Discussion of "Demographic changes, migration and economic growth in the euro area"

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Börsch-Supan, Duarte Nuno Leite and Johannes Rausch (2019)

- Excellent paper which focuses on the **macroeconomic impact of aging on labor, financial, and goods markets, which affect more broadly growth and productivity**, in the euro zone area.

- The authors use a multicountry OLG model to quantify these effects, assuming:

  1. exogenous labor supply based on current labor force participation rates;
  2. exogenous labor supply driven by policy reforms (higher retirement age and female labor force participation, lower labor market entry age);
  3. endogenous labor supply, which in part offsets the impact of policy reforms.

What I learned from the paper (cont.)

- The authors consider four drivers of population aging:
  - the secular increase of life expectancy;
  - the historically given babyboom-babybust transition;
  - current and future fertility;
  - and migration.

- Population aging will likely have **sizable effects on the euro zone**, in terms of the old-age dependency ratio, labor supply, GDP and GNP growth, per capita consumption, international capital flows, wages and returns to capital.

What I learned from the paper (cont.)

- Since immigrants come in their prime working age, they likely increase *L* and *L/N*.

- Given "various assumption about the number and age structure of migrants," the mitigating effect of migration on population aging is limited:

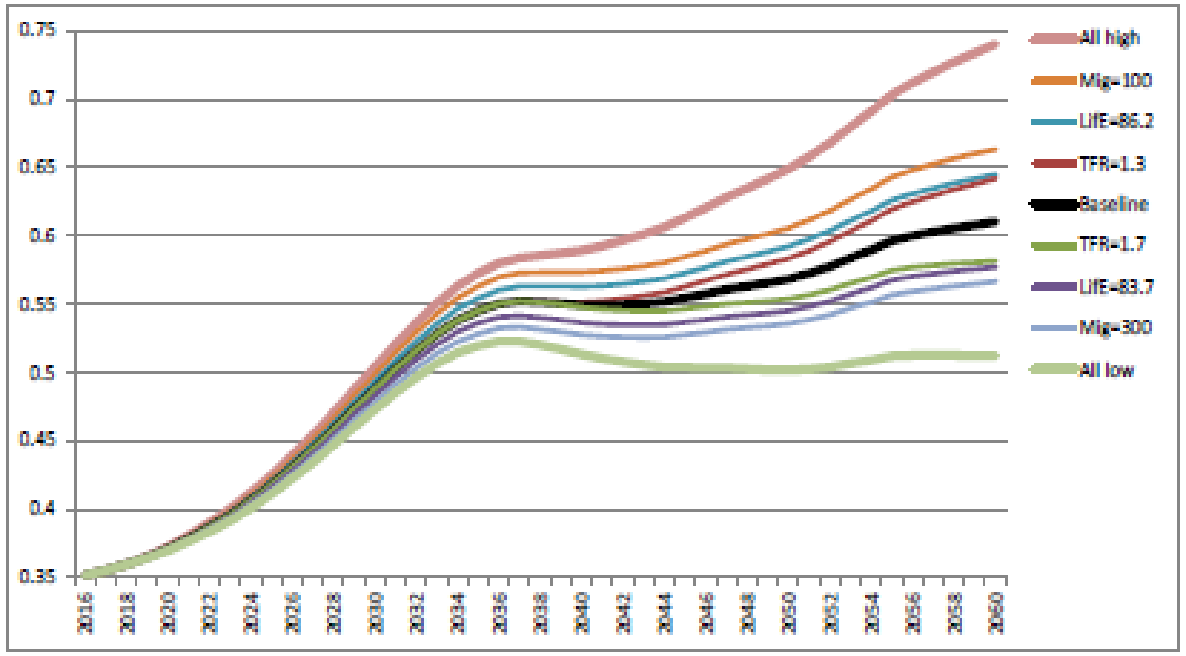
    1. even very large migration waves are unlikely to compensate the labor force (L) reduction that will occur when the babyboom generation will die;

    2. even extremely large migration waves will not undo the structural effect of a change in the dependency ratio.

- My discussion will focus on the role of immigration and discuss other channels through which immigration affects *L* and more broadly *Y* that should also be taken into account.

