



DEPARTMENT OF ECONOMIC & REGIONAL DEVELOPMENT

«Refugee flows: How the European Union faced this crisis and how it could use it.»

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“Migration has been politicized before it has been analysed.”

Paul Collier– Exodus

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Abstract

Motivated by the enormous random refugee flows which appeared on the Southern European borders in early 2015 and the rise of the far-right parties in the European Union, this study assesses to what degree and how the European mass media coverage of random daily arrivals of refugees, particularly in Greece, are associated with the voting intentions of European citizens to vote for far-right parties. In the late 2000s, fiscal and monetary obligations led to strained austerity in the Southern European countries. This study aims to link these the two major events that shook Europe's economies.

The intention by linking these two hot topics is to assess how the European Union faced the enormous refugee flows and how could use it, to prevent fiscal and monetary interventions in favor of economic stability.

Keywords: European Union, far-right, refugee flows, rolling opinion polls, voting behavior, ageing economies, economic stability, equilibrium

Introduction

The approach of economic science in relation to the management of refugee flows could lead to the creation of policies aimed at economic stability. Certainly, the goal of a fiscal and monetary authorities is to pursue policies that lead economies on dynamic, low-inflation paths without distorting growth opportunities.

This thesis aims to link the hot topics of refugee flows and aging economies in Europe, focusing on the short-run and the long-run implication of immigration. Specifically, the short-run impact of immigration on voters' preferences for far-right parties. Then, the long run fiscal and monetary effects of mass immigration. Nowadays, most of the EU countries have accepted these flows as a “necessary evil” rather than as a tool for their economic stability. Hence, my intention is to address how refugee flows could help economies with a high rate of aging to prevent fiscal and monetary interventions in favor of economic stability.

According to the short-run implications of immigration, this study assesses to what degree and how the European mass media coverage of random daily arrivals of refugees, particularly in Greece, are associated with the voting intentions of European citizens to vote for far-right parties. Specifically, we utilize a unique dataset that we have put together which records daily refugee arrivals on the Greek Islands of Lesbos, Samos, Chios, Leros and Kos between 1st January 2016 and 28th April 2019. As a result, the model provides statistically significant outcomes: not only do daily refugee flows have an indirect effect on voting intentions for far-right parties, but the European Citizens voting intention for far-right parties also increases by approximately 1.8% for every 10% increase in accumulative refugee flows to the Greek islands.

Regarding the long-run implications of immigration – inspired by the strained austerity in the southern European countries were faced due to fiscal and monetary obligations – the present study investigates whether population aging, and immigration require specific policies from the fiscal and monetary authorities to preserve the economy to an optimal path. This study develops a simple exchange economy that consists of an infinitely lived monetary and fiscal authority and a countable infinity of two-period lived overlapping cohorts to assess the effects of increased immigration to

equilibrium rates, optimal allocations, debt and sets of policy instruments that lead to dynamically efficient outcomes.

According to Goodkind & Kowal (2016), the majority of the European developed countries have been aging for decades. Aging economies in European developed countries are expected to continue to increase, and by 2050, almost one-fifth of the world's older population will live in industrialized countries. Specifically, in 2015 the population aged 65 and over in Europe was 129.6 million, whilst the prediction for 2030 and 2050 is 169.1 million and 196.8 million, respectively. Certainly, we should be concerned that governments finance the payment of pension and health care benefits to the elderly by taxing workers and by borrowing against future generations.

Governments usually follow conservative policies, fearing to pursue radical policies either by choice or by the impact on public debate. The literature regarding the impact of the media illustrates the effect media coverage can have on political attitudes (Iyengar, Peters, and Kinder 1982; Kahn and Kenney 2002). Agenda-setting theory describes the process by which the news media, by giving more salience to certain events and issues over others, influences the public's perception about which issues are most important. Attribute agenda setting suggests that if the media choose to emphasize certain characteristics of an issue in news coverage, these aspects of the issue will become more salient in the public mind (Kim, Scheufele, and Shanahan 2002; Soroka 2002).

Therefore, the model shows that in aging economies the monetary authority needs to adjust her policy and set interest rates higher than the ones under no aging. This is necessary in order to keep private incentives in equilibrium and avoid suboptimal choices. Additionally, an exogenous shock in the youthful mass-exogenous immigration of an aging economy limits the need for monetary policy intervention relative to an aging only economy. This is due to the increased savings that young immigrants generate, which work as a buffer stock for old-age transfers reducing the fiscal burden.

Undoubtedly, the impact of migration on the labor market cannot be ignored when analyzing the above. The effect of migration on the labor market is difficult to ascertain, but that does not mean that it is negligible. There has been a lot of research

on the question of how migration affects the labor market outcomes of natives. In the simplest labor market supply and demand model, migration causes the labor supply curve to shift outwards. Based on the above, further research could integrate perspectives from economics, sociology, and immigration management. Interdisciplinary research will aim to investigate how economic and social policies frame the institutional conditions for reducing inequalities and increase radical innovation in terms of refugee integration.

The contribution of this work is to show, on the one hand, the evaluation of daily arrivals of refugees on the Greek islands as an exogenous shock that hits the European Union and link it to mass media daily coverage of refugees in 28 European countries, to examine the tendency of the individual voter to support far-right parties. On the other hand, the second contribution is to show that a simple exchange economy that consists of an infinitely lived monetary and fiscal authority and a countable infinity of two-period lived overlapping cohorts can help us assess the effects of increased immigration to equilibrium rates, optimal allocations, debt and sets of policy instruments that lead to dynamically efficient outcomes. Including all the above mentioned, the intention by linking these two hot topics is to assess how the European Union faced the enormous refugee flows and how could use it, in order to prevent fiscal and monetary interventions in favor of economic stability.

The plan of this study is as follows. Chapter 1 discusses the migration and refugee flows in Europe through the years. Chapter 2 analyses the spread of the far-right parties in Europe. Chapter 3 summarizes the role of mass media on rising far-right. Chapter 4 describes the research methodology, the empirical framework, and tools. Chapter 5 presents the empirical finding on the role of mass media coverage on refugee flows on rising far-right parties in Europe. Chapter 6 interprets the research findings. Chapter 7 discusses the existing European policies on refugee flows through the years. Chapter 8 describes the demographic changes in Europe and the ageing problem. Chapter 9 presents a new approach for an economic policy on ageing economies. Chapter 10 discusses the two-way relationship between labor market migration. Finally, Chapter 11 contains the discussion, implementation, limitations, and further research.

Chapter 1 – Migration and Refugee Flows in Europe.

1.1 How refugees and immigrants spread to Europe overtime?

Over the last 80 years or so Europe has experienced flows for different reasons. For example, labor migration. About 15 million people moved between Germany, Poland, and Czechoslovakia due to border changes after the Second World War.

Since the early 1950s, when Europe started to develop under different conditions, economic conditions created the need for more workers, especially in Germany, the United Kingdom and France. Workers from Southern Europe, such as Italy and Spain with low growth rates turned to the developed countries of Europe. Between 1950 and 1973 net migration for the Southern countries reached 10 million.

This, combined with the 1973 oil shock, forced countries such as the UK to discourage further immigration by asking existing migrants to leave. However, the economic incentives of joining the European community also made the Southern European countries such as Greece and Italy more attractive to immigrants.

In the mid-1980s, with communism collapsing, the countries of Eastern Europe gained greater freedom of movement, with the result that Eastern Europe became a hub for asylum seekers. In the decade between 1989 and 1999 some 4 million people sought asylum in Europe, 35% from Asia and 19% from Africa (Salt, 2000). As immigration increased, Western Europe's policies was harsher towards asylum seekers. As a result, illegal immigration grew, and smugglers increased.

Following the previous retrospective, Table 1 presents data from the OECD's migration reports (Eurostat, 2000).

Table 1: Inflows of foreign citizens (1990-1999 – thousand)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Austria	-	-	-	-	-	-	-	57	-	-
Belgium	51	54	55	53	56	53	52	49	51	58
Denmark	15	18	17	15	16	33	25	20	21	-
Finland	7	12	10	11	8	7	8	8	8	8
France	102	110	117	99	92	77	76	102	138	104
Germany	842	921	1208	987	774	788	708	615	606	674
Greece	10	14	10	18	15	18	20	17	35	-
Hungary	37	23	15	16	13	13	13	12	12	15
Ireland	-	-	-	-	13	14	22	24	21	22
Italy	97	71	59	51	53	68	143	-	111	268
Luxembourg	9	10	10	9	9	10	9	9	11	12
Netherlands	81	84	83	88	68	67	77	77	82	78
Norway	16	16	17	22	18	17	17	22	27	32
Portugal	-	-	14	10	6	5	4	3	7	11
Sweden	53	44	40	55	75	36	29	33	36	35
Switzerland	101	110	112	104	92	88	74	73	75	86
United Kingdom	-	-	-	190	194	206	216	237	258	277

Source: Eurostat, 2000

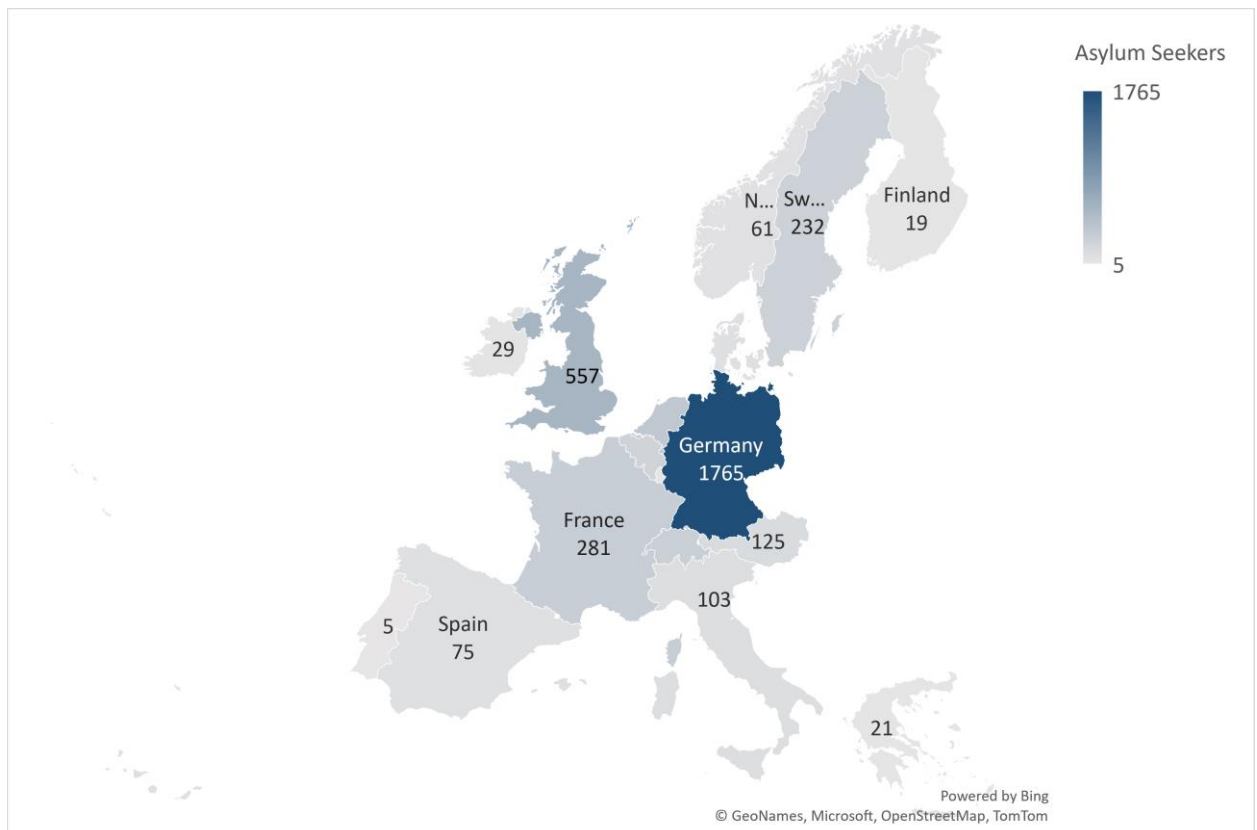
As Table 1 indicates, Germany leads the way in inflows of foreign citizens. Then we see with a large gap from Germany but still with significant numbers for United Kingdom, France, and Switzerland. While, Portugal, Finland and Luxembourg have the smallest number of inflows.

The problem faced is the difficulty of tracing illegal migrants is the absence of official records. Smugglers play an important role in the transport of illegal migrants who are not concentrated at reference points in the country concerned but enter illegally through smugglers' routes. According to Jonas Widgren¹, in 1993, 60,000 illegal immigrants arrested at European borders.

¹ Former Director General of the International Center for Migration Policy Development, 1993

Figure 1 illustrates the total flows of migrants seeking for asylum, between 1991 and 2000, in selected EU countries. We note that Germany continues to lead the way with the UK, Switzerland and France following. At the opposite side, Portugal seems to have the smallest number of asylum seekers.

Figure 1: Inflows of Asylum seekers into selected countries in Europe (1991-2000 – Thousands)



Source: Eurostat, 2000

1.2 Refugee Flows in Greece

Since 2015 the European Union has experienced the largest mass movement of people since World War II. More than 1 million refugees and immigrants have arrived in the European Union due to conflicts and tensions in the Middle East, in an attempt to try to escape from the war and terror in Syria and other countries. Greece is one of the European countries that has received an enormous number of refugees proportionately per capita, most of whom are camped in asylum accommodation hot spots awaiting the decision on their pending asylum request to remain in Greece but

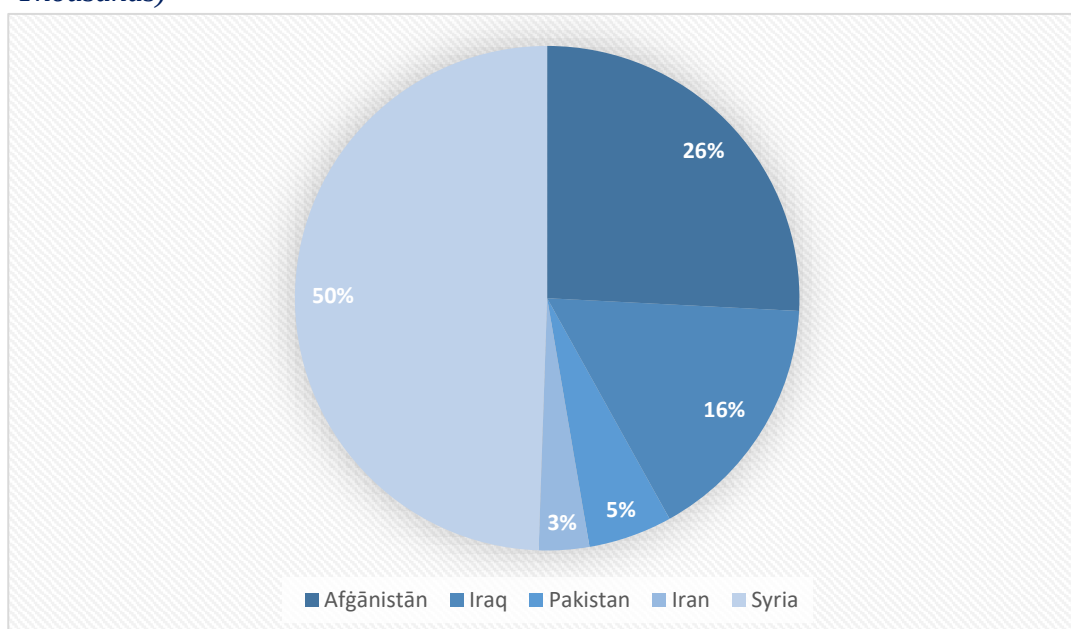
also willing to move to another European country with higher standards of living and more labor opportunities.

1.2.1 Greece: The refugee & migration crisis in numbers

Almost 27,600 refugees were pre-registered in 55 days (from 6 June 2016 to 30 July 2016) in Greece. It is worth noting that in addition to the pre-registration, in 2016 there were 264% more asylum requests than in 2015². In 2015 the arrivals in Greek island reached 872,519. However, after EU-Turkey Declaration, namely from April to October 2016 the arrivals of refugees were 20,164 (18,519 from sea borders and 1,645 from land borders).

Observing the profile of immigrants and refugees between 1.1.2016 - 31.10.2016 (Figure 2), 46% of those who entered Greece by land and sea borders come from Syria, 24% from Afghanistan, 16% from Iraq, 5% from Pakistan, 3% from Iran. In addition, 64% of entrants are male and 36% female, 24.5% of men and 31.9% of women are under 18 years of age.

Figure 2: Inflows of Asylum seekers into selected countries in Europe (1991-2000 – Thousands)



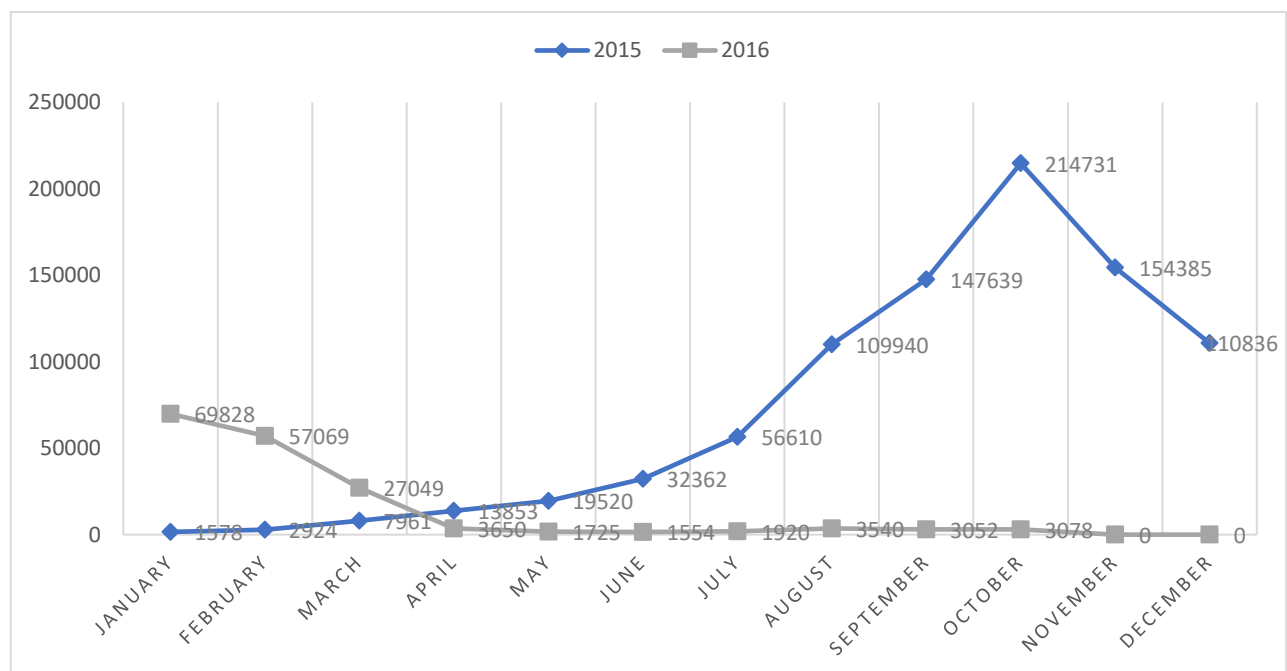
Source: Greek Ministry of Immigration, 2016

² Data from Greek Ministry of Immigration Policy in 2016

An estimated 754.090 people crossed the Mediterranean Sea from 2016 to the early of 2019 to reach the Europe via Greece. In 2015 almost 856.700 people reached the Southern European borders in particular Greece (Sekeris & Vasilakis 2016).

Figure 3 give the whole picture with the arrivals by sea by month in both 2015 and 2016. Combing these flows, most refugee flows of arrivals to the Greek islands are detected in October 2015.

