

Economics School of Louvain - ESL

Economics School of Namur - ESN

The EU emergency trust fund for Africa: an approach of development aid increasingly linked to the EU's migration policy

Author : Margaux Clarr

Thesis Director : Jean François Maystadt

Thesis Reader : Jean François Maystadt

Academic Year 2021-2022

Master in Economics – 60 credits

Acknowledgments

I would first like to thank my supervisor Jean François Maystadt for his great help and availability throughout the year.

I would also like to thank the teachers at UCLouvain that enabled me to learn a lot about the field of economics and more specifically development economics during this year of master.

Contents

1	Introduction	3
2	Brief review of the literature	5
3	The migration topic at the core of the European development policy. Is 2015 a turning point ?	6
3.1	Documents and method used	7
3.2	Text analysis: Frequency of the migration topic	8
3.3	Text Analysis: Change of tone after 2015	13
3.4	Limits of the analysis	18
4	Links between aid and migration, implementation of a gravity model	19
4.1	Data	19
4.1.1	Bilateral Aid data from EU countries	19
4.1.2	European Union Aid data	20
4.2	Model and econometric specification	21
4.3	Results with bilateral aid data	24
4.3.1	Asylum Seekers	24
4.3.2	Migrants	28
4.4	Results with the European Union aid data	31
4.4.1	Asylum Seekers	31
4.4.2	Migrants	33
5	Discussion	36
6	Conclusion	38
7	Appendix	39
	References	58

1 Introduction

In 2015, more than 1,3 million refugees and migrants arrived on European shores. This unprecedented influx of arrivals led to a migration crisis in the European Union that dominated the news headlines and triggered fierce political debates but also anti immigration protests all around Europe. It is in this context that, in November 2015, European and African heads of government met in Valletta with the goal of finding a common strategy to address migration. Following this summit, the European Union Trust Fund for Africa (EUTF) was launched with the objective of "*delivering an integrated and coordinated response to the diverse causes of instability, irregular migration and forced displacement*"¹. Alongside the creation of the fund, heads of governments agreed on the Valletta Action Plan which was designed to:

1. Address the root causes of irregular migration and forced displacement.
2. Enhance cooperation on legal migration and mobility.
3. Reinforce the protection of migrants and asylum seekers.
4. Prevent and fight irregular migration, migrant smuggling, human trafficking.
5. Work more closely to improve cooperation on return, readmission and reintegration actions.

Initially, the fund was designed as a financial instrument to integrate migration policies, foreign policies and partnerships for development. It has four main objectives that are: "*greater economic and employment opportunities, strengthening the resilience of communities, improve migration management and improve governance and the prevention of conflict*"². A 4,8 million euro budget was approved for a duration of five years, funded at 90% by Official Development Assistance (ODA) money. The idea behind addressing the root causes of migration was to tackle issues that are part of the development framework like addressing poverty, improving governance, improving security... Even though with the creation of the EUTF migration policy is integrated in the development aid framework it seems that it is to attain objectives that are usually part of development policies.

Yet, since 2017, many critics have been addressed to the fund. It was argued, by the European court of auditors among others, that the EUTF was not governed by a clear and coherent policy. Another concern raised by NGOs was that it was used as a way to promote Europe's own domestic political priorities rather than a coherent process of development. As a response, the commission defined a narrower list of priorities to direct their operational committee in charge of conceiving the projects funded by the EUTF.

¹https://ec.europa.eu/trustfundforafrica/content/about_en

²https://ec.europa.eu/trustfundforafrica/index_en

However, the critics have not stopped and there is now again a concern that development aid is used solely to promote the European Union's migration policy. This concern is addressed in several publications, and notably in an article from the migration policy institute³ that examines how the European Union used development assistance aid in Africa to promote its external migration policy. The article accuses the EUTF of having forgotten the root causes of migration to focus on other objectives. Since its inception, one third of the funding has been dedicated to improving the management of migration and that objective is since 2018 the most funded one. The institute also adds that it is the only objective with projects in all countries where the EUTF is operating. They also calculated that more than 10 percent of the funding of the objective to improve governance has in reality been used for migration management through projects like technical trainings for border staff or enhancing surveillance cooperation.

Another concern is that aid coming from the EUTF is increasingly used as a leverage to pressure African countries to cooperate with European demands to fight irregular immigration or accelerate the return of migrants. A report published by Oxfam (2020) states that since the creation of the fund, the adoption of some projects has been tied to political discussions on migration. For countries like Ethiopia, Morocco or Niger some projects have been approved after some progresses had been made on agreements concerning returns of migrants.

These articles portray the EUTF as a tool to implement the migration policy of the European Union through development aid. The creation of the EUTF seems to illustrate that 2015 constitutes a turning point in the way the development and migration policies of the European Union interact and that they are more and more integrated. This thesis will try to investigate if 2015 represents indeed a turning point in the way the development policy towards African countries is implemented and if it is increasingly influenced by the migration policy of the European Union. In order to do so, after a review of the literature on the subject, a text analysis of official reports on development published by the European Union from 2010 to 2020 will be presented to see how the way the migration topic is presented evolves over time and if a change can be observed after 2015. Then, a gravity model of migration will be implemented in order to see how the numbers of asylum seekers and migrants are influenced by the amount of ODA given by European countries and by the European institutions. This will enable to study the patterns between aid and migration flows and to see if a change in the way both flows interact can be observed after 2015.