Chart 3

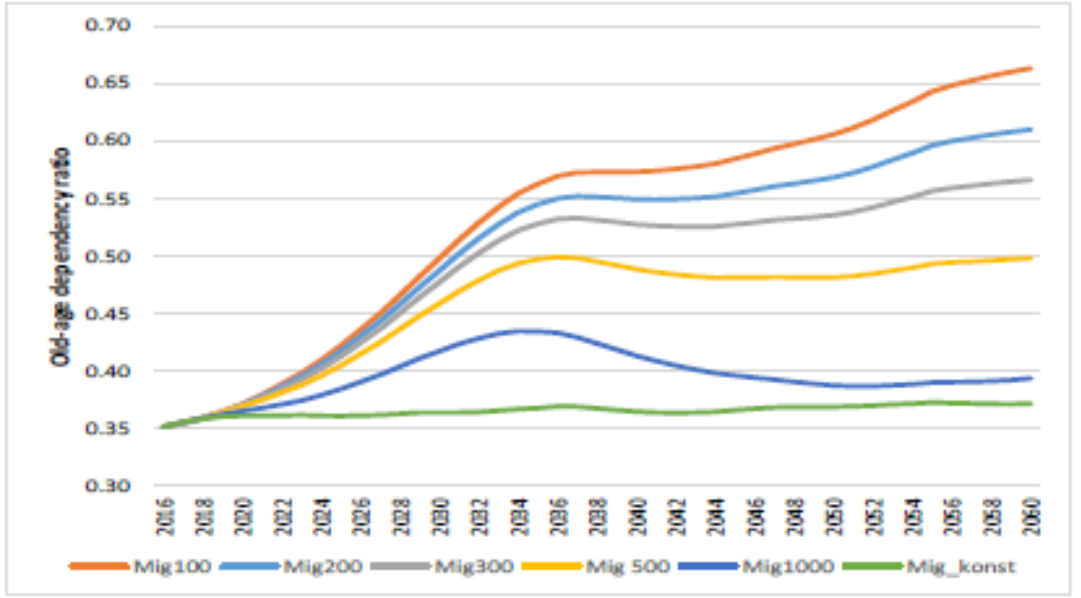
Old-age dependency ratio (65+/20-64) in Germany under alternative assumptions



Source: Own computation based on PENSIM model (Börsch-Supan and Rausch, 2019).

Chart 4

Effect of migration on dependency ratio (Germany)



Source: Own computation based on PENSIM model (Börsch-Supan and Rausch, 2019).

Fertility rates of immigrants vs. natives

- My understanding is that, **in charts 3 and 4, immigration only affects the size and the current age structure of the population, but NOT the fertility rate**.

- However, migrants have higher fertility rates than natives, so an increase in migration has an impact both in the short run (because of a younger population structure) and in the long run (because of higher fertility rates).

- See Charts 3 and 4: combining an increase in migration with an increase in fertility, the mitigating effect on population aging is larger.

Table 2: Share of births and total fertility rates (TFR) of natives and immigrants.

Country	Period	% Births		TFR [a]		Source
		Migrants	Foreign Nationals	Native	Immigrant	
Austria	2000		13.5	1.29	2.03	Kytir 2006
	2005		11.7			Kytir 2006
Belgium (Flanders)	2003–04	16.81	12.4			VAZG 2007
	2001-05			1.50	3.00	
Denmark	1999-03	13.5	11.1	1.69	2.43	Statistics Denmark 2004
England - Wales	1980	13.3				Schoorl 1995
	1995	12.6				ONS 2006
	2001			1.6	2.2	ONS 2006
	2005	20.8				ONS 2006
	2006	21.9				ONS 2007
France	1991–98	12.4		1.65	2.5	Toulemon 2004
	2004	15	12.4	1.8	3.29	Prioux 2005; Heran and Pison 2007
Germany	1980		15			Schoorl 1995
	1985		11.2			Schoorl 1995
	1995		16.2			Statistisches Bundesamt 2006
	2004		17.6			Statistisches Bundesamt 2006
Italy	1999		5.4			ISTAT 2007
	2004		11.3	1.26	2.61	ISTAT 2006, 2007
	2005		12.2			ISTAT 2007

Table 2: Share of births and total fertility rates (TFR) of natives and immigrants.

Country	Period	% Births		TFR [(a)]		Source
		Migrants	Foreign Nationals	Native	Immigrant	
Netherlands	1996	15.5				CBS Statline 2006
	2005	17.8		1.65	1.97	CBS Statline 2006
Spain	1996		3.3			INE 2006 & 2007
	2000		6.2	1.19	2.12	
	2004		13.7			
	2006		16.5	1.32	1.64	Roig Vila and Castro Martin 2007
Sweden	2005	19.5	11.8	1.72	2.01	Statistics Sweden 2006
Switzerland	1980		15.3			Coleman 2003
	1997			1.34	1.86	Wanner 2002
	2000		22.3			Coleman 2003
	2005		26.3			SFSO 2006

Source: Data compiled from Tables 1 and 2 a & b in Sobotka (2008)

(a) TFR data is for Native nationals (instead of natives) and foreign nationals (instead of immigrants) in Austria, Flanders, France in 2004, Italy, Spain and Switzerland.