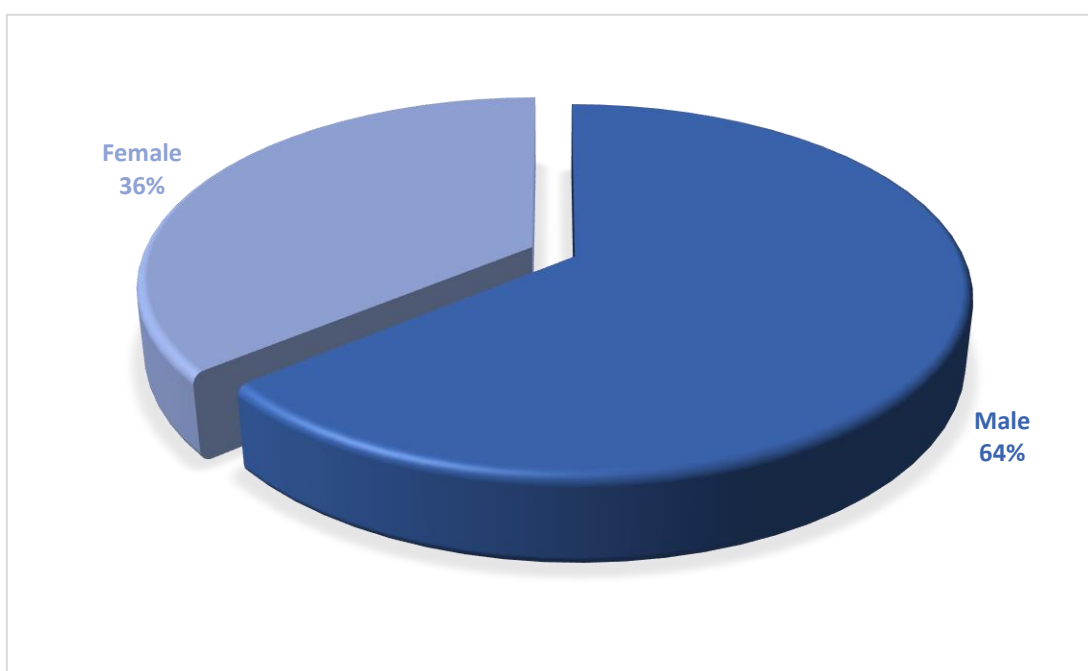
Figure 3: Arrivals by sea by month in Greek Islands (2015-2016)



Source: Greek Ministry of Immigration, 2016

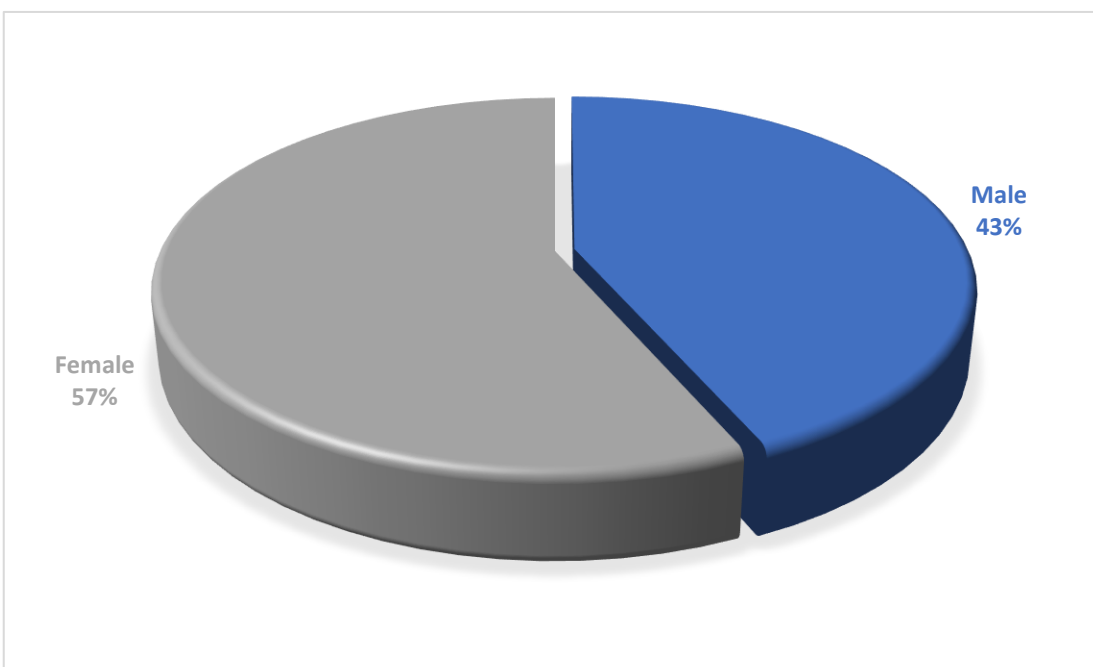
Regarding the profile of incomers, the Figure 4 below shows the proportion of women and men between 1/1/2016 and 31/10/2016 with 36% and 64%, respectively. Also, Figure 5 illustrates the percentage of underage men and women who crossed the Greek borders by sea. Note that the largest share of inputs under 18 years of age are women, namely 43%, while the remaining 57% are men.

Figure 4: Gender of entrants to Greek Islands (1/1/2016 - 31/10/2016)



Source: Greek Ministry of Immigration, 2016

Figure 5: Underage of entrants to Greek Islands (1/1/2016 - 31/10/2016)



Source: Greek Ministry of Immigration, 2016

1.2.2. Camps for asylum seekers in Greece

According to Refugee Crisis Management Coordination Body, Ministry of Civil Protection, the Greek authorities have managed the unprecedented refugee flows in the country by setting up accommodation facilities as soon as possible and removing the places where refugees and migrants were finding temporary shelter.³ People were transferred from squares and parks to organized structures.

Apart from the state accommodation structures, which are gradually being upgraded, there are also UNHCR and other NGO accommodation facilities (apartments, hotels, family accommodation, shelters - relocation sites) on the islands and inland.

1.2.3. Shelters for unaccompanied children

In 2016, about 47 shelters were operating throughout Greece, with a total of 1,191 places whilst, there were 1,199 pending requests for accommodation.

The hostels, which are small structures, generally employ one social worker per 15 children and one psychologist per 30 children, while providing legal representation, educational and recreational activities as well as 24-hour care and security staff.⁴

The hostels operate under the general supervision of the Greek State. Seven of them are directly under the National Centre for Social Solidarity and the rest operate under the responsibility of NGOs. Funding comes mainly from the European Union but also from International Organizations (UNHCR, International Organization for Migration, UNICEF).⁵

The children remained in the hostels until they were relocated or reunited with family members in other EU countries, while for some others the rehabilitation and integration into Greek society follows.

³ [gr_fact_sheet_refugee_print_19_01_2017-2.pdf \(government.gov.gr\)](#)

⁴ National Centre for Social Solidarity, [Ε.Κ.Κ.Α. Εθνικό Κέντρο Κοινωνικής Αλληλεγγύης - HOME \(ekka.org.gr\)](#)

⁵ National Centre for Social Solidarity, [Ε.Κ.Κ.Α. Εθνικό Κέντρο Κοινωνικής Αλληλεγγύης - HOME \(ekka.org.gr\)](#)

1.2.4. Statistical data of the Asylum Service - Relocation procedures

Table 2 below analyses the completion of relocation requests. The following table shows the total number of countries that Europe has requested to relocate refugees with total of 30,516 relocations were carried out in 2017, with Germany leading the way. The first column referred to the EU member state, next column is the number (thousands) of refugees allocated in the corresponding country. The fifth column referred to the rejected asylum applications from the relevant country. The sixth column show the final acceptance number from the relevant country. On the contrary, we can see that Hungary and Austria has not received a single refugee in its own country.

Table 2: Analysis of completion of relocation requests in 2017

EU member states	Relocation places allocated	Number of outgoing requests relocations	Pending reply	Rejects	Acceptance	People who have been relocated	Persons pending transfer	Persons who escaped from the procedure	Persons who have withdrawn from the procedure
Austria	0	0	0	0	0	0	0	0	0
Belgium	955	746	3	4	720	698	1	17	0
Bulgaria	910	271	0	47	187	50	1	27	45
Croatia	200	62	0	0	62	60	1	0	0
Cyprus	145	143	0	4	120	96	0	6	7
Czech Republic	30	31	0	16	15	12	0	3	0
Estonia	382	321	0	171	150	141	0	5	0
Finland	1349	1287	0	38	1237	1196	2	31	0
France	5770	5169	0	510	4468	4091	283	87	3
Germany	6740	5865	71	92	5362	4646	681	24	0
Hungary	0	0	0	0	0	0	0	0	0
Ireland	1132	1108	0	58	1039	552	470	3	5
Latvia	363	342	0	24	318	294	0	7	3
Liechtenstein	10	13	0	0	10	10	0	0	0
Lithuania	910	488	0	75	396	355	3	15	5
Luxembourg	298	285	10	1	274	271	1	1	0
Malta	138	120	0	14	106	101	0	3	0
Netherlands	1950	1854	26	64	1754	1680	45	17	7
Norway	685	718	0	9	706	693	0	13	0
Poland	65	73	0	0	0	0	0	0	18
Portugal	2030	1275	0	14	1254	1152	42	34	13
Romania	1172	924	0	12	903	683	2	72	40
Slovakia	50	40	0	21	19	16	0	0	0
Slovenia	349	179	0	0	172	172	0	0	0
Spain	1875	1153	29	2	1119	1089	10	11	3
Sweden	2378	1680	0	7	1663	1619	29	3	0
Switzerland	630	655	0	53	599	389	207	2	0
Total	30516	24802	139	1236	22653	20066	1778	381	149

Source: Statistical data of the Asylum Service - Relocation procedures, Greek Ministry of Migration and Asylum.

Germany has the highest percentage of allocated relocation places in 2017 (Table 3), namely 22%, followed by France and Sweden with 19% and 8% respectively. Table 4 demonstrates that Hungary and Austria have the lowest percentage (0%) of allocated relocation places in 2017, followed by Liechtenstein, Czech Republic, and Slovakia with 0,03%, 0,10% and 0,16%, respectively.

Table 3: Top 5 Countries with the highest percentage of allocated relocation places in 2017

EU member states	Relocation places allocated
Germany	22%
France	19%
Sweden	8%
Portugal	7%
Netherlands	6%

Source: Statistical data of the Asylum Service - Relocation procedures, Ministry of Migration and Asylum.

Table 4: Top 5 Countries with the lowest percentage of allocated relocation places in 2017

EU member states	Relocation places allocated
Austria	0,00%
Hungary	0,00%
Liechtenstein	0,03%
Czech Republic	0,10%
Slovakia	0,16%

Source: Statistical data of the Asylum Service - Relocation procedures, Ministry of Migration and Asylum.

Table 5 shows that Norway and Liechtenstein have the highest acceptance rate of relocation application in 2017 with both reach at 100% rate. In addition, Switzerland, Luxembourg, Ireland, Finland, and Netherlands have more than 90% of acceptance application of relocation, followed by Latvia, Cyprus, and Germany with 88%, 83% and 80% acceptance rate, respectively.

Table 5: Top Countries with the largest acceptance percentage of relocation application in 2017

EU member states	Acceptance %
Norway	100%
Liechtenstein	100%
Switzerland	95%
Luxembourg	92%
Ireland	92%
Finland	92%
Netherlands	90%
Latvia	88%
Cyprus	83%
Germany	80%

Source: Statistical data of the Asylum Service - Relocation procedures, Ministry of Migration and Asylum.

Table 6 shows that Czech Republic has the highest rejection rate with 53%, followed by Estonia and Slovakia with 45% and 42%, respectively.

Table 6: Top Countries with the largest rejection percentage of relocation application in 2017

EU member states	Rejects %
Czech Republic	53%
Estonia	45%
Slovakia	42%
Malta	10%
France	9%
Switzerland	8%
Lithuania	8%
Latvia	7%
Bulgaria	5%
Ireland	5%

Source: Statistical data of the Asylum Service - Relocation procedures, Ministry of Migration and Asylum.

Table 7 shows that 81% of all offered relocation places were outgoing relocation requests to EU countries in 2017, while 74% of the total offered relocation places were accepted relocation requests.

Table 7: Overall Statistics for Relocation in European Union in 2017

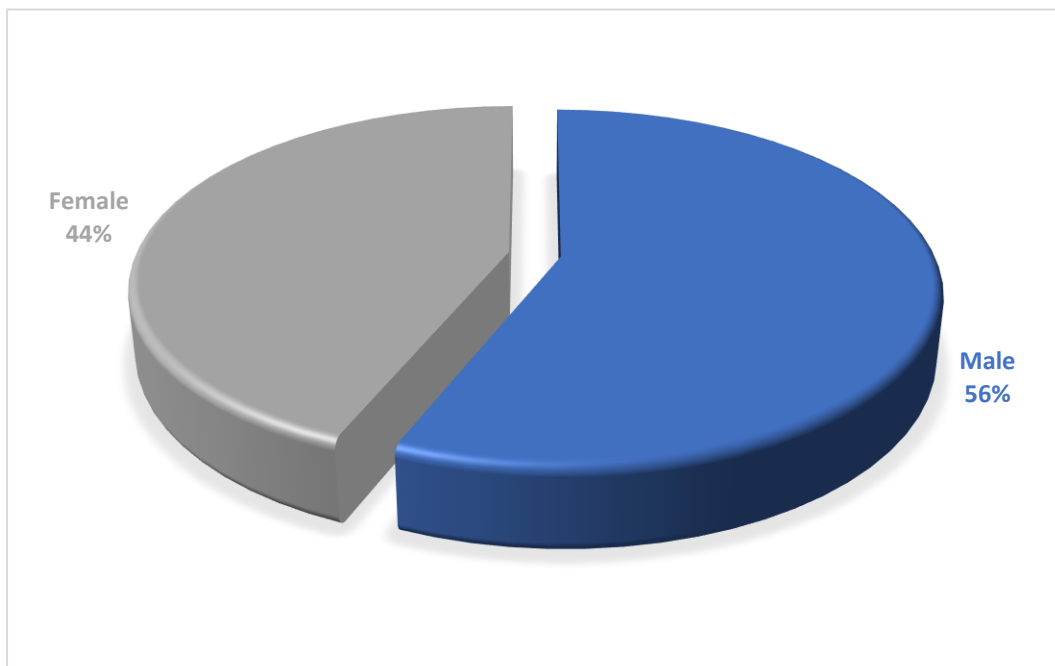
Relocations	Thousands	Percentage
Outgoing Relocation Requests	24802	81%
Accepted Applications	22653	74%
Rejected Applications	1236	4%
Relocation Places Offered	30516	-

Source: Statistical data of the Asylum Service - Relocation procedures, Ministry of Migration and Asylum.

Finally, Figure 6 illustrates the transfers carried out, until 24.9.2017 by gender. As we observe, the largest proportion is made up of men 56%, followed by female with 44%.

According to Asylum Information Database from the European Council of Refugees and Exiles, by the end of 2022, the Asylum Service received 37,362 asylum applications 24% more than 2021.

Figure 6: Overall Transfers carried out (Until 24.9.2017) by gender.



Source: Statistical data of the Asylum Service - Relocation procedures, Ministry of Migration and Asylum.

Chapter 2 - How far-right parties have been strengthened in Europe.

2.1 Far-right parties in European Parliament

Undoubtedly, in recent years populist parties have gained a notable number of parliamentary seats in Europe. According to the Guardian, populist parties in general have more than tripled their support in Europe over the last 20 years.⁶ Namely, while in 1998 the percentage of the far-right stood at 5%, in 2018 it had reached almost 15%.

In Table 8, we can distinguish the percentages of far-right parties in the period 1980-2014. The first column shows the country of the European Union, the second column displays the far-right party, corresponding to the country, the third column reflects the highest percentage of the far-right party recorded in the period 1980-2014 and finally the fourth column illustrates the percentage for the year 2014.

⁶ The Guardian's article "Revealed: one in four European vote populists" referred to populism across the political spectrum, including the number of votes for populist parties across Europe, from leftwing to rightwing.

Table 8: Far Right Parties with Parliamentary Representation in EU Member States

Country	Party	Highest Result (%)	2014 Result (%)
Austria	(Freedom Party of Aystria (FPO)	26.9	20.5
Belgium	Flemish Interest (VB)	12.0	7.8
Bulgaria	National Union Attack (NSA)	9.4	7.3
Croatia	Croatian Rights Party (HSP)	7.1	3.0
Denmark	Danish People's Party (DF)	13.8	12.3
France	National Front (FN)	15.3	13.6
Greece	Golden Dawn (XA)	7.0	6.9
Hungary	Movenment for a Better Hungary (Jobbik)	16.7	16.7
Italy	Northen League (LN)	10.1	4.1
Latvia	National Alliance (NA)	7.7	13.9
Netherlands	Party of Freedom (PVV)	15.5	10.1
Sweden	Sweden Democrats (SD)	5.7	5.7

The results are percentages of the vote from elections for the lower houses of national parliaments. The third column refers to the highest ever result in the period 1980–2013, the fourth to the most recent. (Mudde, C. (2014). The far-right and the European elections. Current History, 113(761), 98-103.)

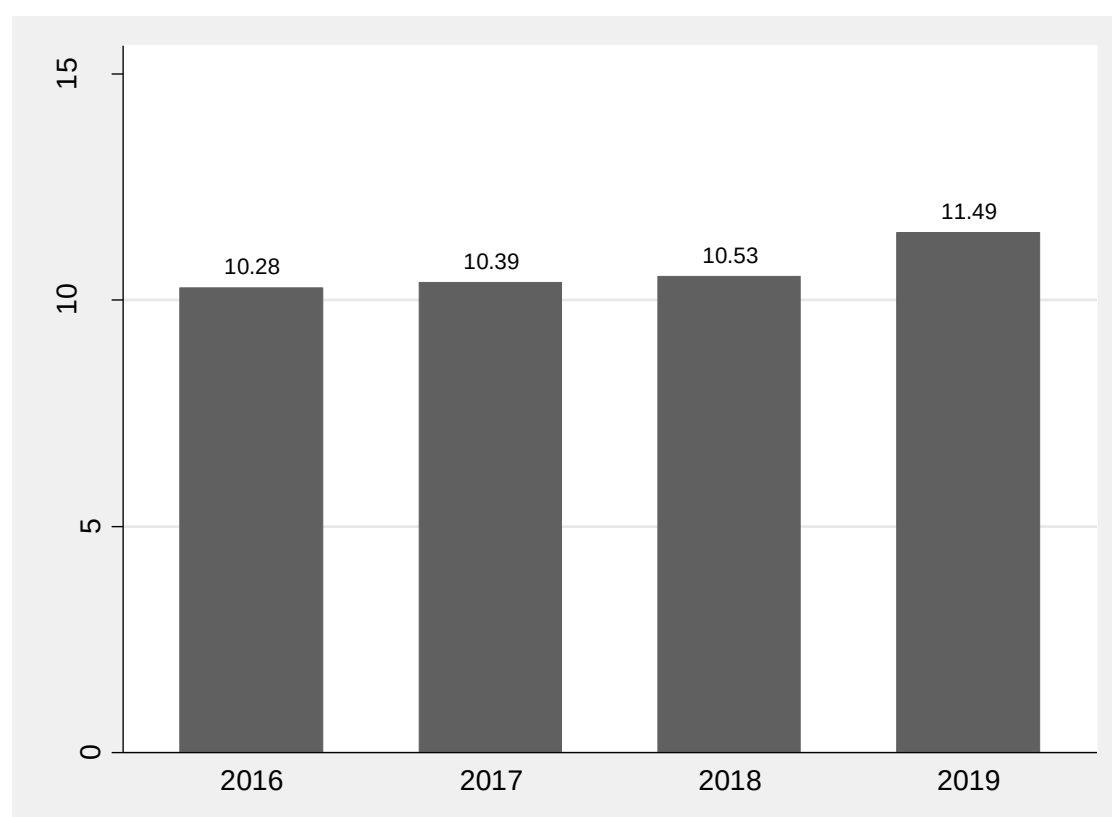
What is worth mentioning is the case of Golden Dawn (XA), which managed during the years of crisis to take advantage of the difficult economic conditions in Greece and increase its numbers. From 2003 to 2019, more than 25 convictions for criminal acts and attacks by members and cadres of Golden Dawn have been issued. In October 2020, the Trial Court of Criminal Appeals unanimously convicted the leadership of Golden Dawn, former members of parliament and many of its members for belonging to or directing a criminal organization, sentencing them to several years in prison in a decision stating that Golden Dawn was a criminal organization operating "under the guise of a political party".

According to Mude (2014), the approach that the Great Recession and general economic misery is fueling the rise of the far-right is erroneous. Much research has been based on this viewpoint, but it is nothing more than a misconception. It is Adolf

Hitler's Nazi party in Weimar Germany that has linked the success of the far-right to the economic crisis.

Regarding Figure 7, the intention of the European citizens to vote for populist far-right parties in the European Union rose consecutively going from 10.28% to 11.5%, an increase of almost 1.5% within the 3-year period between 2016 and 2019.

Figure 7: The Average Opinion Polls for Far-Right Parties in the EU by Year.



Source: Country-specific electoral archives and polling firms; authors' calculations.

a. The opinion polls are measured as a percentage and recorded in voting intentions for far-right parties in 28 European countries. Table 10 (Appendix) gives countries specification and sources.

