%	2%	3%	4%	2%	
missing	0.2%	0.0%	0.3%	0.01%	0.01%	0.01%	
Gender							
Men	47%	44%	49%	49%	46%	51%	*50%*
Women	53%	56%	51%	51%	54%	49%	*50%*

	Longitudinal dataset			Population dataset			
	Total	Naturalised	Foreigners	Total	Naturalised	Foreigners	*p.m. natives*
Age							
20-24	6%	5%	7%	8%	6%	10%	*11%*
25-29	9%	7%	11%	12%	8%	15%	*10%*
30-34	12%	9%	14%	14%	10%	16%	*10%*
35-39	14%	12%	15%	14%	13%	14%	*10%*
40-44	14%	15%	14%	13%	15%	12%	*11%*
45-49	13%	15%	11%	12%	14%	11%	*12%*
50-54	12%	14%	10%	10%	13%	9%	*12%*
55-59	11%	13%	9%	9%	11%	7%	*11%*
60-64	10%	10%	9%	7%	9%	6%	*10%*
Level of education							
At most lower secondary education	37%	41%	34%	18%	23%	16%	*11%*
Higher secondary education	27%	27%	28%	7%	11%	5%	*18%*
Tertiary education	27%	23%	29%	11%	11%	10%	*16%*
missing	9%	8%	9%	64%	55%	69%	*56%*
Type of household							
Single without children	n.a.	n.a.	n.a.	20%	14%	24%	*15%*
Single with children	n.a.	n.a.	n.a.	7%	9%	6%	*6%*
Married without children	n.a.	n.a.	n.a.	11%	11%	12%	*16%*
Married with children	n.a.	n.a.	n.a.	37%	48%	31%	*30%*
Unmarried couple without children	n.a.	n.a.	n.a.	5%	2%	7%	*7%*
Unmarried couple with children	n.a.	n.a.	n.a.	6%	4%	8%	*9%*
Other type of household	n.a.	n.a.	n.a.	13%	11%	14%	*18%*

Sources: CBSS Datawarehouse, Statbel (LFS 2008 and 2014 ad-hoc modules), authors' calculations.