Role of immigration with population aging: *Price channel and implications for labor force participation*

- Low-skilled immigration has reduced prices (see Lach 2007 for demand-based explanation; Cortes 2008 for cost-based explanation).

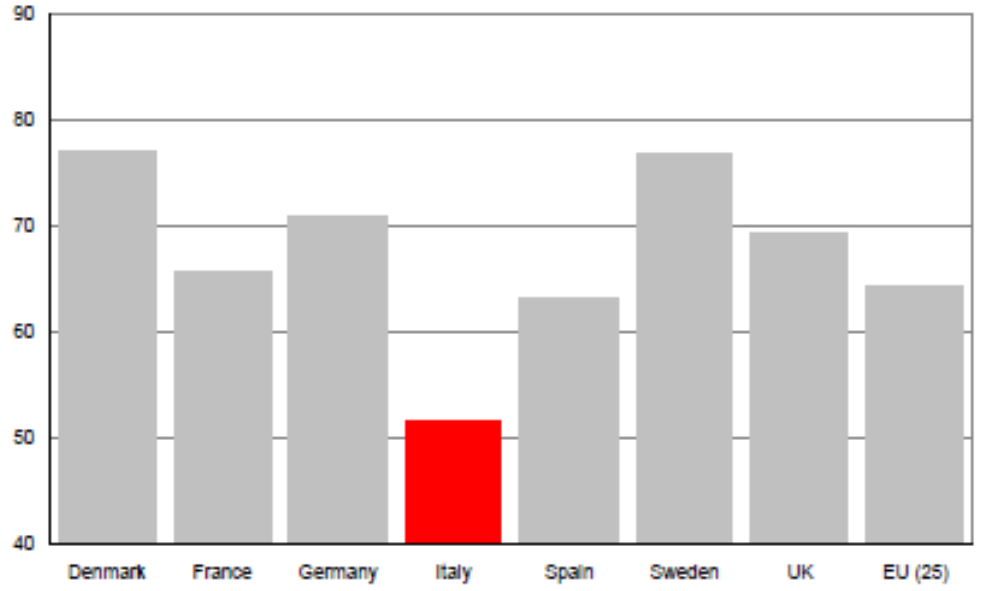
- As a consequence of these prices effects, **low-skilled migration has increased the extent of labor force participation of high-skilled women** (Cortes and Tessada 2011; Barone and Mocetti 2011; Farrè, Gonzales and Ortega 2009).

- In particular, high-skilled women have been able to outsource household related tasks to low-skilled immigrants (whose arrival has led to lower prices of these services).

- Higher labor force participation of women can in part offset the impact of aging on the labor force.

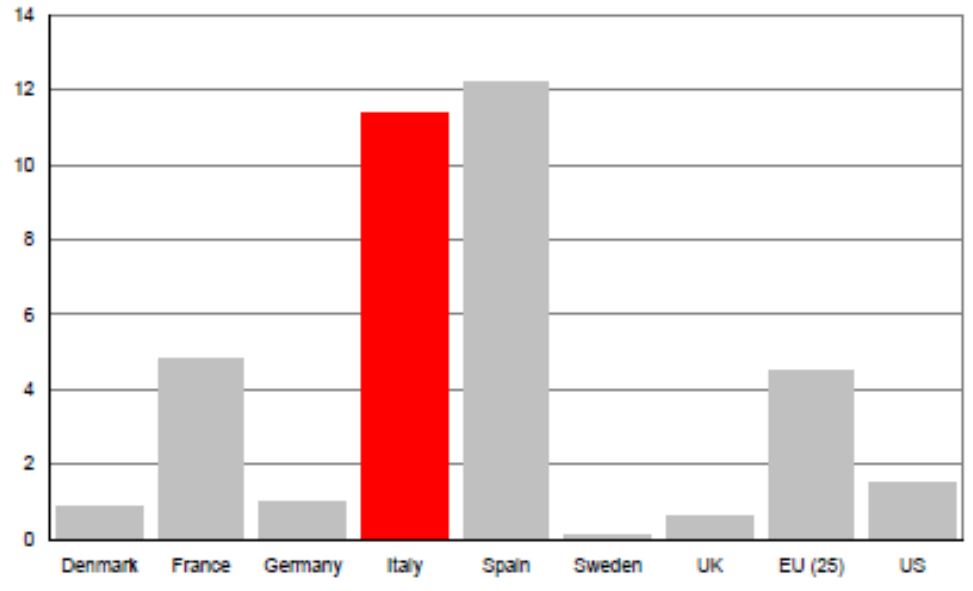
Barone and Mocetti (2011)