2.2 Populism on rising Far-right parties in Europe.

National populism is not a new phenomenon; since 1980 mainstream parties have embodied national identity in their agenda and the topics of immigration, nationality and asylum keep far-right parties on the political scene. The populist far-right often used xenophobic policies to link economic misery and social collapse with immigrants. The purpose of this policy is to present an 'enemy' who is responsible for poor living conditions. Research, such as Klausen, 2009 and Pitcher, 2009) demonstrates that the far-right parties have played an essential role in placing immigration at the center of European politics.

Cas Mudde (2004, 543) suggests a prominent definition of populism as an ideology focusing on right-wings parties in Europe. The word “populism” has become a buzzword. Populism is clearly widespread in the mass media (see for example Rooduijn 2014) and scholars have made vital contributions to populism literature.

The question that arises is how the parties managed to place their own narrative on the political agenda. The economic budget far-right parties have available to acquaint their audience with their belief, is small and insignificant. However, the mass media plays an essential role in revealing political views and legitimizing the far right's validity by making individuals believe in their electoral viability (see for example Ellinas, 2010). Furthermore, mass media do not only tell us who to think about, but also how to think about them (see for example McCombs, Llamas, Lopez-Escobar, & Rey, 1997)

Populist far-right political actors set an agenda attempting to focus on social topics that intimidate our way of thinking; immigration and the slogan “law and order” play an essential role in this agenda. Far-right political actors promote the negative effects of non-natives on their host nations, blaming the non-natives for less labor opportunities and disregard for safety. The intention is to cultivate a toxic political issue in order to capitalize on the refugee crisis (see for example Hameleers, Bos, & de Vreese, 2017a).

On 2015, during Europe's migration crisis, in a newspaper interview Heinz-Christian Strache the leader of far- right Freedom party in Austria (FPÖ) said that the

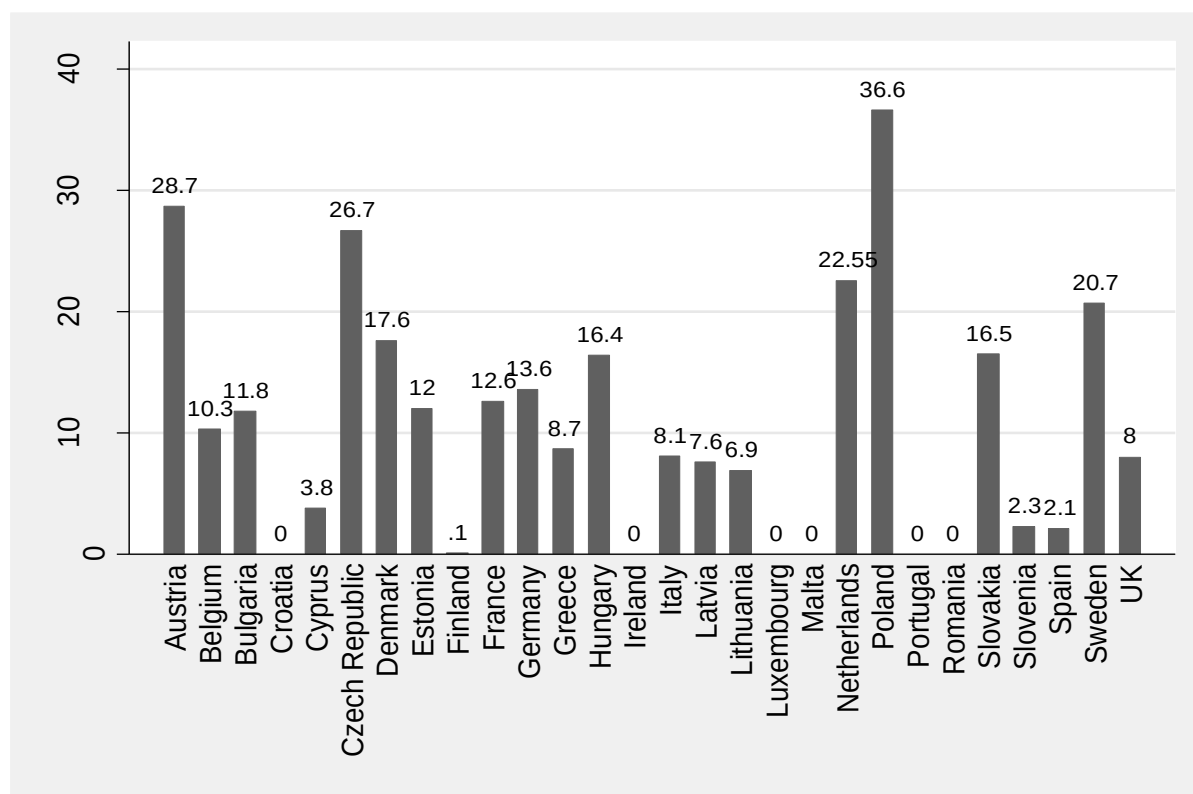
goal of the FPÖ was to correct the legacy of the previous government's immigration policy and stop immigration from Islamic countries. Between 2016 and 2019 the average percentage of citizens intending to vote for this far-right party in Austria accounted for almost 29% (Figure 8). The power of the news media to set a nation's agenda is a vast and well-documented influence.

In Germany, between 2016 and 2019, rolling opinion polls showed that the far-right party "Alternative for *Germany*" had gained the support of 13.6% (Figure 8) of German citizens, the first time a far-right party had gained parliamentary seats since the Second World War. The party adopted a manifesto stating that "Islam does not belong in Germany" and called for a ban on the construction of mosques.

Figure 8 illustrates that Poland has the largest percentage of citizens with the intention to vote for a far-right party. In 2017, Jarosław Kaczyński, head of the ruling party Law and Justice (PiS) said in a speech broadcast on television that Poland did not exploit the refugees and have not invited them to Europe. Finally, he concluded that they had a full moral right to said 'no'. Regarding Figure 9, we detect that media coverage of the refugee crisis has a positive correlation with the percentage of citizens intending to vote for a far fight party.

The anti-immigration Sweden Democrats (SD) also made a significant gain in the 2018 general election, winning about 18% of the vote, while the rolling opinion polls between 2016 and 2019 showed that they had almost 21% of its citizens trust (Figure 8). In 2015, Sweden Democrat leader, Jimmie Åkesson, told the Swedish newspaper "Dagens Nyheter" that he wanted a total ban on asylum immigration to Sweden and that he wanted to leave the European Union. Figure 10 shows the corresponding route between media coverage on refugee flow and the intention of citizens to vote for a far-right party.

Figure 8: The average percentage of citizens' intention to vote for a far-right party in Europe by country.



Source: Country-specific electoral archives and polling firms; authors' calculations.

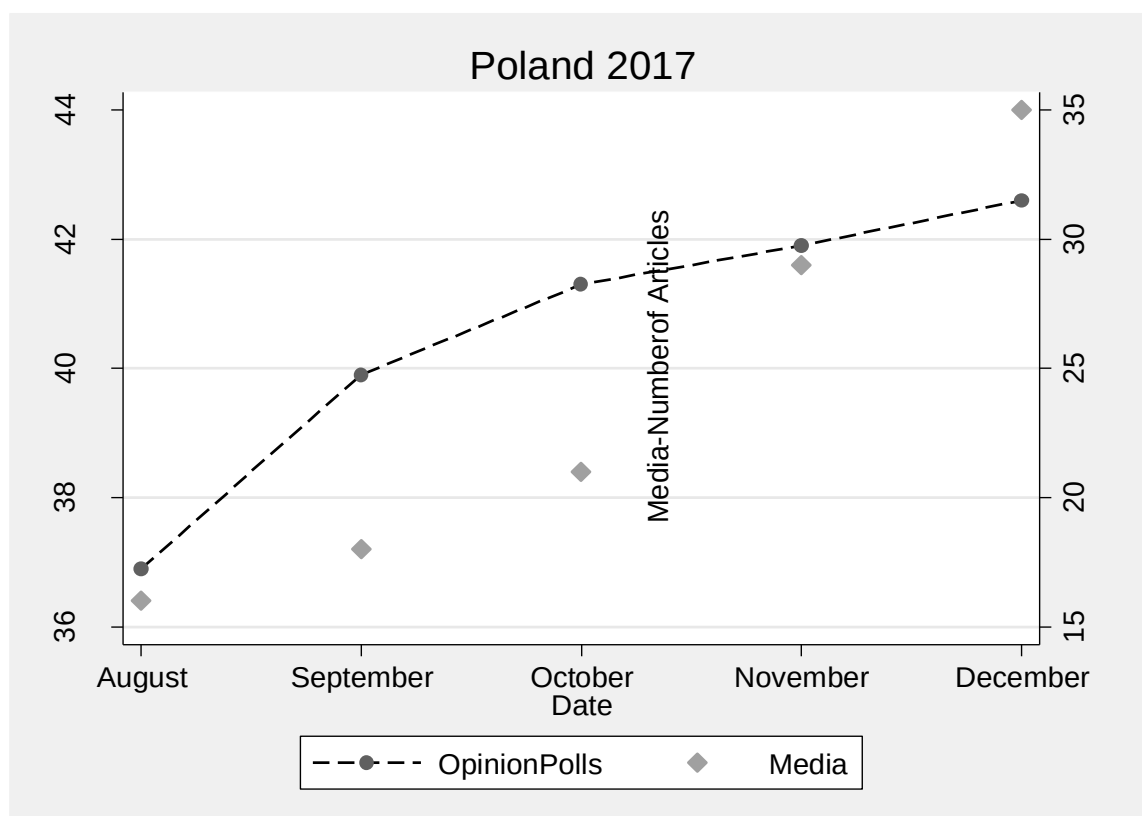
a. The opinion polls are measured as a percentage and recorded in voting intentions for far-right parties in 28 European countries. Table 10 (Appendix) gives countries specification and sources.

Unquestionably, the main core of these speeches by far-right leaders is that their nations and the European Union in general feel threatened by Muslims, refugees, and immigrants. The rise of populism has at least two potential explanations. On the one hand, the cultural reaction against liberal values leads to a shift towards national identity (see for example Algan, Guriev, Papaioannou and Passari, 2017). On the other hand, exploiting the reduction in job opportunities and the global crisis, populist far-right leaders blame immigrants and refugees for economic insecurity.

Many studies indicate that the hot topic of refugee flows is a crucial factor in the strengthening of far-right parties (see for example Steinmayr 2018, Vertier and Viskanic 2018 and Dinas et al. forthcoming). A targeted survey conducted on a Greek

island of 2,070 residents found that refugee arrivals promote the native's hostility toward refugees (Hangartner, 2019).

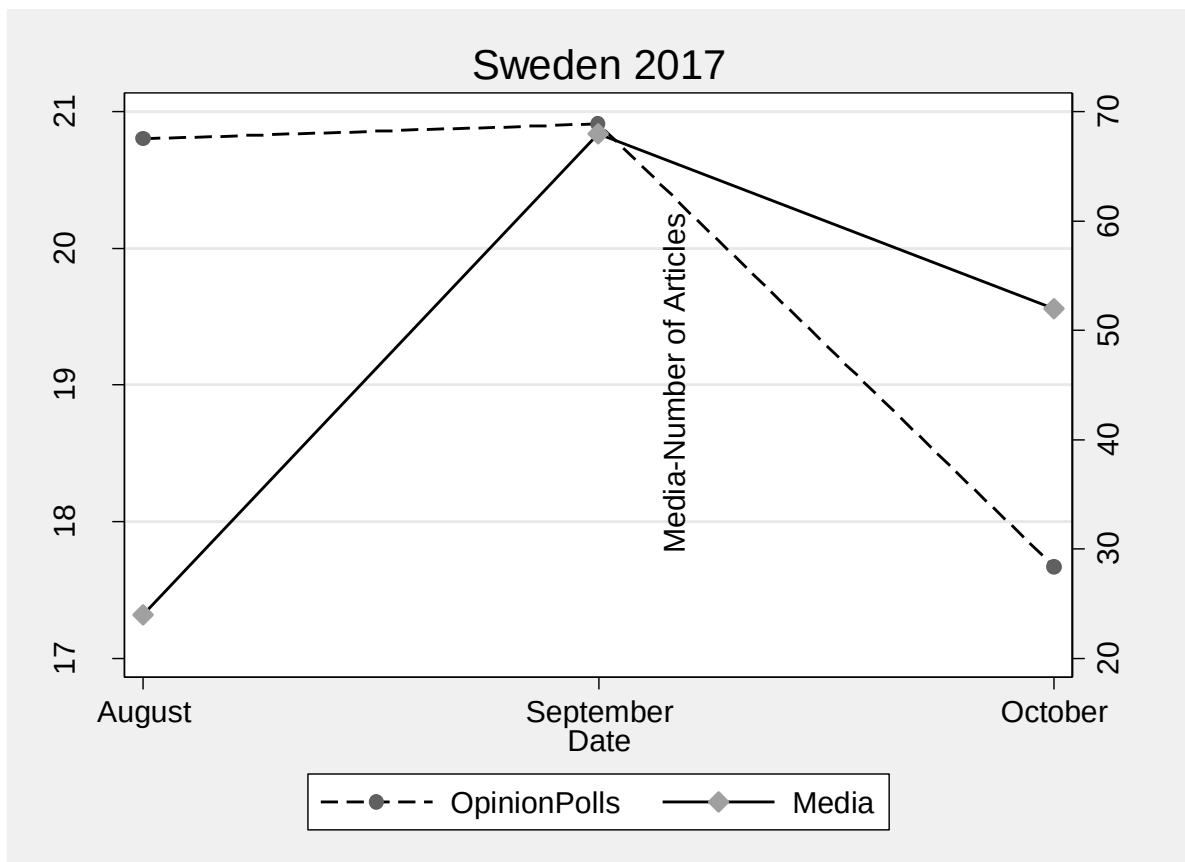
Figure 9: The positive correlation between mass media of refugee flow in Greece and opinion poll for far-right party "Law and Justice"



Source: Polish electoral archives, polling firms, and number of refugee related articles in newspapers. Based on the authors' calculations.

- The opinion polls are measured as a percentage and recorded in voting intentions for far-right parties in 28 European countries. Table 10 (Appendix) gives country specification and sources.
- Media: The degree of refugee flow coverage is measured by parsing Fakt, the most popular daily newspaper in Poland in 2017 according to Eurotopics, for refugee related articles. The data corresponds to a daily search from 1/1/2016 to 28/4/2019 in which the number of articles using the word refugee were counted. Table 10 (Appendix) gives country specification and sources.

Figure 10: The correlation between mass media of refugee flow in Greece and opinion poll for far-right “SD” party



Sources: Swedish electoral archives, polling firms, and number of refugee related articles in newspapers. Based on the authors' calculations.

a. The opinion polls are measured as a percentage and recorded in voting intentions for far-right parties in 28 European countries. Table 10 (Appendix) gives country specification and sources.

b. Media: The degree of refugee flow coverage is measured by parsing Svenska Dagbladet, the most popular daily newspaper in Sweden in 2017 according to Eurotopics, for refugee related articles. The data corresponds to a daily search from 1/1/2016 to 28/4/2019 in which the number of articles using the word refugee were counted. Table 10 (Appendix); gives country-specification and source.

Chapter 3 – The Rise of Far-Right in Europe: Migration and the Role of Mass Media

3.1 Mass Media and Political Attitude

The relationship between mass media and political attitudes has been a major concern of the scientific community. There is research that suggests that public opinion formation on candidates is significantly influenced by the presentation of candidates by the mass media. Iyengar, Peters and Kinder 1982, demonstrate that television news affects the way viewers weigh issues and evaluate candidates. The most characteristic point that McCombs and Shaw in 1972 unveiled is that people consider coverage by the media as truthful and eventually it can modify consciousness.

Newspapers and magazines could strategically use the information. For example, they could share a nice photo of the candidate followed by his political positions. At the same time, they can use the opposite strategy on his opponent. (Kahn and Kenney 2002).

Several theoretical and empirical papers have attempted to detect the relationship between the mass media and rising far-right parties. In 2005, Norris examined the importance of media and subsequently confirmed the vital role of the media for the success of far-right parties. He analyzed the significance of leadership popularity for the voting support for the radical right, whilst focused to the fact that anti-immigration attitudes have, in turn, been closely linked to support for the far-right.

In 2004, Walgrave & de Swert carried out a study on whether the Flemish media had contributed to the success of the Vlaams Blok by emphasizing the themes of the party. The outcome of this investigation comes up with something very interesting. The analysis shows that especially immigrants and crime topics receive extensive and growing media attention. By using a time series analysis Walgrave & de Swert's study shows that this growing media attention rising parallels the electoral growth of the Vlaams Blok. Finally, they conclude that the media could be considered “co-responsible” for the Vlaams Blok's gain.

The relationship between the rise of far-right parties and the migration issue in the media has an important place in the scientific literature. In 2012 a research and

empirical analysis using a content analysis, established that the more news media coverage of immigration-related topics, the more the intention to vote for anti-immigrant parties increased. In empirical analysis, with time series analysis for six parties in three countries; Belgium, the Netherlands and Germany, revealed strong support for the effects of the party and particularly its leader's visibility in the news on anti-immigrant party success (Vliegenthart, Boomgaarden & van Spanje, 2012).

Of particular interest was the rise of a far-right party in the Netherlands. In 2009, Koopmans & Muis attempted to explain the rise of Pim Fortuyn's right-wing populist party in the Netherlands in 2002. They used longitudinal data from newspapers and opinion polls and found that the Fortuyn's success emanated from competition for voter support because of his ability to express his claims in the media.

3.2 Migration and Far-Right Parties

Nowadays, the anti-immigrant parties have a notable percentage in the European Parliament and modern research attempts to examine electoral behavior (see for example Arzheimer, 2009; Arzheimer & Carter 2006; Ivarsflaten, 2008; Van der Brug & Fennema, 2003). Immigration agenda has been linked to modern far-right, probably "more than any other issue". According to Hainsworth, migration is one of the "key themes" for a better understanding of the "nature and character" of far-right parties.

In 2010, Smith and Matthew used individual-level data to show that far-right voters have a more negative perception of immigrants, refugees, and multiculturalism than other voters. However, their model does not provide statistically significant results for immigration making it unable to prove that immigration can affect the rise of far-right parties. In 2007 Boomgaarden and Vliegenthart, using monthly time-series data showed that the frequency of newspaper coverage of immigration is related to public opinion on immigration in Germany. In addition, in 2011 Linda Bos, Wouter van der Brug, and Claes H. de Vreese in 2011 revealed the significant effects the content of media coverage has on the public image of political leaders.

Chapter 4 – Research methodology and tools

4.1 Research Filed

The literature review on the relationship between the rise of far- right parties and the phenomenon of refugee and migrant flows, identified several questions related to our thesis requiring further empirical research to tackle them. There is little systematic evidence about how mass media refugee-coverage may affect the individual voter's support for the populist far-right parties. In this study, we intend to investigate the volatility of daily refugee arrivals on the Eastern Aegean islands as a random shock that hits the European Union and how media coverage of the refugee crisis can affect a citizen's decision to vote for a far-right party.

The first stage of this research is to consider a simple linear relationship model. The intention is to show whether the media influenced the attitudes of a European citizen to vote for a far-right party. Many studies, as mentioned in Chapter 3, (§3.1), have tried to explain people's voting behavior based on the influence of mass media. Due to the new refugee crisis recorded since 2015 in Europe, the aim of this research is to link the voting behavior with mass media daily coverage of refugee flows, particularly in Greek islands.

The chosen empirical model is used in order to justify the goals of the second part of this study.⁷ The analysis uses instrumental variables (IV) estimation, treating the refugees flows as a proxy for the European media coverage of refugee flows to the Greek islands, in order to control for the exogenous variations of increasing voting for far-right parties, or, more precisely, the effects of exogenous variation on the level of voting intentions for far-right parties in 28 European countries. The results are expected to show a positive correlation between voting intentions for far-right parties and media coverage of refugee flows.

Specifically, the intention is to assess the random shock in daily arrivals of refugees on the Greek islands of Lesbos, Samos, Chios, Leros and Kos between 1st January 2016 and 28th April 2019 and link it to mass media daily coverage of refugee flow to European countries. Afterwards, we associate this with voting intentions for

⁷ Refugee flows and the role of mass media in rising the far-right parties.

far-right parties recorded in rolling polls. The results of estimations demonstrate that the cross-sectional variation in media coverage of refugee flows in Greece can explain cross sectional variation in far-right voting intentions in the European Union. Our main contribution consists of the evaluation of daily arrivals of refugees on the Greek islands as an exogenous shock that hits European Union and its link it to mass media daily coverage of refugees in 28 European countries, in order to examine the tendency to support far-right parties on the level of the individual voter.