Figure 1: Female Labor Force Participation



Figures refer to 2008. Source: Eurostat (http://nui.epp.eurostat.ec.europa.eu/nui/show.do?dataset=lfsi_act_a&lang=en).

Figure 3: Fraction of Foreign-born Employment in Private Households



Figures refer to 2007 (for EU25 refer to 2005–2006 average). Source: OECD (2009).

Long-term care

- Related to the latter point, one of the services provided by immigrants within the household is long-term care.

- In countries, like Southern European countries, where it is mostly families (as opposed to public or private institutions) that provide care for the elderly, immigrants fill an important gap – given the limited supply of native providers.

- And of course population ageing in Europe is expected to significantly increase the demand for long-term care.

- Not much empirical evidence on the migration of long-term care providers.

Health care

- Population aging will also increase the demand for health care services.
- The share of immigrant workers in the health sector is substantial especially in some countries in the euro zone.
- For example, according to the WHO (2014), by 2008 almost half of the nurses employed in Ireland were foreign trained, and the same is true for over a third of the doctors registered there (Dustmann, Facchini and Signorotto 2018).

Table 3.3 *Foreign-trained (or foreign) nurses and doctors in selected OECD countries, based on professional registries (WHO, 2014, p. 87)*

	Year[a]	Number	Share (%)
Nurses			
Foreign-trained			
Finland	2008	530	0.5
Netherlands	2005	3479	1.4
Sweden	2007	2585	2.6
US	2004	100791	3.5
Denmark	2005	5109	6.2
Canada	2007	20319	7.9
United Kingdom	2001	50564	8
New Zealand	2008	9895	22.1
Ireland	2008	37892	47.1
Foreign			
Belgium	2008	2271	1.5
France	2005	7058	1.6
Portugal	2008	2037	3.6
Italy	2008	33364	9.4

Table 3.3 *Foreign-trained (or foreign) nurses and doctors in selected OECD countries, based on professional registries (WHO, 2014, p. 87)*

Doctors			
Foreign-trained			
Poland	2005	734	0.6
Austria	2008	1556	4.1
France	2005	12124	5.8
Denmark	2008	1282	6.1
Netherlands	2006	3907	6.2
Belgium	2008	289	6.7
Finland	2008	2713	11.7
Canada	2007	14051	17.9
Sweden	2007	6034	18.4
Switzerland	2008	6659	22.5
US	2007	243457	25.9
United Kingdom	2008	48697	31.5
Ireland	2008	6300	35.5
New Zealand	2008	4106	38.9
Foreign			
Slovak Republic	2004	139	0.8
Japan	2008	2483	0.9
Greece	2001	897	2.5
Italy	2008	14747	3.7
Germany	2008	21784	5.2
Portugal	2008	4400	11.1
Norway	2008	3172	15.9

Role of immigration with population aging: *Innovation/productivity channel*

- Distribution of immigrants often bi-modal, both low-skilled and high-skilled immigrants.
- **Skilled immigrants have a positive impact on innovation, and as a consequence on productivity (A),** through potentially:
  - Knowledge flows from origin countries;
  - Selection effects on observables (field of study) and unobservables (ability, motivation);
  - Task specialization (research vs. administration tasks);
  - Greater labor mobility across firms which gives rise to knowledge diffusion across firms
- Evidence for the U.S.: Hunt and Gauthier-Loiselle (2010), Kerr and Lincoln (2010), Doran et al (2014); for France: Mayda, Orefice and Santoni (2019).

Skilled immigrants: engine of growth and innovation in the U.S.

- 47% of the U.S. science and engineering workforce with PhD education in 2000 are immigrants (Kerr and Lincoln 2010)

- 24% of all patents originating from the U.S. are authored by non-citizens (Wadhwa et al. 2007)

- 26% of U.S.-based Nobel Prize recipients between 1990 and 2000 were immigrants (Peri 2007).

- 25% of founders of public-venture-backed U.S. companies in 1990-2005 are also foreign born (Anderson and Platzer, 2006).

Other considerations

- The authors mention FDI as a possible mitigating factor. A growing literature shows that **immigrants and even refugees increase FDI** (Javorcik et al 2011, Burchardi et al 2016, Mayda, Parsons and Vezina 2019).

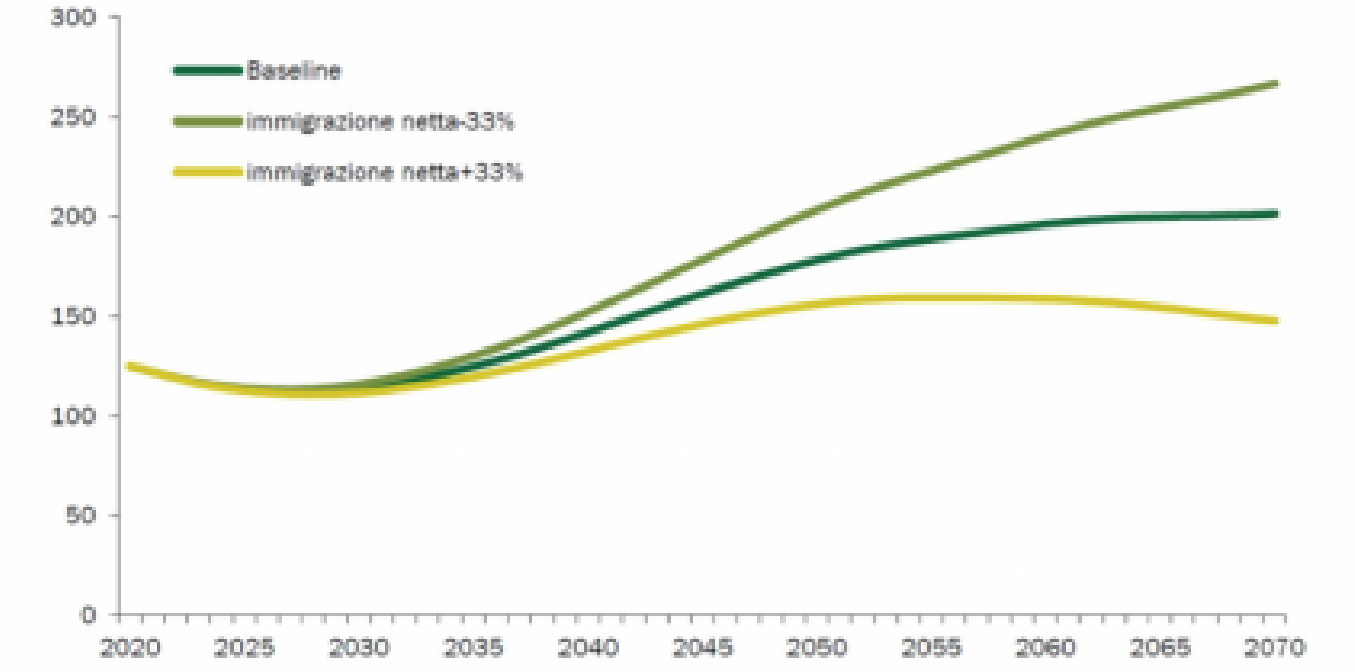
- "**The Floridization of Europe: Old Age North–South Migration**": not much evidence for Europe, some evidence for the U.S.. Among the main determinants of elderly migration, the portability of social security benefits is especially important (Dustmann, Facchini and Signorotto 2018).

- **Permanent vs. temporary migration**: i.e. whether old migrants go back to their country of origin. European countries display significantly higher outmigration/return rates compared to the more traditional destination countries (Dustmann and Görlach 2016).

- The **fiscal impact of immigration** varies a lot across studies/countries and depends on assumptions, for example participation in the welfare state of immigrants vs. natives. A telling example: the fiscal impact of immigration in Italy.

Immigrazione e debito pubblico: l'opinione del governo

FIGURA IV.5: SENSITIVITA' DEL DEBITO PUBBLICO A UN AUMENTO/RIDUZIONE DEL FLUSSO NETTO DI IMMIGRATI (in percentuale del PIL)



Fonte: Elaborazioni MEF tramite il Modello di Previsione di Lungo Periodo della Ragioneria Generale dello Stato.

from Boeri (2019)

Conclusions

The interaction of immigration and population aging is substantially more complex than the direct effect of immigration on the working age population (because of a different age structure).