4.2 Estimation Strategy

Our analysis is based on the following regression equation:

$$Y_{i,t} = \alpha + \beta X_{i,t} + \gamma \text{DIST}_{i,t} + V_{i,t} \quad (4.1)$$

The dependent variable is the logarithmic rolling opinion polls in country i on day t . Country-fixed effects (i) and time effects (t) control for time-invariant country characteristics and time trends, respectively. The explanatory variable is $\beta X_{i,t}$, the logarithmic media coverage on refugees. The independent variable $\text{DIST}_{i,t}$ measures the distance of the capital of each of the European Union countries from the East Aegean island, Lesbos, in Greece.⁸ Regression (4.1) reflects the effect of media power on a citizen's intention to vote for far-right parties from an alternative perspective, by focusing on the daily refugee volatility of arrivals in East Aegean islands as a random shock that hits the European Union. The method used is IV estimation. 'RefGr' is used to denote the indicator of refugee arrivals.

The mathematical forms used are therefore simple regression models:

$$\text{Log}(X_{i,t}) = \beta_0 + \beta_1 \text{LogRefGr} + u, \quad (4.2)$$

Where, the IV estimator β_1 indicates the return of RefGr on media coverage (X). The variation between countries clearly does not allow the use of the modest regression of pooled OLS. Fixed-effects estimation takes into account the heterogeneity of individuals and highlights the unobserved effect that influences the dependent

⁸The appearance of the variable "DIST" has not changed the results in the simple OLS regression. When we control the estimation for country effect, the variable "DIST" disappears.

variables. In regression (4.1), fixed effects allow unobserved country factors to be correlated with the explanatory variable. In addition, time effect allows time-invariant characteristics. The proper methodology for the estimation is both Fixed-Effects estimation, which examines the inter-country variation, and Time-Effect estimation, which observes the intra-country variation.

4.3 Data Collection

For the refugee arrivals indicator variable, we have constructed a unique dataset that recorded daily refugee arrivals on the Greek Islands of Lesbos, Samos, Chios, Leros and Kos between 1st January 2016 and 28th April 2019. Since the number of refugee arrivals was not recorded on the Greek islands before 2016, we consider 2016 the first year of our analysis. Data on the numbers of refugees arriving on the Greek Islands is drawn from the Greek Ministry for Immigration Policy. The number of refugees accounts only for those who are stationed in local hot spots. Data on Refugee flows to the European Union refer to the overall daily refugee arrivals in Europe between 1st January 2016 and 28th April 2019, and was drawn from Migration iom.int, an IOM Flow Monitoring online platform which accesses Displacement Tracking Matrix (DTM) and migration flow information products, including a visualization of population flows.

Our key explanatory variable is ‘media coverage’ which measures the degree of refugee flow’s coverage by parsing all major daily newspapers in 28 countries.⁹ This was done by counting the number of articles in which the word refugee appeared at least once. The data corresponds to a daily search, carried out on specific daily newspapers (see Appendix, Table 10) between 1/1/2016 to 28/4/2019. Particular attention was paid to those with the highest circulation in 2017 according to Eurotopics.

As a final point, the rolling opinion polls estimate voting intentions for far-right parties in 28 countries.¹⁰ As polls do not take place on a daily basis the gap is filled

⁹ Table 10 (Appendix) gives countries specification and sources.

¹⁰ Table 10 (Appendix) gives countries specification and sources.

using data from the most recent poll until the next one. For those countries, whose opinion polls take place after the first date of analysis, the percentage used, up until the following opinion poll, is based on the results of the previous election.

Chapter 5 – Empirical Findings

This section presents indications that daily refugee flows to Greek inlands have an indirect effect on the intention of European citizens to vote for far-right parties. Specifically, there is evidence that the accumulated refugee flows to the Greek islands have a vigorous impact on intentions to vote for far-right parties.

5.1 First-Stage Results

To estimate the first-stage regressions, we go beyond a simple linear regression in order to investigate whether there is a direct effect between media coverage of the refugee crisis on rolling opinion polls for far-right parties in Europe.

In Table 11 we examine the conditional correlation, the OLS estimates in Model (1) which suggest that the endogeneity is a major problem and causes bias. When we add country effect, the coefficients of media decrease (-.013591), turn to a negative correlation and become statistically insignificant (Model 2). Concerning the independent variables of refugee flow in Greece and the European Union, the coefficients continue to be negative and statistically insignificant, (-.008787) and (-.007131) respectively. In Model 3, which includes country effect and time trends, the outcomes are almost similar and statistically insignificant, implying that there is no direct effect between media coverage of the refugee crisis on rolling opinion polls for far-right parties in the European Union.

Table 11: Regression - Conditional Correlations - Dependent Variable: Opinion Polls

Sample					
Countries	All		All		All
	1/1/2016	-	1/1/2016	-	1/1/2016
Period	28/4/2019		28/4/2019		28/4/2019
Model	(1)		(2)		(3)
Media	.26049		-.013591		-.023388
P-value	(0.000)		(0.610)		(0.397)
RefGr	-.01109		-.008787		-.000698
P-value	(0.076)		(0.174)		(0.888)
RefEu	-.00644		-.007131		-.000211
P-value	(0.220)		(0.300)		(0.932)
Fixed Effect	No		Yes		Yes
Time Effect	No		No		Yes
Adjust R-squared	0.0152		-		-
Within R-squared	-		0.0026		0.0286
Obs.	23.015		23.015		23.015

Table 11 reports autoregressive distributed lag specifications. The dependent variable is the logarithmic opinion polls for far-right parties. Media is an explanatory variable that represents the media coverage of refugees. The independent variables RefGr denote the refugee flows in Greece and RefEu is the refugee flows in the European Union. Model (1) reports pooled cross-sectional OLS estimates in the maximum number of countries-years. Models (2) includes country constants. Models (3) includes region-specific time trends. P-values based on general heteroscedasticity-adjusted standard errors and clustered by country. Table 1 lists the European countries and gives a short description of the media circulations and far-right parties.

- a. Media: Measure the degree of refugee flow coverage by parsing all major daily newspapers in 28 European countries. The data corresponds to a daily search from 1/1/2016 to 28/4/2019 in the daily newspapers with the highest circulation in 2017 in 28 countries according to Eurotopics. By using the word "refugees," we count the numbers of articles appearing.*
- b. RefGR: The daily refugee arrivals by boat on the Greek Islands of Lesbos, Samos, Chios, Leros and Kos between 1 January 2016 and 28 April 2019. Since the number of refugees was not recorded on the Greek islands before 2016, we consider 2016 the first year of our analysis. Data on the numbers of refugees is drawn from the Greek Ministry for Immigration Policy in the Eastern Aegean islands. The number of refugees is based on those stationed in local hot spots.*
- c. RefEU: The overall daily refugees in Europe between 1 January 2016 and 28 April 2019. Data on the numbers of refugees is drawn from Migration.iom.int, an IOM Flow Monitoring online platform which accesses Displacement Tracking Matrix (DTM) and migration flow information products, including a visualization of population flows.*
- d. Opinion polls: Record the rolling opinion polls concerning voting intentions for far-right parties in 28 European countries. Table 10 (Appendix); gives country specification and sources.*

5.2 Effect of Exogenous Flow Shocks in Greece on Media Coverage

Table 12 shows the clear effect the daily arrivals of refugees on the Greek islands has on European mass media coverage. Model (1) in Table 12 shows an OLS regression with coefficient (0.00995) and is statistically significant in the 10% level, which implies that for every 1% increase in refugee flows to the Greek islands, the number of articles in the European media referring to the refugee crisis increases by about 0,01%. When the country effect is imported to the model (Model 2, Table 12) the coefficient remains 0.00995 and statistically significant in the 10% level. The Model (3) in Table 12 includes time and country effects and the coefficient of refugee flows to the Greek islands is larger than the OLS estimate (0.01346) and statistically significant in the 10% level, indicating that a 1% increase in refugee flows to the Greek island, is associated with a 0.013% increase in the number of articles referring to the refugee crisis.

Table 12: Regression - Exogenous Flow Shocks in Greece Effect on Media Coverage – Dependent Variable: Media Coverage

Sample					
Countries	All		All		All
Sample	1/1/2016	-	1/1/2016	-	1/1/2016
Period	28/4/2019		28/4/2019		28/4/2019
Model	(1)		(2)		(3)
RefGr	.00995		.00995		.01346
P-value	(0.000)		(0.020)		(0.002)
Fixed Effect	No		Yes		Yes
Time Effect	No		No		Yes
Adjust R-squared	0.0005		-		-
Within R-squared	-		0.0013		0.0044
Obs.	28.784		28.784		28.784

Table 12 reports autoregressive distributed lag specifications. The dependent variable is the logarithmic opinion polls for far-right parties. This stage uses the exogenous refugee flow shocks in Greece as an instrument for media coverage that affects polls. Model (1) reports pooled cross-sectional OLS estimates in the maximum number of countries-years. Model (2) includes country constants. Models (3) includes region-specific time trends. P-values based on general heteroscedasticity-adjusted standard errors and are clustered by country. Table 1 lists the European countries and gives a short description of the media circulations and far-right parties.

a. Media: Measure the degree of refugee flow coverage by parsing all major daily newspapers in 28 European countries. The data correspond to a daily search from 1/1/2016 to 28/4/2019 in the daily newspapers with the highest circulation in 2017 in 28 countries according to Eurotopics. By using the word "refugees," we count the numbers of articles appearing.

b. RefGR: The daily refugee arrivals by boat on the Greek Islands of Lesbos, Samos, Chios, Leros and Kos between 1 January 2016 and 28 April 2019. Since the number of refugees was not recorded on the Greek islands before 2016, we consider 2016 the first year of our analysis. Data on the numbers of refugees is drawn from the Greek Ministry for Immigration Policy in the Eastern Aegean islands. The number of refugees is based on/reflects those stationed in local hot spots.

5.3 The Instrumental Media Effect on Opinion Polls.

Table 13 shows the results by treating the refugee flow in Greece as a proxy for the media coverage and we estimate the effect of instrumental media on the intention of European citizens to vote for far-right parties. Column 1 in Table 13 shows an OLS regression where the coefficient of instrumental media is 1.4697 and statistically significant in the 10% level, suggesting that a 1% increase in daily refugee flows to the Greek islands tends to increase the intention of citizens to vote for far-right parties by about 1.47%. In column 2, where the country-effect entered to the model, the coefficient does not have a major variation (1.4701) and is statistically significant in the 10% level, showing that for every 1% increase in daily refugee flows to the Greek islands, the intention of citizens to vote to vote for a far-right party increase by about 1.47%. When we control both for country and time effect the coefficient on daily refugee flows converts to negative (-.14774) and is statistically insignificant in the 10% level.¹¹

¹¹ Time effects are daily which is really an overstretch of conditionality.

Table 13: Regression - The Instrumental Media Effect on Polls - Dependent Variable: Opinion Polls

Sample					
Countries	All		All		All
	1/1/2016	-	1/1/2016	-	1/1/2016
Period	28/4/2019		28/4/2019		28/4/2019
Model	(1)		(2)		(3)
DailyMedia	1.4697		1.4701		-.14774
P-value	(0.000)		(0.000)		(0.708)
Fixed Effect	No		Yes		Yes
Time Effect	No		No		Yes
Adjust R-squared	0.0011		0.0389		0.0400
Obs.	28.783		28.783		28.783

Table 13 reports autoregressive distributed lag specifications. The dependent variable is the logarithmic opinion polls for far-right parties. The independent variable which is the instrumental media daily coverage of the exogenous refugee flow shocks in Greece uses the clean effect of media from refugee flows in Greece. Model (1) reports pooled cross-sectional OLS estimates in the maximum number of countries-years. Models (2) includes country constants. Models (3) includes region-specific time trends. P-values based on general heteroscedasticity-adjusted standard errors and is clustered by country. Table 1 lists the European countries and gives a short description of the media circulations and far-right parties.

a. Media: Measure the degree of refugee flow coverage by parsing all major daily newspapers in 28 European countries. The data correspond to a daily search from 1/1/2016 to 28/4/2019 in the daily newspapers with the highest circulation in 2017 in 28 countries according to Eurotopics. By using the word "refugees," we count the numbers of articles appearing.

b. RefGR: The daily refugee arrivals by boat on the Greek Islands of Lesbos, Samos, Chios, Leros and Kos between 1 January 2016 and 28 April 2019. Since the number of

refugees was not recorded on the Greek islands prior to 2016, we consider 2016 the first year of our analysis. Data on the numbers of refugees is drawn from the Greek Ministry for Immigration Policy in the Eastern Aegean islands. The number of refugees reflects those stationed in local hot spots.

c. DailyMedia: Instrumental media with daily exogenous refugee flow shocks to the Greek islands.

d. Opinion polls: Record the rolling opinion polls concerning voting intentions for far-right parties in 28 European countries. Table 10 (Appendix) gives countries specification and sources.

Finally, Table 14 shows the upshots by using the accumulated refugee flows to the Greek islands as a proxy for the European media coverage and we estimate the effect of instrumental media on the intention of European citizens to vote for a far-right party. The specification in Model 1 displays an OLS regression where the coefficient on instrumental media is 0.04077 and statistically significant in the 10% level, suggesting that a 1% increase in accumulated refugee flow in the Greek Islands is associated with a 0.041% increase in the intention of citizens to vote for a far-right party. Model 2 controls for fixed-effects increasing the coefficient to 0.042961 with statistical significance in the 10% level, implying that a 1% increase in the accumulated refugee flow in Greece is associated with a 0.043% increase of far-right percentage on rolling opinion polls. In Model (3) the estimation controls for both time invariant and country specific characteristics causing the coefficient upswing to reach 0.09878 with statistical significance in the 10% level. This indicates that for every 1% increase in accumulated refugee flows to the Greek island, citizens intention to vote for a far-right party increase by about 0.1%.

Table 14: Regression - The Instrumented Media Effect on Polls with Accumulated Flows - Dependent Variable: Opinion Polls

Sample					
Countries	All		All		All
	1/1/2016	-	1/1/2016	-	1/1/2016
Period	28/4/2019		28/4/2019		28/4/2019
Model	(1)		(2)		(3)
AMedia	.04077		.042961		.09878
P-value	(0.022)		(0.016)		(0.000)
Fixed Effect	No		Yes		Yes
Time Effect	No		No		Yes
Adjust R-squared	0.0070		0.0243		0.0618
Obs.	1.822		1.822		1.822

Table 14 reports autoregressive distributed lag specifications. The dependent variable is the logarithmic opinion polls for far-right parties. This stage uses the accumulated refugee flow in Greece as an instrument for media coverage that affects opinion polls. Model (1) reports pooled cross-sectional OLS estimates in the maximum number of countries-years. Models (2) includes country constants. Models (3) includes region-specific time trends. P-values based on general heteroscedasticity-adjusted standard errors and is clustered by country. Table 1 lists the European countries and gives a short description of the media circulations and far-right parties. The Data Appendix gives variable definitions and sources.

a. *Media*: Measures the degree of refugee flow coverage by parsing all major daily newspapers in 28 European countries. The data correspond to a daily search from 1/1/2016 to 28/4/2019 in the daily newspapers with the highest circulation in 2017 in 28 countries according to Eurotopics. By using the word "refugees," we count the numbers of articles appearing.

b. *RefGR*: The daily refugee arrivals by boat on the Greek Islands of Lesbos, Samos, Chios, Leros and Kos between 1 January 2016 and 28 April 2019. Since the number of

refugees was not recorded on the Greek islands before 2016, we consider 2016 the first year of our analysis. Data on the numbers of refugees is drawn from the Greek Ministry for Immigration Policy in the Eastern Aegean islands. The number of refugees is based on/reflects those stationed in local hot spots.

c. AMedia: Instrumental media with accumulated exogenous refugee flow shocks to the Greek islands.

d. Opinion polls: Record the rolling opinion polls concerning voting intentions for far-right parties in 28 European countries. Table 10 (Appendix); gives country specification and sources.

Chapter 6 – Research Findings

After the large mass movement of people to Europe, immigration and refugees constitutes its Achilles' heel. This study demonstrates that the mass media have played an essential role in the response to the migratory wave by the citizens of the European Union.

The relationship between rising far-right and mass media has become one of the hottest and most debated topics both in social and economic science. Political and economic science literature include numerous studies on the impact of mass media coverage on political attitudes. Although several studies have attempted to indicate the link between voting for far-right parties and anti-immigrant policies, there has been little systematic theoretical and empirical evidence on the link between far-right populism and media coverage of refugee crisis. Moreover, there is a lack of research on the relation between individual voters and mass media subject to a specific phenomenon such as the refugee crisis.

6.1 Did Mass Media Coverage on refugee flows affect the rising far right in Europe?

This paper evaluates the daily arrivals of refugees on the Greek islands as an exogenous shock that hits the European Union and link it to mass media daily coverage of the refugee crisis in 28 European countries.¹² In contrast to previous literature that examined the role of mass media on political attitudes and the visibility of a political actor, we explore the effects of the refugee crisis and specifically the refugee flows to the Greek islands on media coverage and associate this with the voting intentions for far-right party recorded in rolling polls.

Since the refugee flows in Greece is between 70% and 100% of the total flows in Europe, we consider them as the most crucial movements.

¹² Table 10 (Appendix) gives countries specification and sources.

The estimation in Model (3), Table 12, controlling for country and time effect demonstrates that the result is statistically significant, and we detect that random daily refugee arrivals to the Greek islands affect European media coverage. Specifically, a 1% increase in refugee flows to the Greek islands is associated with a 0.013% increase in the number of articles referring to the refugee crisis. Subsequently, daily refugee arrivals on the Greek Islands are shown to have a significant impact on European media coverage.

The most important point of this analysis is that instrumental media coverage on daily refugee flows to the Greek islands has an effect on rolling opinion polls for far-right parties in the European Union when the country-effect was entered into the model (Model 2, Table 13), whilst the instrumental media on accumulated refugee flows to the Greek islands has a robust effect on European citizens' intention to vote for a far-right party (Model 3, Table 14). Namely, when we controlled for country effect as well as time effect, we found that for every 10% increase in accumulative refugee flows to the Greek islands, citizens' intention to vote for a far-right party in Europe increases by about 1.8%.

The mass media coverage of the refugee crisis has undoubtedly had a strong effect on the shift of individual voters to vote for far-right and the economic crisis offered far-right political leaders the opportunity to use the refugee crisis as the main cause for social and economic insecurity.

An example of how the attitude of political actors on the refugee crisis affect the rising far-right is Hungary. Hungary is one of the most Eurosceptic countries in the European Union and at the same time the country with the lowest number of refugees and immigrants. Orban's approach focuses on closed borders, xenophobia and refusal of aid to refugees. In 2017, the European Union asked Hungary to take in 1.294 refugees and the actual number of refugees taken in was 0.¹³

¹³ Source: Euronews' article: "Fact check: How many refugees has each EU country taken in?"

6.2 Restrictions

In the research there were some limitations. Our intention was to eliminate them, by using fixed and time effect in the model, knowing that this hot topic is multivariate. Specifically, the limitations that were addressed is that the statistical significance level is high 10% and the coefficients are low. This is certainly due to other independent variables that affect the vote for far-right parties that have not been considered, such as macro indicators (unemployment rate, GDP per capita, religious diversity), cultural characteristics, economic characteristics (Education, working status) and demographic characteristics (Age, sex etc.)

Chapter 7 – Have existing policies helped EU countries to manage refugees' flows?

7.1 Historical review of immigration policies in Europe

The starting point of the description of immigration policy in Europe can be traced back to the bilateral labour migration agreements between several European countries in the 1950s and 1960s. As mentioned earlier, the oil crisis was a reference point (1973), as until then the countries were characterized by economic stability and the development of hospitality programs, where flows dominated from the East to the West. In the 1960s, bilateral labor migration agreements were signed with Turkey, Morocco, Portugal, Tunisia, and Yugoslavia, followed by other destination countries such as Belgium, the Netherlands, France, and Switzerland. According to Bonifazi in 2008, international migration has been an important tool for the economic development of both receiving and sending countries.

The next period where immigration policy is separated is during the beginning of the oil crisis until the fall of the Iron Curtain in the late 1980s. During this period, Northwest European governments reduced immigration flows and exclusively accepted migrants for family reunification. As a result, by the end of the 1980s, migration flows were moving towards southern Europe. The economic benefits of international migration began to wane with the oil crisis of 1973-1974. The resulting crisis increased unemployment rates and the labour market supply was significantly reduced.

In 1972, Sweden was one of the first countries to stop labour flows. Germany and France followed in the following years. The policy of banning migratory flows changed the landscape radically, as foreigners who had already been brought in from third countries stayed for long periods of time while trying to bring their families by any means possible. Because of the guaranteed right of migrant workers to be reunited with their families (article 19 of the European Social Charter of 1961), the governments' hands were tied, and they could not impose a ban on this.

The third period is from the fall of the Iron Curtain until 2012. During this period, the important policy element was the migratory flows from third countries, where Europe increased its control over these flows but also encouraged intra-European mobility. The end of the Cold War, as well as the wars in the former Yugoslavia led to

new flows of asylum seekers to Western Europe. Table 9 below shows the top countries with the most asylum applications to Europe at that time. The most asylum applications appear in Federal Republic of Yugoslavia with 836,000, followed by Romania, Turkey, Iraq, and Afghanistan with 400,000, 356,000, 211,000 and 155,000 applications, respectively.

Table 9: Top countries with the most asylum applications to Europe from 1989 to 2012.

Country	Asylum Applications
Federal Republic of Yugoslavia	836,000
Romania	400,000
Turkey	356,000
Iraq	211,000
Afghanistan	155,000

Source: Hansen 2003, Hansen, R. (2003). Migration to Europe since 1945: Its history and its lessons. The Political Quarterly, 74 (s1), 25–38.

At the same time, the abolition of borders under the Maastricht Treaty in 1992 encouraged internal migration to Europe. According to Castles et al (2014) due to market integration in Europe, irregular migration increased. The policy followed by the European countries and especially the Nordic countries has the same objective as the policy that we will present in the Chapter 10, in order for the economy to follow the optimal perspective.

The aim of several European countries through their policies was to attract highly skilled or educated immigrants. To date, several countries have invested in national programs, such as attracting students with a view to absorbing them into the labour market. According to Lange on 2013, governments in countries such as Denmark, Germany, Sweden, and the UK targeted through high university programs to

integrate "the best". This goal is still reflected today as in October 2021 the EU updated the Blue Card Directive¹⁴ to attract and retain highly skilled workers. The EU Blue Card Directive establishes the conditions of entry and residence of highly qualified non-EU nationals in EU countries. The related residence and work permit is called EU Blue Card.

As mentioned above, countries are following the EU Directives, without this signifying the inability of governments to take radical actions as they see fit to integrate or not integrate refugees/immigrants. Immigration policies vary from country to country. This can be easily spotted by looking at Table 2. Hungary refusing to accept asylum seekers as opposed to the rest of the European countries and the Dublin Regulation.

7.2 Dublin Regulation

The common asylum system focused on the proportional distribution of asylum seekers between Member States, since solidarity and “fair burden-sharing”, both in terms of the processing of asylum applications and the return of non-beneficiaries to their countries of origin or third countries.

The procedure concerns cases of applicants for international protection subject to the Dublin III Regulation (EU Regulation No 604/2013, sometimes referred to as the Dublin Regulation) which determines which EU Member State is responsible for examining the application for asylum seekers seeking international protection within the European Union. Each Member State should be able to derogate from the responsibility criteria, in particular on humanitarian or compassionate grounds, to allow for the reunification of family members, relatives or any other persons related to them, and to examine an application for international protection lodged in that or another Member State, even if such examination does not fall within its responsibility.

The 27 EU Member States (Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland,

¹⁴ The EU Blue Card Directive establishes the conditions of entry and residence of highly qualified non-EU nationals in EU countries. The related residence and work permit is called EU Blue Card.

Portugal, Romania, Romania, Slovakia, Slovenia, Spain, Sweden, Spain, and Sweden) are responsible for implementing the Dublin III Regulation. As well as 4 partner countries (Switzerland, Iceland, Liechtenstein, Liechtenstein, and Norway).

As regards the United Kingdom after BREXIT, it is now only committed for those fostering requests submitted until 31/12/2020, and it is no longer possible to send new fostering requests to the United Kingdom.¹⁵

7.3 Refugee Policy and EU-Turkey agreement

On 2016, the 1st Summit of the EU Mediterranean countries - Athens Declaration was held on 9 September 2016. At this meeting, the leaders of the countries of the European South agreed on the need for a comprehensive EU migration policy to create a more efficient and convergent European asylum system by revising the Dublin system. They also moved to strengthen the protection of the EU's external borders and to pursue the implementation of the EU-Turkey agreement to prevent tragic deaths and migratory flows in the Aegean Sea.

The policy included, inter alia, fighting illegal migration by establishing strong frameworks for readmission and returns, while promoting enhanced cooperation in the Mediterranean region as well as with African countries.

On 18 March 2016, Turkey and the European Council reached an agreement to stop the flow of illegal migration through Turkey to Europe. This agreement included, inter alia, an obligation for Turkey to take back asylum seekers who have arrived in Greece from Turkey when the applications are deemed unacceptable. In addition, in order to prevent further dangerous - for the lives of migrants - movement of migrants by traffickers, the EU and Turkey have decided to work together to end irregular migration from Turkey to the EU.¹⁶

According to Karl Kopp, Director of European Affairs at PRO ASYL, "The agreement is a nightmare for human rights. It represents the EU's withdrawal from international refugee protection. The European Union, continues to promote the

¹⁵ National Registry of Administrative Public Services, General Secretariat of Public Administration, Ministry of Interior of Hellenic Republic.

¹⁶ https://ec.europa.eu/commission/presscorner/detail/en/MEMO_15_5860

normalization and expansion of these policies, putting human lives and democracy itself at risk." At the Special Summit of Heads of State and Government of Europe on 9 February 2023, it was agreed that the concept of "safe third countries" should be used more intensively, and that the European Asylum Agency should provide guidelines. In the context of the reform of the Common European Asylum System, the criteria for "safe third countries" are to be reduced to such an extent that there is almost nothing to prevent the mass rejection of people in the EU who are in fact entitled to protection.

The agreement continues to have a devastating effect on the lives of thousands of refugees on the Greek islands, with the unconditional and unconditional hostage-taking and the exclusion from the protection to which they are entitled and provided for. At the same time, illegal practices are evolving to prevent the informal forced returns of asylum seekers from accessing Greek and European territory, as documented in the recent Interim Report of the Mechanism for Recording Incidents of Informal Forced Returns and the unprecedented number of interventions by the European Court of Human Rights (ECHR) to the Greek authorities last year.

On 16 March 2023, in the joint press release PRO ASYL¹⁷ and Refugee Support in the Aegean (RSA) stated that, today, while the Greek part of the agreement is falling apart, the EU is reinforcing these policies and refusing to check compliance with EU law. The joint PRO ASYL and RSA complaint filed last year has still not been answered by the European Commission, when it was precisely called upon to launch immediate infringement proceedings against Greece for systemic violations of international and EU law, due to the arbitrary rejection of asylum applications, based on the concept of "safe third country", and the obstruction of refugees' access to asylum procedures.

¹⁷ PRO ASYL is Germany's largest pro-immigration advocacy organization. Founded in 1986 by protestant pastor Jürgen Micksch, Catholic priest Herbert Leuninger and others, the organization has over 18.000 members and an annual budget of more than €3,400,000. It supports asylum in Germany, in Europe and worldwide.

Chapter 8 – How Demographic Changes Affected Europe

8.1 Ageing Population in Europe

Undoubtedly, low birth rates and rising life expectancies lead to a rapidly aging developed world. According to Bloom et al., 2010, population ageing has a significant impact on economic growth. The explanation of this relationship is explained by the effect of the age structure on the shrinking labour market. The same conclusion is reached by other theoretical and empirical studies that have analyzed the effects of population aging (Bloom & Williamson 1998; Prskawetz et al. 2007, Crespo Cuaresma et al. 2014b; van der Gaag & De Beer 2015).

In recent years, EU countries have experienced a sharp decline in the active age group of their population. The solar structure has changed due to a decrease in fertility, an increase in life expectancy, as mentioned above, and a decrease in mortality. According to United Nations data, the number of people aged 65 and over has tripled in the last sixty years and the number of people aged 80 and over is six times higher than in 1950.

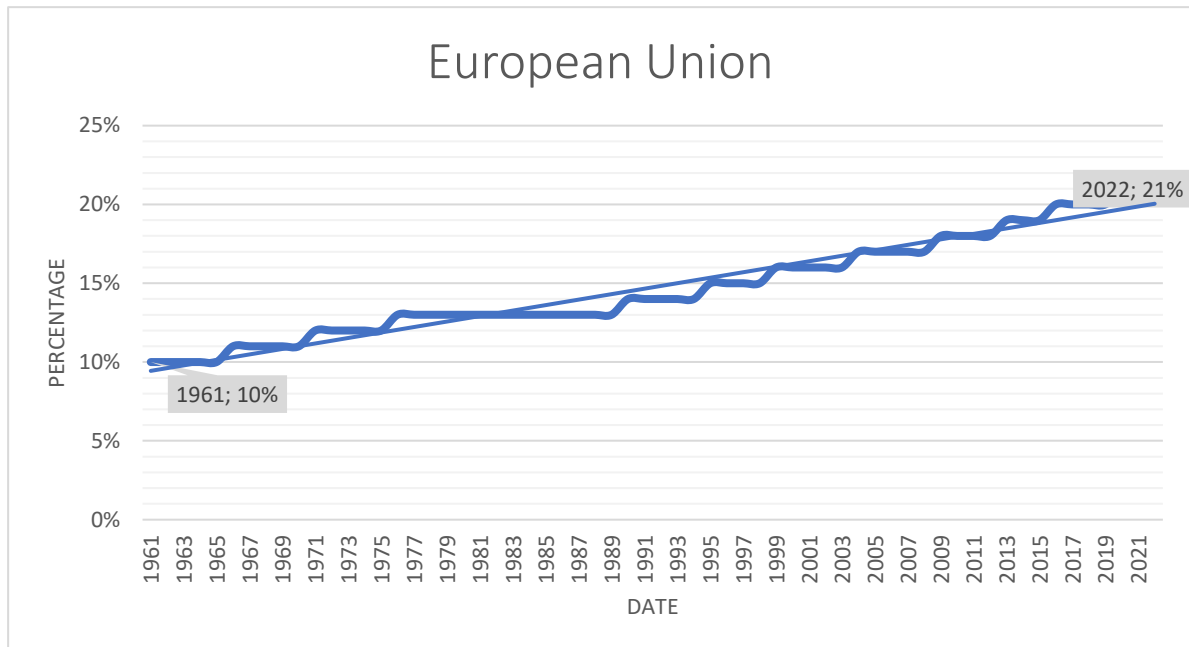
In a century (1950-2050), Europe's demographic weight in the world will have fallen by more than two-thirds. The population of the 27 EU Member States currently stands at 448.4 million, representing 5.6% of the world's population (8 billion). While 8 years ago, in 2015, Europe's population represented 7.4% of the world population with 492.3 million. Looking at these data, the demographic importance of the European Union seems to be an important issue, because what should strike the chord is the ageing of the population.

Figure 11 shows the average percentage of the population aged 65 years and over of the total population in the European Union 1961-2022 (%). The ageing rate in 1961 was only 10%, with the figure increasing over the years. In 2022 the rate increased by 52% since 1961 reaching 21%.

According to economic theory, the economic prosperity of a nation depends to a significant extent on the size of its labour force. When the proportion of the active labour force tends to decline, savings are a key tool for financing expenditure. So, the

sharp ageing of a population raises concerns about the pension policies of governments.

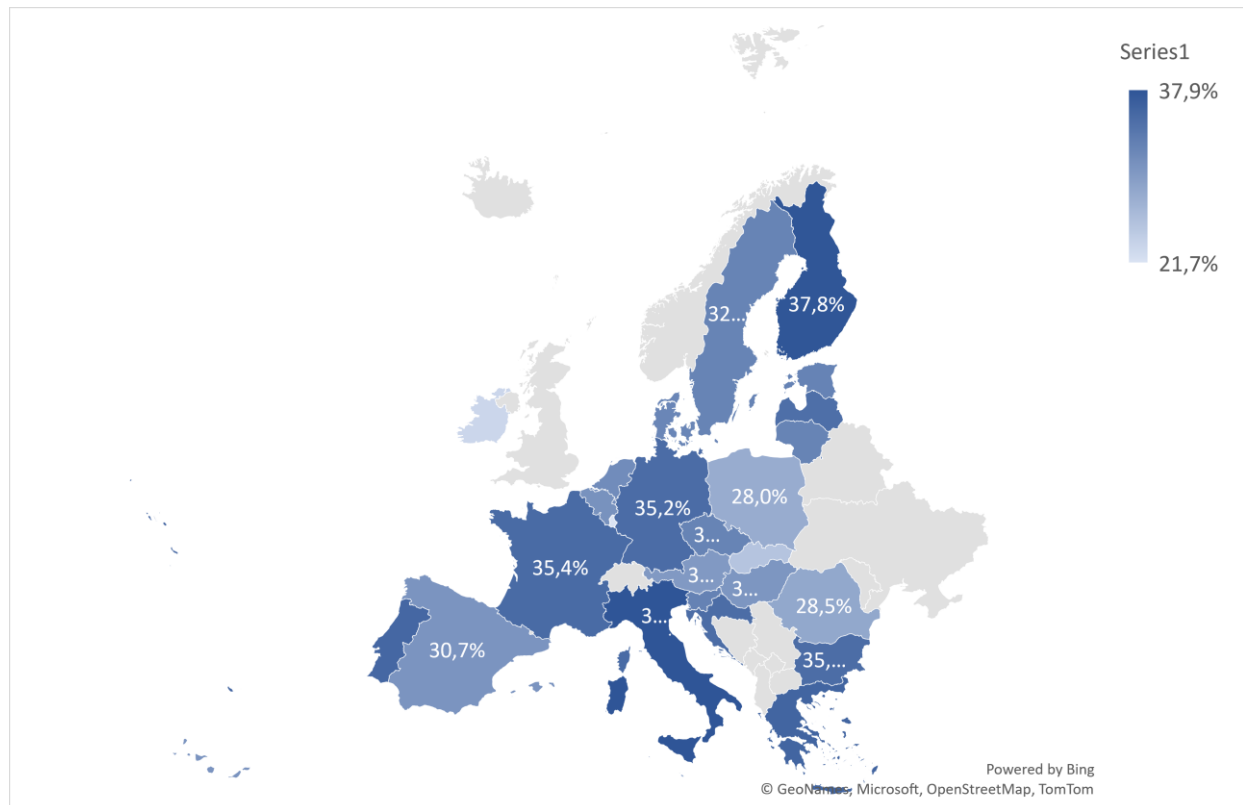
Figure 11: Average Proportion of Population ages 65 and above of the total population in European Union 1961-2022 (%)



Source: The World Bank, 2023

The map below (Figure 12) shows the proportion of people aged 65 and over in selected EU countries. The total number of people aged 14 to 64 in these selected countries divided by the total number of people aged over 65 has been used to create this percentage. Italy seems to have the highest rate of population ageing at 38%, followed by Finland and Greece with 37,8% and 36%, respectively.

Figure 12: Proportion of Population ages 65 and above of the total population in selected countries of European Union (%)

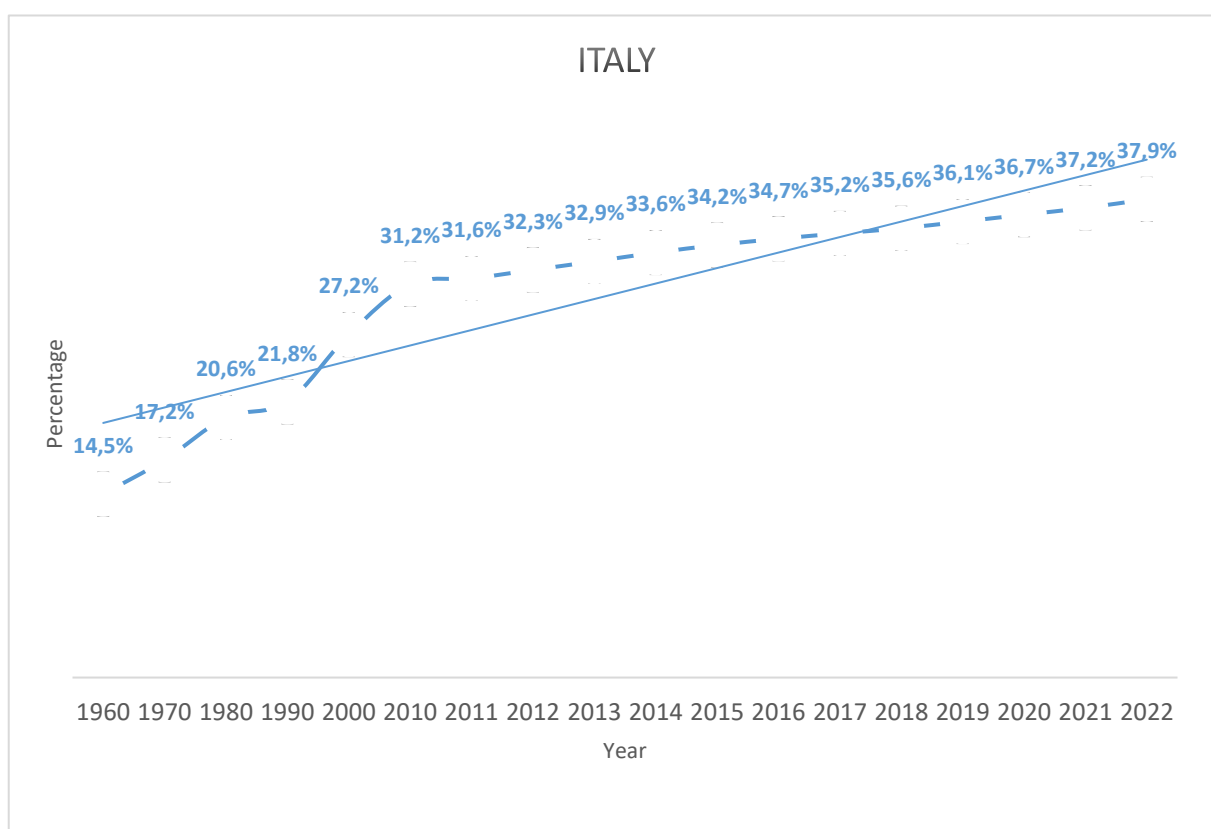


Source: The World Bank, 2023

8.2 The Italian case

The graph below (Figure 13) reflects the path followed by Italy's ageing rate from 1960 to 2022. It is worth noting that the growth rate has remained positive during the 62 years, apart from the years 1981-1984. Whereas the highest growth rate is recorded in the period 1990-2010 with an increase of 9.3%.

Figure 13: Proportion of Population ages 65 and above of the total population in Italy 1960-2022 (%)



Source: The World Bank, 2023

According to United Nations data, Italy has an average life expectancy of 84 years, a 0.17% increase from 2022. The case of Italy is a case in point. The new demographic phase that is emerging has forced the creation of policies to deal with the ageing of the population. Italy has tried to promote active ageing policies. In line with the European Commission, these policy aims to ensure that older people contribute to the economy and society for as long as possible, so that their economic survival does not rely on savings.

One of the main problems facing Italy due to the of the main problems facing Italy due to an ageing population is stagnation. The movement of the country's workforce to other regions with better economic opportunities is having a negative impact on the pension system. This issue is something that this research will address and will try to give a new approach to dealing with the ageing population.

8.3 Current Economic Policy in Aging Economies in Europe

Governments finance the payment of pension and health care benefits to the elderly by taxing workers and by borrowing against future generations, but in the prospects of aging societies these policies suggest a considerable fiscal burden. Also, monetary policy is assumed to be irrelevant with this significant demographic change.

The number of employees supporting a pensioner will decline from an average of four today, to just two, by 2060. Simultaneously, retirements are one of the largest funds in European social security budget. Hence, the Ageing Report in 2015 expresses the challenges that policy makers will have to address in near future. Unquestionably, Europe's officials must concern about the future of economy, financial stability, labor market, pension entitlements and higher living standards for European citizens.

8.3.1 Aging Economies and Immigration

Immigration has been addressed in both partial and general equilibrium models. Auerbach and Oreopoulos (1999) and Bonin, et. al. (2000) uses generational accounting - a partial equilibrium framework - to quantify the fiscal implications of immigration in the U.S. and Germany, respectively. The U.S. study finds relatively small fiscal effects of expanding immigration, whereas the German study finds significant effects. Lundborg and Segerstrom (2002) and Storesletten (2000) provide general equilibrium treatments of immigration. Lundborg and Segerstrom (2002) develop a two-country version of the endogenous growth model with quality ladders. In their simulations, immigration from the low-tech (South) to the high-tech (North) country enhances growth in both countries but reduces wages in the destination country.

Consequently, native workers in the North lose while immigrants from the south gain. Due to faster growth, more firms are driven out of business, which in turn reduces the stock market value of firms and hurts capital owners. Since Lundborg and Segerstrom (2002) apply a stylized infinitely lived-agent model, their study ignores the age and skill composition of immigrants.

Such aspects are considered in Storesletten (2000) who investigates the fiscal effects of immigration policies in the U.S. within an extended Auerbach and Kotlikoff (1987) model that has broadly similar features to that of Fehr et al. (2004). Despite their differences, both studies reach the same bottom line with respect to a uniform expansion of immigration, namely that it will do little to improve the devastating fiscal finances of the United States. Both studies also agree that increasing the number of high-skilled immigrants can be beneficial. Our study is closer to Boersch-Supan et. al. (2002), which set up a three-region OLG model, featuring Germany, Europe, and the rest of the OECD, to examine the international effects of alternative German pension reforms. They find very little change in the capital-labor ratio in their open economy simulations leading them to postulate several policy recommendations.

These models, however, treat preferences as given for all years that generational accounting takes place, equilibrium rates are constant over time and optimal allocations are assumed to be a deterministic function of future projections of lifetime income and both fiscal and monetary authorities are assumed to be absent or at best they are summarized by the amount of outstanding national debt.

Chapter 9 – The new Approach

9.1 Economic Policy in Aging Economies with Immigration Economic Model

The intention is to show that in aging economies the monetary authority sets interest rates higher than the ones under no aging. This is since agents tend to consume more today since they face positive probabilities to miss next period's consumption, creating a miss-match between savings today (which are in the form of government bonds) and old-age transfers tomorrow. Next, we show that an exogenous shock in the youthful mass (which is interpreted as exogenous immigration in this setting) of an aging economy restricts the need to create incentives for less consumption today. This happens because the increased mass of young people creates enough savings for old-age transfers reducing the need for higher interest rates.

Immigration has been considered unravelling the challenge of aging population. The following research aims to assess whether population ageing, and immigration require specific policies from the fiscal and monetary authorities in order to preserve the economy to an optimal path.

The following analysis departs significantly in three very important directions:

1. Immigration can change steady state equilibrium rates as well as optimal allocations of youthful and old-age consumption,
2. Domestic borrowing reacts to preferences and equilibrium rates.
3. Fiscal and monetary authorities participate actively in the economy by setting old-age transfers and borrowing rates responding to private sector's equilibrium outcomes.¹⁸

9.1.1 Public Sector

The overall setup is similar to that one developed by Azariadis and Lam (2003). We define a fiscal authority that issues debt in each period t , which is purchased by both

¹⁸ Azariadis and Lam (2003) first developed this framework to assess optimal inflation targets in dynamically efficient economies.

the households and the monetary authority with real yield $R_t = \frac{R_t^N}{i_t}$, where inflation $i_t = \frac{P_{t+1}}{P_t}$ measures the

change in the price level P_t . Currency is used for transaction services by households. The budget constraint for the fiscal authority reads:

$$g_t + R_{t-1}B_{t-1} = B_t \quad (9.1)$$

whereas the budget constraint for the monetary authority reads:

$$D_t - R_{t-1}D_{t-1} = m_t - \frac{m_{t-1}}{i_t}$$

Where,

B_t : the real stock of public debt issued at t with maturity at $t + 1$.

D_t : the monetary authority's demand for debt.

g_t : the real fiscal deficit.

$m_t = \frac{M_t}{P_t}$: the real value of currency

9.1.2 Households

We define cohorts as collections made up of n_y mass of households. Each one receives a youthful endowment κ , randomly drawn from a bounded distribution $\Gamma(\kappa)$ with $\Gamma(\bar{\kappa}) = n_y$, $\Gamma(\underline{\kappa}) = 0$ and $\int \Gamma(\kappa) = n_y$, which characterizes the birth state of each household. Thus, for any household, the endowment vector reads:

$$\begin{aligned} \pi_t(\kappa) &= (n_y \kappa, P(n_{yt+1} \leq n_{yt})n_y T_{t+1}) \text{ if } t \geq 1 \\ &= T_{initial} \text{ if } t = 0 \end{aligned} \quad (9.2)$$

Where κ is uninsurable risk, T_{t+1} is deterministic lump-sum transfer from the fiscal authority, which can be thought of as social security transfers and $P(n_{yt+1} \leq n_{yt})n_y$ is the mass of households alive at period $t + 1$. In this study we assume that individual household probabilities are identical to all households and deterministic. This allows us to write $P(n_{yt+1} \leq n_{yt})n_y = n_0$, which denotes the total mass of households alive at $t + 1$. We abstract from income taxes since then, the fiscal authority

can perfectly hedge income risks by taxing the young and distribute the sum as lump-sum transfers leaving unaffected private incentives. Young households, however, finance old-age government transfers through the purchase of government bonds issued at t with maturity at $t + 1$ and real yield R_{t+1} .

All households with birth state κ face the same modified Azariadis-Lam lifecycle utility function, that reads:

$$u_t(\kappa, \beta, n_y, n_0) = \log \left\{ \min \left[n_y c_t(\kappa), \frac{n_y m_t^d(\kappa)}{\nu} \right] \right\} + \beta \log n_0 o_{t+1}(\kappa) + \gamma (\log n_y z_t + \log n_0 z_{t+1}) \quad (9.3)$$

which depends on youthful consumption $n_y c_t(\kappa)$ and currency demand $\frac{n_y m_t^d(\kappa)}{\nu}$, old-age consumption $n_0 o_{t+1}(\kappa)$, and consumption of public goods $n_y z_t, n_0 z_{t+1}$. Time preference parameter is assumed to belong in the unit circle, $\beta \in (0, 1)$, parameter $\nu \geq 0$ is the reciprocal of consumption velocity of money, and $\gamma > 0$ is the marginal rate of substitution between private and public goods consumption.

Household κ has period-by-period budget constraints:

$$(9.4) \quad n_y c_t(\kappa) + n_y m_t^d(\kappa) + n_y b_t^d(\kappa) = n_y \kappa$$

$$(9.5) \quad o_{t+1}(\kappa) = n_0 o_{t+1} + \frac{n_y m_t^d(\kappa)}{i_t} + R_t n_y b_t^d(\kappa)$$

Where b_t^d is the demand for public debt. These constraints can be summarized in one lifecycle constraint of the form:

$$(9.6) \quad n_y c_t(\kappa) + n_0 \frac{o_{t+1}(\kappa)}{R_t} + \left(\frac{n_y R_t^N - n_y}{R_t^N} \right) m_t^d(\kappa) = n_y \kappa + \frac{n_0 T_{t+1}}{R_t} = y_t(\kappa)$$

Where, $y_t(\kappa)$ is the value of lifetime income. Optimal consumption plans require that $n_y m_t^d(\kappa) = n_y \nu c_t(\kappa)$ whenever $R_t^N > \frac{n_0}{n_y}$.¹⁹ Taking this into account the lifetime constraint reduces to the following set of equations:

$$(9.7) \quad \frac{c_t(\kappa)}{\varphi_t} + n_0 \frac{o_{t+1}(\kappa)}{R_t} = y_t(\kappa)$$

¹⁹ Notice that if households alive at t are equal to those alive at $t + 1$, this condition reduces to the one provided by Azariadis and Lam (2003), which states that $R_t^N > 1$.

$$(9.8) \quad \frac{1}{\varphi_t} = n_y + v(n_y R_t^N - n_y)/R_t^N$$

Maximizing the household utility function subject to the above constraint results the following demand schedules:

$$(9.9) \quad c_t(\kappa) = \frac{\varphi_t y_t(\kappa)}{1 + \frac{\beta n_y}{n_0}}$$

$$(9.10) \quad o_{t+1}(\kappa) = \frac{\beta \left(\frac{n_y}{n_0}\right) \varphi_t y_t(\kappa)}{1 + \frac{\beta n_y}{n_0}}$$

$$(9.11) \quad m_t^d(\kappa) = v c_t(\kappa) \text{ if } R_t^N > \frac{n_0}{n_y}$$

$$(9.12) \quad = +\infty \text{ if } R_t^N > \frac{n_0}{n_y}$$

$$(9.13) \quad b_t^d(\kappa) = n_y(\kappa) - n_y c_t(\kappa) - n_y m_t^d(\kappa)$$

The economy-wide demand schedules are obtained by integrating over all households and depend on the instrument setting (τ_t, φ_t) , given youthful and old-age masses (n_y, n_0) . Given that population dynamics are deterministic, aggregate consistency requires that individual youthful and old-age household masses are identical to economy-wide youthful and old-age shares. We, thus, get:

$$(9.14) \quad c_t = \frac{\varphi_t}{1 + \frac{\beta n_y}{n_0}} \left(\frac{n_0 T_{t+1}}{R_t} + n_y^2 \right)$$

$$(9.15) \quad o_t = \frac{\frac{\beta n_y}{n_0} \varphi_t}{1 + \frac{\beta n_y}{n_0}} (n_0 T_t + n_y^2 R_t)$$

$$(9.16) \quad m_t^d = v c_t \text{ if } R_t^N > \frac{n_0}{n_y}$$

$$(9.17) \quad = +\infty \text{ if } R_t^N > \frac{n_0}{n_y}$$

$$(9.18) \quad b_t^d = n_y - c_t - m_t^d$$

Optimal allocations from households are taken as given from the fiscal and monetary authority, which set policies as vectors (τ_t, z_t, R_t^N) that describe real transfers

to the old, purchases of public goods, and settings of the nominal yield.²⁰ Feasible policies are also consistent if goods, bonds and money markets clear for each $t \geq 1$, which is equivalent to the following conditions (subject to the corresponding budget constraints for the fiscal and monetary authority):

$$(9.19) \quad c_t + \chi_t + z_t = n_y$$

$$(9.20) \quad D_t + b_t^d = B_t$$

$$(9.21) \quad m_t^d = m_t$$

To clear the goods market, we substitute the aggregate schedules of youthful and old-age consumption in the constraint above to get a first-order difference equation in the real yield R_t which reads:

$$(9.22) \quad \beta R_{t-1} \frac{n_y^3}{n_0} + \tau_{t+1} \frac{\varphi_t n_0}{R_t} = (1 - z_t) \left(1 + \beta \frac{n_y}{n_0} \right) - \varphi_t n_y^2 - \beta n_y \tau_t$$

From the above relationship, we see that equilibrium outcomes are linked to the choice of the fiscal instruments τ_t, z_t , and the monetary instruments φ_t , given youthful and old-age masses n_y, n_0 .²¹ Passive policies of the form $\pi_t = (\tau_t, z_t, \varphi_t) = (\tau, z, \varphi) \equiv \pi$, for all t , lead indeterminacies. In addition, now the monetary authority cares also for the aging of the society as well as any immigration that takes place.²² Any interest-rate instrument R_t^N that aims to steer the economy towards low-inflation steady states depends explicitly on the above quantities.

9.1.3 Optimal policy in the Steady State

To see the effect of these new features in the prevailing optimal monetary and fiscal policies we study the steady state of this economy. Solving 10.22, we obtain a dynamic system in R :

²⁰ For each $t \geq 1$, these vectors satisfy the following inequalities $z_t \geq 0, R_t^N, n_0 \tau_t + z_t \leq 1$.

²¹ This relationship reduces to the one derived in Azariadis and Lam (2003) if households have identical youthful and old-age masses $n_y = n_0 = 1$.

²² We implicitly assume that immigrants are re-born in the destination country. Thus, they draw an endowment from the same distribution as the native-born residents (although, the realization itself can differ significantly). From that moment, they are identical to the native-born residents but affect disproportionately youthful and old-age masses since, basically, only the first one changes.

$$(9.23) \quad R_t = \frac{\varphi_t n_o \tau_t}{Z(\pi) - \beta \frac{n_y^3}{n_o} R_{t-1}}$$

With $Z(\pi) = (1 - z) \left(1 + \beta \frac{n_y}{n_o}\right) - \varphi n_y^2 \tau$ decreasing in $(\tau, z, \varphi) \equiv \pi$ and $\frac{1}{\varphi_t} = n_y + v \left(\frac{n_y R_t^N - n_y}{R_t^N}\right)$ decreasing in R_t^N . Permissible steady state values are positive solutions to the equation:

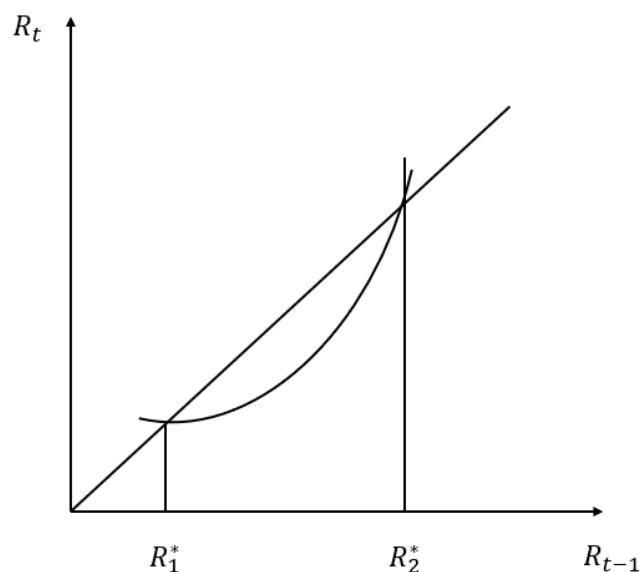
$$(9.24) \quad \beta \frac{n_y}{n_o} R - Z(\pi) R + \varphi n_o \tau = 0$$

So, any policy vector $(\tau, z, \varphi) \equiv \pi$ that satisfies the condition $\Delta > 0 \leftrightarrow Z(\pi) > 2\sqrt{\beta \varphi n_o \tau}$, is consistent with two steady states given by:

$$(9.25) \quad R_{1,2}^* = \frac{Z(\pi) \pm \sqrt{\Delta}}{2\beta \frac{n_y}{n_o}}$$

These two roots are associated with two different levels of inflation: one high and one low. Figure 16 pictures the solution of the system. The arrow points the direction of the economy.

Figure 14: Optimal Policy in the Steady State



Source: The author

It is well known that in this system indeterminacy prevails since the low inflation state (high R) is unstable. Azariadis and Lam (2003) show, very eloquently, that in simple lifecycle economies of this kind, under certain conditions, Taylor rules defeat indeterminacy, reverse the Sargent and Wallace (1981) «unpleasant monetarist arithmetic» property, and steer the economy towards low inflation «dynamically efficient outcomes» (i.e., setting R_2^* as an optimal low inflation interest rate).²³ The question, however, is if the optimal monetary policy is different and in what direction from an economy that youthful mass does not face a positive probability to die²⁴ and there is no possibility of an exogenous increase in the economy's youthful mass.²⁵

9.1.3.i Case 1: Economic Policy with Aging and no Immigration

Finding any differences in optimal policies between no aging and aging economies is equivalent to compare 6.25 in the two cases. In the absence of aging (*i.e.*, $n_y = n_0 = 1$), 6.25 reads:

$$R_{1,2}^* = \frac{A(\pi) \pm \sqrt{\Delta}}{2\beta} \quad (9.26)$$

Where $A(\pi) = (1 - z)(1 + \beta) - \varphi - \beta\tau$ and $\frac{1}{\varphi} = 1 + v(\frac{R_t^N - 1}{R_t^N})$. If we assume that Taylor rules exist there that defeat indeterminacy and steer the economy towards the low inflation interest rate then comparing all different parts of 9.25 and 9.26, we see that $R_2^{**} > R_2^*$.²⁶ Figure 17 pictures the optimal monetary policy for an aging economy relative to one without aging.

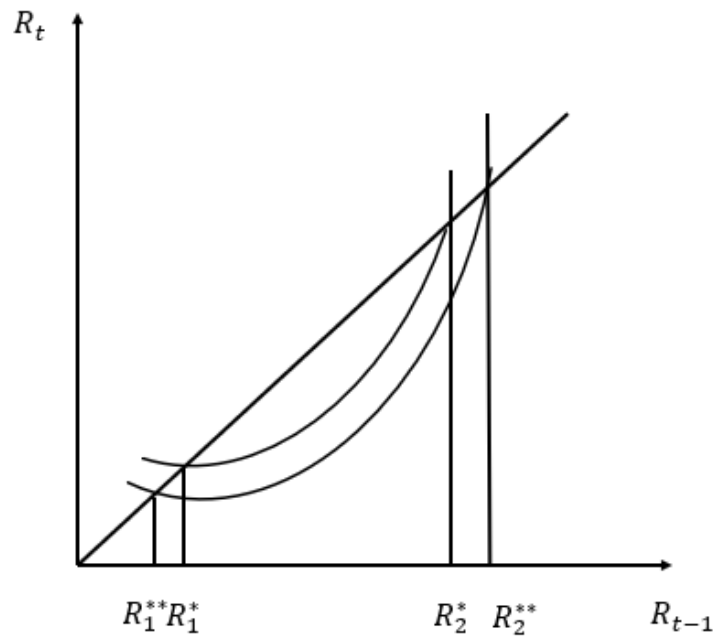
²³ See Appendix II for a sketch of a proof in our setting, which shows the robustness of Azariadis and Lam (2003) result.

²⁴ In the present study this is treated as "aging". This is rationalized by the fact that economies with identical youthful and old-age masses (*i.e.*, $n_y = n_0 = 1$) cannot capture the inter-generational dynamics generated by mortality risk.

²⁵ In the present study this is treated as «exogenous immigration». The reason why only the youthful mass increases is rationalized by numerous studies, which describe the profile of immigrants as young, willing to work hard individuals with high propensities to save.

²⁶ The proof is omitted from the present work.

Figure 15: Optimal Policy with Aging



Source: The author

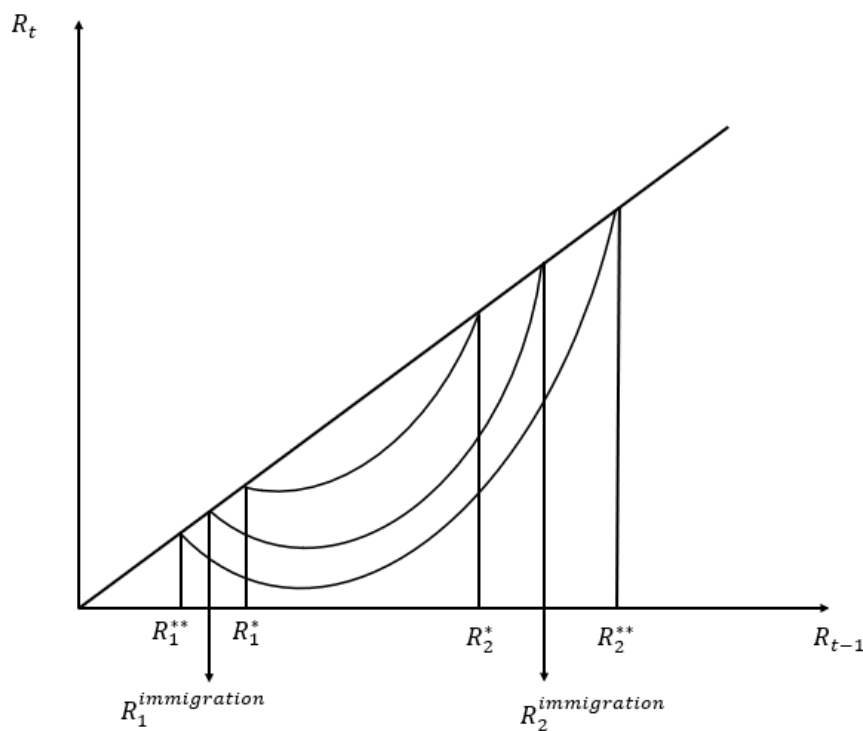
This is an important result since it shows that for any value of the structural parameters, in aging economies the monetary authority sets interest rates higher than the ones under no aging. This is intuitive since agents now face positive probabilities to miss next period's consumption. Their incentives to consume now increase, creating a miss-match between savings today (which are in the form of government bonds) and old-age transfers tomorrow. The monetary authority needs to create incentives for less consumption today and more government bond purchases that yield tomorrow at a higher rate.²⁷

²⁷ This finding would perfectly rationalize the higher mean interest rates that prevail in Europe compared to the US given that Europe suffers more from population aging.

9.1.3.ii Case 2: Economic Policy with Aging and Immigration Finding

Finding any differences in optimal policies between aging only and aging economies with immigration is equivalent to compare 9.25 in the two cases. In the presence of an exogenous increase in youthful mass, n_y (remember that this is treated as exogenous immigration), a very interesting result emerges. It can be shown that an increase in n_y will result in higher optimal interest rates than under no immigration and no aging but lower than just aging. In other words, the following ordering prevails: $R_2^{**} < R_2^{immigration} < R_2^*$. Figure 18 pictures the new steady state.

Figure 16: Optimal Policy with Aging and Immigration



Source: The author

This result is also very interesting since it shows that when an aging economy receives an exogenous shock in her youthful mass, this can work as an equilibrating mechanism that limits the need to create incentives for less consumption today. This happens because the increased mass of young people creates enough savings for old-age transfers reducing the need for higher interest rates. Notice though that it cannot

reproduce the result under no aging and no immigration since the incentives to consume more today still exist but in a much less extend.

Chapter 10 – Labour Market and Immigration

Labour market has a two-way relationship with migration (external and internal). Limited economic incentives in a labour market led people to seek other sources of income, usually illegal. In this chapter we will provide a brief analysis of how employment opportunities affect the enhancement of illegal migration.

10.1 The impact of migration in labour market.

The effect of the migration on the labour market is more difficult to ascertain but this does not mean that it is negligible. There has been much research recently into the question of how immigration affects the labor market outcomes of natives. In the simplest supply and demand model of the labor market, immigration causes an outward shift in the labor supply curve. Assuming imperfectly elastic labor supply and demand curves, equilibrium wages will fall, and equilibrium employment will rise, but by less than the size of the immigration. Immigrants will therefore displace some natives in employment.

According to Friedberg Rachel, there is a significant positive correlation between the former presence of the immigrants in an occupation in the USSR and their presence in that occupation in Israel. But the occupational choices of Russians abroad were independent of Israeli wage and employment growth subsequent to their migration. IV estimates indicated that immigration did not have an adverse impact on native Israeli labor market outcomes.

10.1.1 The Impact of the Labor Market on Crime

As Paul Samuelson's assertion suggests, the textbook model of a competitive labor market predicts that an immigrant influx should lower the wage of competing factors. A widely cited survey by Friedberg and Hunt [1995, p. 42] concludes that "the effect of immigration on the labor market outcomes of natives is small. Similarly, the 1997 National Academy of Sciences report on the economic impact of immigration argues that "the weight of the empirical evidence suggests that the impact of immigration on the wages of competing native workers is small [Smith and Edmonston 1997, p. 220]. These conclusions are potentially inconsistent with the textbook model because the immigrant supply shock in recent decades has been very large, and most

studies of labor demand conclude that the labor demand curve is not perfectly elastic [Hamermesh 1993].

In addition, many modern studies attempted to link the refugees and political violence. Choi and Salehyan (2013) examined the consequences of hosting refugees for domestic and international terrorism. A cross-national, time-series data analysis of 154 countries for the years 1970–2007 shows evidence that countries with many refugees are more likely to experience both domestic and international terrorism. This outcome implies that, although there is this evidence, countries will have to strike a balance between security and humanitarianism. In the same vein, countries taking in large numbers of refugees will have to find the right balance in the labour market between natives and refugees.

Borjas (2003) suggests that immigration is not evenly balanced across groups of workers who have the same education but differ in their work experience, and the nature of the supply imbalance changes over time. This search develops a new approach for estimating the labor market impact of immigration by exploiting this variation in supply shifts across education-experience groups. I assume that similarly educated workers with different levels of experience participate in a national labor market and are not perfect substitutes. The analysis indicates that immigration lowers the wage of competing workers: a 10 percent increase in supply reduces wages by 3 to 4 percent.

10.1.2 Migration Trends in U.S.

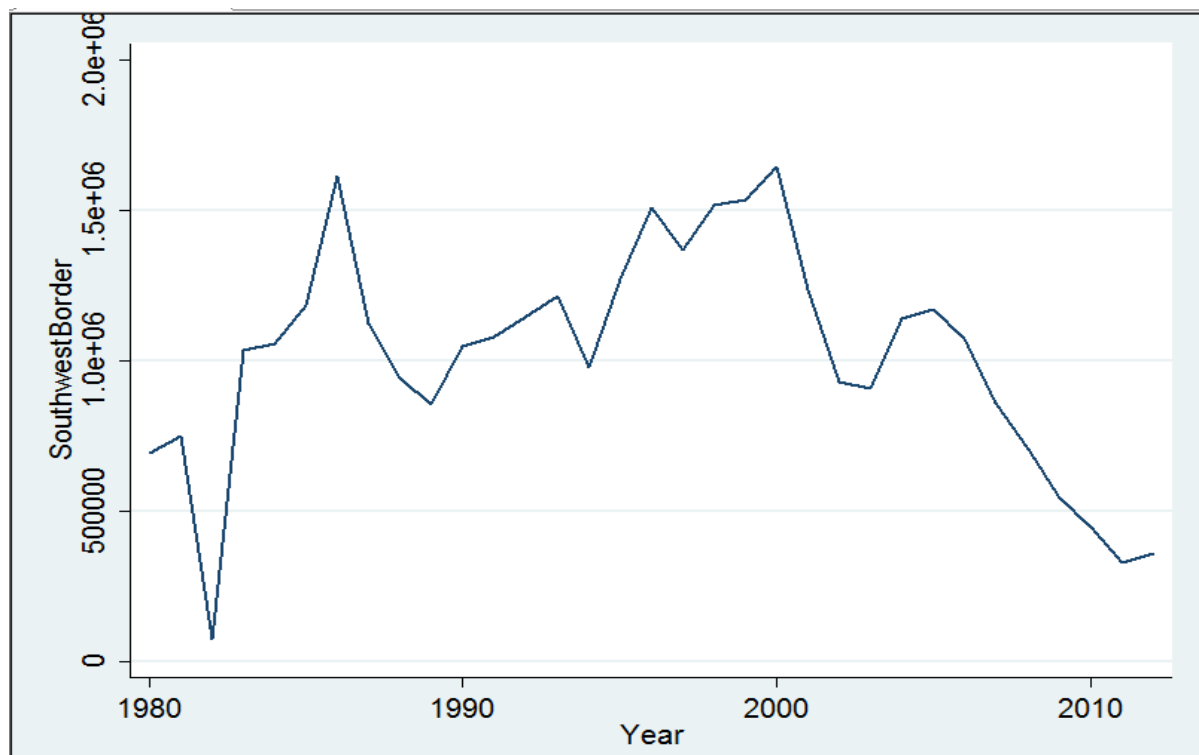
It is important to mention that migration data is not always reliable. The official source of illegal immigration data is the U.S. Customs and Border Protection. This analysis uses the number of the illegal migration from Mexico to U.S caught on Southwest Border. The size of the illegal aliens' flow has fluctuated dramatically during the past century.

By 1996, nearly 1.500.000 persons were being admitted annually. In addition, the contribution of the Second Great Migration to population growth is fast approaching the level reached during the First Great Migration, when immigration accounted for 40 to 50 percent of the change in population in general in US. As a result of these trends, the fraction of the population that is foreign-born rose from 4.7 to 7.9 percent between 1970 and 1990.

The 1990 Immigration Act permits the entry of an additional 150,000 legal immigrants annually. Figure 14 illustrates that the legislated increase in the size of the immigrant flow makes it likely that the US will admit a record number of immigrants during the 1990s.

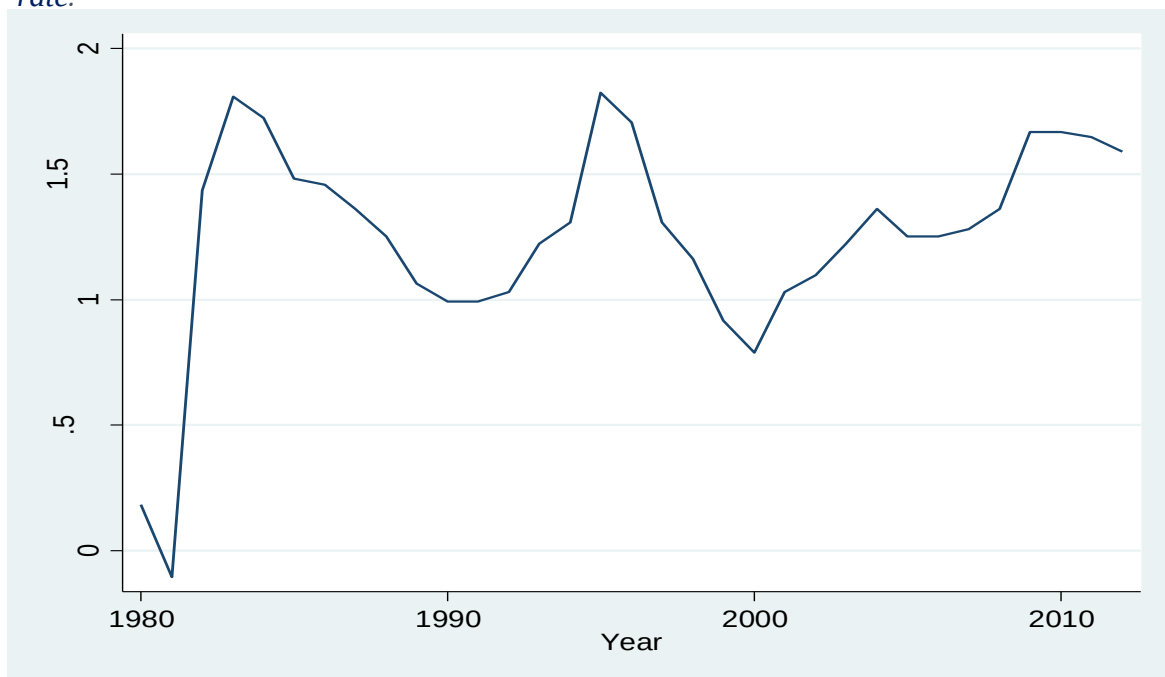
In compare, Figure 14 and Figure 15 illustrate the positive correlation between illegal immigration and unemployment rate.

Figure 17: The positive correlation between illegal immigration and unemployment rate.



Source: the author

Figure 18: The positive correlation between illegal immigration and unemployment rate.



Source: the author

10.2 Human trafficking vs Human smuggling

The debate over definitions for the concepts of “trafficking” and “smuggling” has examined only in the second half of the 1990s. According to Article 3, paragraph (a) of the “Protocol to Prevent, Suppress and Punish Trafficking in Persons”, trafficking in Persons defined as the recruitment, transportation, transfer, harboring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation.

Trafficking is a very complex concepts which requires consideration not only of the way a migrants entered the country but also his/her working conditions and whether he/she consented to the irregular entry and/or these working conditions. According to many recent definitions, trafficking involves severe forms of labour exploitation. In contrast, the main purpose of smuggling may be simply to facilitate the illegal crossing of a border.

Regarding to “Protocol against the Smuggling of Migrants by Land, Sea and Air”, the smuggling of people is defined as “the procurement, in order to obtain, directly or indirectly a financial or other material benefit, of the illegal entry of a person into a state Party of which the person is not a national or a permanent resident.”

10.3 Economic Model of Crime (Trafficking)

Most current studies of victims of trafficking for sexual exploitation are based on studies of former victims described by, or discovered through, organizations or law enforcement bodies in connection with law enforcement intervention, involvement with a support agency, or within some form of return program to their country of origin (Kelly, 2002). Another group of studies focus on arenas where systematic exploitation of migrants is known to take place (i.e., prostitution) (see for instance IOM, 1996a, 1996b; Kelly and Regan, 2000), while the final group of studies are based on data on migrants (IOM, 2001).

Given that many trafficking cases remain undiscovered, or that victims/survivors of trafficking are often afraid to talk about their experiences, it is very difficult to obtain first-hand information from those who have been exploited. A great deal of research on trafficking is, therefore, based on relatively small samples of survivors, usually identified by law enforcement agencies or persons assisted by NGOs or international organizations. The actual ratio of assisted survivors to the total number of victims is unknown, meaning that studies based only on assisted cases may not be representative of the total number of trafficked persons which may remain undiscovered.

The first stage of this paper is the consideration of Ehrlich’s simple theoretical economic model of crime (1973), which was inspired by Becker’s well-known model of predictions. The base of the pyramid is the motivation of an individual to commit crime, comparing the total benefits and costs of being a ‘criminal’. According to this theoretical model, the benefits are the earnings from illegal activities, while the costs are considered to be the loss of revenue caused by not being employed. The main point of the Ehrlich model is that work, and crime are treated as substitutes for each other. Machin and Meghir (2000) developed a structural model of crime probabilities. The

main deviation from Ehrlich's model, therefore, is the idea that work, and crime may coexist. Thus, the level of wages and the rate of unemployment are treated as essential factors in an individual's decision.

The economic model consists of four predictions, varied according to the preferences of individuals. The structure of the economic model will be introduced after a summary of the assumptions which inform the initial model. An individual chooses the most favourable outcome by comparing the expected values of legal and illegal activity (human trafficking). According to microeconomic theory, the aim of consumers is the maximisation of their utility. An individual therefore chooses whether to commit a crime or to act legally by comparing the total benefits of each option. If the price (wage) of coyote in legal activity is lower than the potential revenue from illegal activity, the choice will fall on crime. Secondly, the problem of uncertainty results from a likelihood of being caught. Indeed, when a country or state has a tighter border enforcement, it is more likely that smugglers will think twice before doing so.

The model assumes that an individual will choose whether to commit a crime be considering its potential economic returns. Most economists argue that an individual's decision to commit crime is affected more by his or her beliefs about the profits of that crime rather than its costs or the level of effort involved.

The main contribution of this analysis is to research is the replacement of crime as a general variable to the specific variable of human trafficking. The economic model therefore consists of four predictions, varied according to the preferences of individuals. The structure of the economic model will be introduced after a summary of the assumptions which inform the initial model. An individual chooses the most favourable outcome by comparing the expected values of work and crime.

According to microeconomic theory, the aim of consumers is the maximisation of their utility. An individual therefore chooses whether to commit a crime or to act legally by comparing the total benefits of each option. If the market wage is lower than the potential revenue from crime, the choice will fall on crime. Secondly, the problem of uncertainty results from a likelihood of being caught. Indeed, when a country or state has a proper, impartial, and developed justice system, it is more likely that citizens wishing to engage in criminal activities will think twice before doing so.

Border enforcement is intended to prevent and deter the illegal movement of goods and people across a country's border. The impact of enforcement on illegal immigration depends on how enforcement affects migration costs and how migration costs affect the decision to migrate. One of our goals in this paper is to estimate the impact that enforcement has on the price smugglers charge to bring illegal immigrants across the Mediterranean border. Disaggregated the border into regions, based on the presence of geographic barriers that separate regions and apprehensions data that delineate concentrated areas of illegal crossing.

10.3.1 Model of Predictions

The framework of the present economic model is based on a reapplication of Machin and Meghir's model, in which individuals choose whether to work and whether to commit a crime. The model is the following:

- $EY^{m\phi} = [\alpha^{1m\phi}r_{\gamma} + \alpha^{2m\phi}\log(w) + \alpha^{3m\phi}\bar{c}_{\gamma} + area + time + \alpha^{om\phi}](1 + P_i) = x_i\alpha^{m\phi} + v_i^m$
- $EY^{mo} = [\alpha^{1o\phi}\log(w_i) + area + time + \alpha_i^{oo\phi}] = x_i\alpha^{o\phi} + v_i^{o\phi}$
- $EY^{o\phi} = [\alpha^{1mo}r_{\gamma} + \alpha^{2mo}T_i + \alpha^{3mo}\bar{c}_{\gamma} + area + time + \alpha^{omo}](1 + P_i) = x_i\alpha^{mo} + v_i^{mo}$
- $EY^{oo} = [\alpha^{1oo}T_i + area + time + \alpha^{ooo}]x_i\alpha^{oo} + v_i^{oo}$

In this formula, v symbolises the differences between individuals which may arise from the heterogeneity of their preferences and tastes relevant to each option.

The model assumes that an individual will choose whether to commit a crime (human trafficking) be considering its potential economic returns. Most economists argue that an individual's decision to commit crime is affected more by his or her beliefs about the profits of that crime rather than its costs or the level of effort involved. The choice clearly also equally depends on the revenue from work, as these goods are not substitutes for each other, which allows them to coexist. In the model used in this study, the revenue from crime and from work are denoted by r_{γ} and w_i respectively. The revenue from unemployment is equivalent to that from unemployment benefit, denoted by T_i . The transfers T_i clearly constitutes an essential factor in the investigation of the

relationship between employment opportunities and crime because they represent effort-free earnings for the unemployed. In addition, unemployment benefit indicates the wealth of a country or state and its ability to protect its unemployed from poverty. The model suggests that if the relative size of α^{1mo} and α^{1oo} have a stronger effect on the likelihood of unemployment, and the cost of crime is low, the existence of unemployment benefit will tend to increase the crime rate, so in our model if this happening the human migration may increasing.

According to the first prediction, an increase in wages would imply a reduction in crime level (human trafficking), as it increases the incentive to work. If an individual earns more than the market wage, utility increases indirectly. Since work and crime move in parallel, the influence of wages is uncertain, as the decision to commit crime is affected by the comparative value of criminal activity and legal activity. However, being a criminal implies the sacrifice of effort as well as the necessary uncertainty caused by potential arrest. So, if wages increase, the revenue from crime is lower than that from work, which means that the incentive to commit crime becomes less powerful than the incentive to work.

10.3.2 The Econometric Model

The role of economic incentives, particularly the relationship between employment opportunities and illegal migration, using data from the US and Mexico from the period between 1980 and 2012. It uses both wages and the unemployment rate. The estimation is controlled for variations between trends over time. The results suggest the potentially strong effect of the unemployment rate on illegal immigration, while also indicating the negative relationship between wages and rates of illegal immigration. The present analysis partly depends on the model of Machin and Meghir (2000) and demonstrates the potential effect of the unemployment rate and wages on illegal migration.

The intention is to examine the potential relationship between crime and people smuggling using an analysis treating smuggling as an economic phenomenon. Human migration is not a new phenomenon. The process of globalization has enabled a significant amount of people to seek a better life to Western Europe, Australia, and North America. In recent years, the Mediterranean region has seen a massive escalation

of this phenomenon, and an increase in the activities of organized criminal networks who facilitate irregular migration. Conflict and economic instability are the main reason for the illegal movement of migrants throughout the world, and many migrants are refugees or asylum seekers.

The first stage of this paper is the consideration of Ehrlich's simple theoretical economic model of crime (1973), which was inspired by Becker's well-known model of predictions. The base of the pyramid is the motivation of an individual to commit crime (human trafficking), comparing the total benefits and costs of being a 'criminal'.

Any individuals with perfect information and the desire to take risks could choose whether to proceed to an illegal activity. If they are risk-averse, however, government enforcement could make them feel insecure. This means that deterrence is also a determinant of smugglers' choice: if they feel economically and emotionally secure, there is more motivation to commit a crime.

Many studies previously referred to found that the effect of enforcement on smuggling/human trafficking price is small. For example, an increase on federal expenditures to fight the illegal migration or tighter border enforcement did increase the probability of apprehension but have no effect on the number of illegal migrants entering in a country.

The following empirical forms, based on the structural model of Machin and Meghir (2000), will be:

$$\begin{aligned} SouthwestBorder_{it} \\ &= a_i + \beta_i Wage_{it} + \delta_i UnemplRate_{it} + \zeta_i Transfer_{it} + \\ &\quad \lambda_i Population_{it} + \varepsilon_{it} \end{aligned}$$

Wages is an explanatory variable that affect the dependent variable of illegal immigration, while unemployment rate, transfer and population are common independent variables which help to explain the relationship between wages and the rate of illegal immigration. The first specification reflects the return to crime (revenue) by a change in wages. An increase in wages will tend to make the crime rate (illegal migration) decrease, because the benefits of working will be higher than those of crime.

To control for the variable of unemployment benefits, it is necessary to divide it by the unemployment rate. Similarly, the variable of population will be changed, to the amount of non-wages for the population of all individual states for the entire 33-year period from 1980 to 2012. Therefore, the revised structural empirical model²⁸ is as follows:

$$\begin{aligned}
 SouthwestBorder_{it} &= a_i + \beta_i PercapitaWage_{it} + \delta_i UnemplRate_{it} \\
 &+ \zeta_i \left(\frac{Transfer}{Unempl.Rat} \right)_{it} + \\
 &\lambda_i \left(\frac{PersonIncome - Wage}{Population} \right)_{it} + \varepsilon_{it}
 \end{aligned}$$

The chosen empirical model is used in order to justify the goals of this study. The analysis uses instrumental variables (IV) estimation. The empirical approach could be a cross-section analysis which controls for national fixed effects and trends over time. The results are expected to show a negative correlation between wage and illegal migration, and a positive correlation between unemployment rate and illegal migration. In other words, employment opportunities determine the level of illegal immigration.

Instrumental variables (2SLS) regression

Source	SS	df	MS	Number of obs =	23
Model	3.00315948	4	.75078987	F(4, 18) =	8.80
Residual	1.53578359	18	.08532131	Prob > F =	0.0004
				R-squared =	0.6616
				Adj R-squared =	0.5865
Total	4.53894307	22	.206315594	Root MSE =	.2921

lnSouthwestBo~r	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
lnpercapitawage	-2.188729	.9301873	-2.35	0.030	-4.14298 - .2344783
lntransfer	.7094383	.4121581	1.72	0.102	-.1564737 1.57535
lnpop	-6.680224	2.188365	-3.05	0.007	-11.27781 -2.082639
lnUnmplRate	.0470617	.4825075	0.10	0.923	-.9666491 1.060772
_cons	115.4446	34.8169	3.32	0.004	42.29704 188.5922

(no endogenous regressors)

²⁸ The model is based on Ehrlich's economic model of crime.

The empirical analysis of the preceding discussion of the potential relationship between employment opportunities and crime rate. The analysis uses data Mexico and U.S. the 33-year period from 1980 to 2012, controlling for fixed and time effects. It uses an IV estimation. In all specifications and regressions, every variable is expressed in logs. It attempts to answer a key question about the simultaneous, but not always similar, trends of illegal migration and the macroeconomic variables: whether Ehrlich's economic model reflects reality. It should be noted that wages are analysed with a fixed-effects estimation.

As the regression above illustrates when wages increase the illegal immigration decrease. In difference, when unemployment rate increases the illegal migration will increase.

Chapter 11 – Discussion / Implementation / Limitations / Further Research

11.1 Discussion

The key point of this study is to show that immigration and refugees could help the European Union from discouraging demographics. Certainly, political leaders could not ignore voting behavior, as we have shown in the previous analysis, and move towards a truly reformed economic policy.

The mass media coverage of the refugee crisis has undoubtedly had a strong effect on the shift of individual voters to vote for far-right and the economic crisis offered far-right political leaders the opportunity to use the refugee crisis as the main cause for social and economic insecurity.

Population aging and most importantly immigration in almost all European countries call for a careful assessment of the prevailing demographic changes and new policy recommendations since the present policies showed discouraging outcomes.

Aging economies the monetary authority needs to adjust her policy and set interest rates higher than the ones under no aging. This is necessary in order to keep private incentives in equilibrium and avoid suboptimal choices. However, an exogenous shock in the youthful mass-exogenous immigration of an aging economy limits the need for monetary policy intervention relative to an aging only economy. This is due to the increased savings that young immigrants generate, which work as a buffer stock for old-age transfers reducing the fiscal burden.

11.2 Implication

The preceding analysis focused on the equilibrium mechanism through which immigration affect economic stability. In particular, it examined the effects of immigration on economic stability, using changes in the interest rate.

Further analysis must attempt to investigate such as, if the optimal policies change in the presence of endogenous survival probabilities that depend on the overall health status of an economy. Future studies could focus if optimal policies change in

the presence of endogenous immigration and self-selection of destination countries. Finally, the question which arises is, should monetary authorities take into account the leverage of pension funds when setting their policy?

The part of the thesis assumes that there is total integration of the mass immigrants into the labor market, i.e., all immigrants get a job and contribute to sustain the older generation. This is clearly wishful thinking. A rigorous analysis of the labor market equilibrium is necessary. What type of immigrants are coming into Europe? Low skill, high skill? Are they complement or substitutes to domestic workers? Are they a good match for the existing labor market? What about cultural barriers such as language and work ethics?

The model implicitly assumes a Ponzi game, current workers pay the pensions of older retirees. This can only continue with greater and greater immigration influx. So, looking ahead the next 50 or 100 years, this study does not support that countries with low population growth such as Greece, Spain and Italy will have their native population replaced by immigrants.

11.3 Restrictions – Limitations

During the research - from data collection and model development to policy analysis - there were several limitations. Our intention was to eliminate them, knowing that the present topic is multifactorial. Although we tried to address most of the limitations, some still existed. In particular, the limitations that were addressed in this thesis were as follows:

1. Migration has the peculiarity of separating the illegal from the legal. As there are recorded data only for legal migrants, this paper does not take into account the number of illegal migrants in the EU countries when analyzing the data.
2. As the research analyses human behavior, such as voting intention, it does not consider human factors that cannot be determined.

11.4 Proposal for further research

A further study could integrate perspectives from economics, sociology, and innovation management. Interdisciplinary research will aim to investigate how economic and social policies frame the institutional conditions for reducing inequalities and increase radical innovation in terms of refugee integration in labor market. Institutions can be defined as ‘the rules of the game in a society [or] the humanly devised constraints that shape (North, 1990), and therefore economic and social effects of immigration should be studied in tandem. Wage inequalities could play a central part in this research as institutional changes and technological developments both affect the economic and political system (Card and DiNardo, 2002).

In terms of the rate of innovation, a state is able to generate novelty when the polity and economic conditions create a strong layer in which employees and employers are able to move without be threaten by the “new labor force”. An interesting research will therefore demonstrate the crucial relationship between the labour market structure, social protection and the rate of innovation.

11.4.1 Research Questions

1. In what ways do wage inequalities affect the rate of innovation in liberal and coordinated market economies?

Using the Varieties of Capitalism (VoC) framework developed by Hall and Soskice (2001) as the terrain of the pyramid basis, the primary research question is whether a coordinated market economy is able to produce radical innovation. In other words, is an industrial democratic economy with a close relationship between institutions and (bank-based) markets sufficiently capable of creating radical innovation in response to varying technological change and refugee integration? This leads to a further crucial question: what is the key feature of the economic effects when a liberal economy turns into a coordinated one?

2. In what ways does social protection moderate the relationship between labour market institutions and the rate of innovation in liberal and coordinated market economies?

One of the aims of Franklin D. Roosevelt was to expand public social protection in the USA. However, he was concerned that the expansion of social protection would produce undesired effects, such as an increase in pension payouts in order to win votes. He was therefore prevented from carrying out his plan by his fear of its harmful impact on fiscal capacities (Mahoney & Thelen, 2001). As a result, social protection was vulnerable to challenge and had a regressive effect on activities such as the payment of benefits. However, an employer is willing to invest in a firm as long it guarantees protection, while the shape of social protection is essential for market choice and national competitiveness in global markets (Estevez-Abe, Iversen and Soskice, 2001). An interesting outcome of this research is that the moderating effect of social protection on the relationship between labour market institutions, innovation rate and refugee integration is associated with various type of capitalism.

3. What is the influence of education policies on wage inequalities, on radical innovation and on refugee integration within an economy?

Hall and Thelen (2008:8) argue that skill formation plays a central role in political economies which are characterized by democracy. They further argue that vocational training institutions form a promising strategy promoting economic welfare while the competition between firms for skilled workers changes the forces of production (Bardhan, 1987). These forces therefore change the industrial environment. The question which then arises is whether this system of vocational training contributes to a reduction in the wage inequalities which arise from educational inequalities, due to increasing technological changes and the reduction in human capital, or whether, it creates a more unstable basis for potential employees.

4. In what ways does social conflict moderate the relationship between labour market institutions, the rate of innovation and refugee integration in liberal and coordinated market economies?

According to Marx (1975) all stratified societies are divided into a ruling class and a subject class. The former controls the forces of production and exploits the latter, triggering an inevitable conflict between them. Changes in the forces of production due to technological development have a strong effect on the structure of labour and ultimately, alter labour relations. Marx (1975) further argues that if these relationships

act as ‘fettters’ on the workers, this will lead to social revolution and an increase in conflict between the two classes. Williamson (1981) argues that societies displaying aggressive conflict increase the transaction costs of economic enterprises with the costs of policing and security services, among others. Since the transaction costs are an essential element of growth (Coase 1960), as long as these costs are increased, the economic performance of a state declines and is likely to diminish any advantage on technological changes. Varieties Of Capitalism theory shows weakness on the existence of conflict (Howell 2003). One of the weaknesses of the VoC theory is the fact that exclude social conflict from the analysis conflict (Howell 2003), which is an important theoretical gap addressed in this study.

5. How vulnerable are the different types of capitalist economy to a resurgence of economic crisis?

The European sovereign debt crisis of 2009 requires us to determine the consequences of this crisis for institutions, and ultimately to clarify whether an economic system characterised by competitive market actions (LME) is more resilient than one with non-market relations (CME). This research question results from a reading of Streeck’s (1989) analysis of the ways in which the crisis in the early 1980s affected the liberal and coordinated markets of the USA and Germany respectively. Furthermore, this question could lead to further research, such as into whether exogenous change, such as crisis or refugee flows, or change through the polity or market, has a stronger effect on institutional changes.

11.4.2 Data Collection

The present proposal takes into consideration the empirical study of Antonelli and Fassio (2013) which, in part, uses Research & Development (R&D) as an essential indicator for rate of innovation. They integrated the OECD data for 24 countries in the period between 1990 and 2007. In contrast, the present analysis aims to integrate the OECD data for 28 countries in the period from 1984 to 2014 (see table 10 in Appendix). The countries will be categorised according to whether they are bank-based economies, in order to give robust results and efficient interpretations The reason for collecting and

analysing data based on the two categories proposed above instead of LME and CME is because there are countries that do not fit well to the current VoC framework.

In order to verify the validity of the data, use will be made of the databases of the Workplace Employment Relations Survey and the OECD STAN. Among challenges to the research will be the aggregation of company-level statistics and the examination of the variation between the heterogeneity of individuals which highlights the unobserved effects influencing each dependent variable.

11.4.3 Methodology

Within the empirical analysis, the investigation will use Stata. The empirical model will include a broad spectrum of social, financial, and labour market independent variables, while R&D is used as the dependent variable. It is proposed to measure R&D using industry patents (Taylor, 2004).

The following equation illustrates the empirical model that will enable the formulated research questions to be justified:

$$\begin{aligned}\ln(R\&D_{it}) = & \alpha + \beta(WA_{it}) + \gamma(EP_{it}) + \delta(CB_{it}) + \zeta(UNI_{it}) + \theta(NUN_{it}) \\ & + \kappa(UB_{it}) + \lambda(JC_{it}) + \mu(GDP_{it}) + \nu(UR_{it}) + \pi(EXP_{it}) + \rho(CF) \\ & + \varepsilon\end{aligned}$$

In this equation, WA, EP and CB represent aspects of labour market regulation: respectively, the aggregate wage for each country i at time t , employment protection, and collective bargaining varying between countries. In addition, the social aspect is covered by UB, unemployment protection for a country i at time t ; and CF, which signifies conflict within countries. The training system is illustrated by UNI and NUN, respectively university graduates and graduates of occupational training systems. JC indicates job creation within a specific country at a specific time. The financial system is represented by GDP, the gross domestic product for country i at time t , while UR represents the level of unemployment rate across countries at time t . Finally, in order to demonstrate the importance of openness for the rate of innovation, EXP represents exports from each country at time t . There are clearly many different possible correlations between these aspects of society and rate of innovation. However,

according to innovation theory, when the economic performance of a country improves, then the country is more capable of technological change and is more open to novelty.

11.4.3.1 Measurement of wage inequality

The classic measure of inequality is the Gini coefficient, developed in 1912 by Corrado Gini. It is a statistical dispersion that seeks to illustrate the income distribution of a country's inhabitants. A Gini coefficient uses values from 0 to 1, where 0 indicates perfect equality and 1 denotes maximal inequality. Most studies based on VoC use this measure of inequality (Hall & Gingerich, 2009; Campbell & Pedersen, 2007). However, in order to ensure the reliability of the Gini results in this thesis, the Theil Index will be used to verify the efficiency of the Gini Index. This is an alternative method based on the work of Henri Theil (1967, 1972) that measures economic inequality in a manner derived from the theory of information (Galbraith and Berner, 2001).

The empirical approach is a cross-section analysis which controls for national fixed effects and trends over time. The variation within countries does not allow the use of a modest regression of Pooled OLS. Fixed-effects estimation takes into account the heterogeneity of individuals and highlights the unobserved effects that influence the dependent variable (Wooldridge 2010). This empirical model is divided into a group of models, in order to avoid the problem of multicollinearity. In addition, the model will be split into two sub-models (high-tech and medium tech in different sectors of manufacturing production) in order to distinguish between radical and incremental innovation.

11.4.3.2 Gini Index

$$G = 1 - \sum_{k=1}^n (X_{\varphi} - X_{\varphi}^{-1})(Y_{\varphi} + Y_{\varphi}^{-1}) ,$$

where X_{φ} is the cumulated proportion of the population variable for $\varphi=0, \dots, n$ with $X_0=0$, $X_n=1$ and Y_{φ} is the cumulated proportion of the income variable for $\varphi=0, \dots, n$ with $Y_0=0$, $Y_n=1$. A value of G equal to 1 (100%) represent a maximal inequality while a value of 0 indicates perfect equality among people.

Based on the Lorenz curve, X and Y represent points on the curve.

11.4.3.3 Theil Index

$$T = \frac{1}{n} \sum_{p=1}^n \frac{y_u}{\mu_y} \log \left(\frac{y_u}{\mu_y} \right) \quad T \in [0, \log n]$$

where n is the number of individuals, y_u is the income of the individual indexed by u and μ_y is the population's average income. The T measures an entropic distance of population location distant from an ideal egalitarian state with equal distribution of income.

11.4.4 Anticipated Findings

The intention of this research is to investigate the effect of institutional changes, social conditions, and technological development impact on the rate of innovation, in terms of refugee integration. It will emphasise the advantages of radical innovation within the framework of VoC, while also accentuating the influence of wage inequalities on the rate of innovation. This study aims to scrutinize under what conditions a decrease of wage inequalities and the refugee integration can increase the innovation rate.

However, the terrain of VoC does not allow an investigation into, and comparison of, the diversity of economic and political systems within the European Union. That is because Hall and Soskice (2001) categorise the Mediterranean market economies as a distinct group of countries.²⁹ Taylor (2004) combined the two ideal types of capitalism shedding light on these limitations of VoC theory. A potential subject of further research is an analysis of the ability of such countries to generate radical innovation and refugee integration while subject to institutional change.

In addition, the present study will contribute to VoC in its attempts to introduce the significance of conflict into the framework. Furthermore, it will attempt to show how the alteration of a liberal economy into a coordinated one, subject to industrial relations and skill formation, could be possible without it losing its technological

²⁹. Many countries, such as France, Greece, Italy, Portugal, Spain and Turkey, do not qualify for VoC.

competence. This contribution to research would be worthwhile, as the shift from a coordinated market economy to a liberal economy is a common feature of VoC, while the reverse is not. In any case, VoC provides a valuable terrain that future research could use to underpin and develop new actions.

11.5 Conclusion – Discussion

The first question posed in this paper was addressed by utilize a unique dataset that we have put together which records daily refugee arrivals on the Greek Islands of Lesbos, Samos, Chios, Leros and Kos between 1st January 2016 and 28th April 2019. The statistical analysis of the dataset provides statistically significant indirect correlation between voting intentions for far-right parties and daily refugee flows, via mass media. Further statistical analysis of the survey findings shows that the European Citizens voting intention for far-right parties increases by approximately 1.8% for every 10% increase in accumulative refugee flows to the Greek islands.

Based on these data, it can be concluded that mass media affect the human choices and as McCombs and Shaw quoted in 1972, media can modify consciousness.

Analysing a new approach of the economic policy in ageing economies, based on immigrant integration, Europe could use refugee flows as a management tool to prevent fiscal and monetary restrictions in favor of economic stability.

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Appendix I

Table 10: Countries Specifications and Sources (Mass Media and Far-Right Parties)

Country	Description
Austria	Kronen Zeitung Newspaper - 2017; 732,000 copies circulated, 29.54% of the national daily newspaper circulation. Far-Right party: FPÖ
Belgium	Der Standaard Newspaper - 2017; 100.000 copies circulated, 23.47% of the national daily newspaper circulation. Far-Right party: VI. Belang.
Bulgaria	Trud Newspaper - 2014; 50,000 copies circulated, 27.70% of the national daily newspaper circulation. Far-Right party: Coalition United Patriots (IMRO +NFSB+ATTACK)
Croatia	24Sata Newspaper - 2015; 97.000 copies circulated, 42.36% of the total national daily newspaper circulation. Far-Right party: Far-right party no significant rates.
Cyprus	Phileleftheros Newspaper - 2016; 17.000 copies circulated, 25% of the national daily newspaper circulation. Far-Right party: ELAM
Czech Republic	Mlada Fronta dnes Newspaper - 2017; 135.000 copies circulated, 32.87% of the national daily newspaper circulation. Far-Right party: ANO
Denmark	Politiken Newspaper - 2017; 275,000 copies circulated, 22.44% of the national daily newspaper circulation. Far-Right party: DPP
Estonia	Ohtulet Newspaper - 2018; 45.800 copies circulated, 40.97% of the national daily newspaper circulation. Far-Right party: EKRE
Finland	Helsingin Sanomat Newspaper - 2017; 325.000 copies circulated, 24.28% of the national daily newspaper circulation. Far-Right party: SIN
France	Quest France Newspaper - 2017; 721.000 copies circulated, 26.28% of the national daily newspaper circulation. Far-Right party: FN
Germany	Bild Newspaper - 2017; 2.350.000 copies circulated, 51.30% of the national daily newspaper circulation. Far-Right party: AfD
Greece	To Vima Newspaper - 2016; 63,310 copies circulated, 45,37% of the national daily newspaper circulation. Far-Right party: Golden Dawn.
Hungary	Népszabadság Newspaper - 2016; 58.597 copies circulated, 34.34% of the national daily newspaper circulation. Far-Right party: Jobbik

Ireland	The Irish Independent Newspaper - 2018; 95.000 copies circulated, 43.12% of the national daily newspaper circulation. Far-Right party: No significance
Italy	Corriere della Sera Newspaper - 2018; 305.000 copies circulated, 24.09% of the national daily newspaper circulation. Far-Right party: Lega
Latvia	Diena Newspaper - 2018; 31.000 copies circulated, 35.35% of the national daily newspaper circulation. Far-Right party: NA
Lithuania	Lietuvos Rytas Newspaper - 2017; 28.650 copies circulated, 33.12% of the national daily newspaper circulation. Far-Right party: TT
Luxembourg	Luxemburger Wort Newspaper - 2017, 63.000 copies circulated, 67.51% of the national daily newspaper circulation. Far-Right party: There is no significant.
Malta	Times of Malta Newspaper - 2017; 35.000 copies circulated, 68.63% of the national daily newspaper circulation. Far-Right party: MENF
Netherlands	De Telegraaf Newspaper - 2017; 382.000 copies circulated, 21.25% of the national daily newspaper circulation. Far-Right party: Party of Freedom
Poland	Fakt Newspaper - 2017; 261.400 copies circulated, 36.41% of the national daily newspaper circulation. Far-Right party: Law & Justice
Portugal	Correio de Manha Newspaper - 2017; 130.000 copies circulated, 43.41% of the national daily newspaper circulation. Far-Right party: No significant
Romania	Romania Libera Newspaper - 2017; 10.800 copies circulated, 30.68% of the national daily newspaper circulation. Far-Right party: No significant
Slovakia	Pravda Newspaper - 2017; 38.000 copies circulated, 35.27% of the national daily newspaper circulation. Far-Right party: SNS
Slovenia	Delo Newspaper - 2017; 32.551 copies circulated, 36.61% of the national daily newspaper circulation. Far-Right party: FN
Spain	El Pais Newspaper - 2017; 175.000 copies circulated, 16.25% of the national daily newspaper circulation. Far-Right party: Vox
Sweden	Svenska Dagbladet Newspaper - 2017; 155.800 copies circulated, 33.39% of the national daily newspaper circulation. Far-Right party: SD
UK	The Sun Newspaper - 2017; 1.545.600 copies circulated, 24,21% of the national daily newspaper circulation. Far-Right party: UPIK

Appendix II

Consider a Taylor rule that depends on past rules of the form:

$$(1) \quad R_t^N = A(i_{t-1})$$

Where $A: R_+ \rightarrow \left[\frac{n_y}{n_0}, +\infty\right)$ has the usual property to overreact near the inflation target i^* . Then, we can study the effect of these rules on a dynamically efficient steady state equilibrium in the presence of population aging and possibly immigration. Suppose that there exists a dynamically efficient steady state $R_2^*(.) > \frac{n_y}{n_0}$, which is supported by some policy for which R_{MP}^* is an appropriate nominal interest rate target, and $i^* = R_{MP}^*/R_2^*(.)$ is the monetary authority's inflation target under commitment.

If we substitute the Taylor rule (6.3.1) into the market clearing condition (6.2.22) results the

following monetary policy rule:

$$R_{MP} = \frac{\varphi n_0 i}{Z(\pi) - \beta \frac{A(i) n_y^3}{i n_0}}$$

$$(2) \quad Z(\pi) = (1 - z) \left(1 + \beta \frac{n_y}{n_0}\right) - \varphi n_y^2 - \beta n_y \tau$$

This is a dynamic system that has a unique steady state (R_{MP}^*, i^*) .³⁰ In other words, the monetary authority can achieve an inflation target i^* if and only if she picks a nominal interest rate R_{MP}^* , which in turn over-reacts according to the Taylor rule (1).

³⁰ The conditions outlined in Azariadis and Lam (2003) go through here as well.