The rest of the thesis is organized as follows: Section 2 reviews the literature on the subject, Section 3 presents the text analysis, Section 4 describes the gravity model that will be implemented and presents the results, Section 5 is a discussion on the model presented and Section 6 concludes the thesis.

³<https://www.migrationpolicy.org/article/europe-migration-africa-eutf>

2 Brief review of the literature

The topic of the thesis covers two main subjects of the literature, the determinants of foreign aid for donor countries and the links between migration and aid.

The literature has shown that there are many factors driving aid flows and that the allocation of such flows can also depend on strategic concerns. Qian (2015) provides an exhaustive list of possible reasons that have been studied over the years. For example, she mentions studies proving that it was not a humanitarian criteria that influenced the amount of aid given by the U.K, the U.S and France during the war but the promotion of trade and policy concerns (McKinlay & Little, 1977). Comparably, Meernik et al. (1998) show that aid distributed by the US after the Cold War was influenced by ideological motivations whereas before it was guided by security concerns. Schraeder et al. (1998) studied the different reasons behind the allocation of aid to Sub-Saharan Africa countries between 1980 and 1989 and found that it was often for reasons that were not related to the economic needs of the recipient countries. For instance Japan would favor aid to countries which were economically important, like countries with raw materials or an important exportation market. Sweden would advantage countries with a socialist and France would give more aid to French speaking countries.

Aid is also associated to political stakes. Alesina and Dollar (2000) show that OECD countries tend to give more aid to countries that share former colonial ties with them and that the amount distributed increases with the length of the colonization. They also show that the amount of aid is positively linked to the number of votes from the recipient country that are similar to those of the donor country at the General Assembly of the United Nations. Similarly, Faye and Niehaus (2012) show that donors give more aid during election years to recipient countries which are politically aligned with them than to others.

Finally, aid can also be motivated by the politic situation in the donor country. Eisensee and Stromberg (2007) show that the amount of aid given following a natural disaster is negatively influenced by the occurrence of other events in the news that have an important press coverage, like the O.J Simpson trial, and are not correlated with natural disasters. For the authors the explanation is that the government will be more likely to give aid to a natural disaster with more press coverage because the said event will be read by lots of voters and it is in their advantage for reelection concerns to focus on news that the voters are aware of.

This shows that there are many strategic and political concerns surrounding the allocation of aid. Hence, it would be coherent that the migration strategy of a donor country or institutions would also be taken into account when allocating aid. Dreher (2019) shows that foreign aid is often viewed as a tool for politicians to reduce flows of refugees. Indeed, aid provides immediate relief and development aid is seen as fighting the root causes of migration. The author explains that more and more politicians from donor countries tie the amount of aid given to recipient countries with their willingness to take back some of their migrants.

He states that this opinion has become more and more explicit, when looking for example at statements made by Austrian and German members of government but also when looking at statements from the European Commission. In 2016, the then German Vice Chancellor Sigmar Gabriel stated that "*It cannot be that you take the aid, but not your own citizens*"⁴.

The second broad range of literature that is interesting for this thesis is the one focusing on the relationship between aid and migration flows and more specifically the impact of foreign aid on migration flows. There are only few studies on this subject so far and no general rules can be derived from these studies (Parsons and Winters, (2014)). However, it has been shown that aid affects some determinants of migration, the most important one being income in recipient countries. The traditional literature on this subject considers models such as the push pull model of migration and states that income in the recipient countries and migration are inversely related (Lee, 1966). But more recently this opinion has been reconsidered. Clemens (2014) for instance shows that for poor countries, migration increases with economic development until these countries become upper middle income countries. This is explained by the fact that for poor households an increase in income will enable them to cover the costs of migration that they could not afford otherwise. However, this implies that foreign aid enables to increase income in the recipient countries. So far, no consensus has been found on this question. The studies that find positive impact have underline the small size of the impact (Clemens et al. (2012)). Clemens et al. find that in order to increase growth by one percentage point per year the amount of aid required would be equivalent to 10% of GDP for the said country which is way superior than the amount of aid that is distributed.

Another issue that is forgotten when considering whether aid is positively related to migration is that aid can affect well being in other ways than just the monetary one. Dustmann and Okatenko (2014) show that aid, by increasing the quality of public services and infrastructures, impacts migration decisions more than the wealth of the household.

From these various studies, it appears that the effect of aid on migration is still a source of debate and that the results found are not always the same. We will come back on this literature in Section 4 when presenting the results of the model implemented in this thesis.

3 The migration topic at the core of the European development policy. Is 2015 a turning point ?

The goal of this section is to investigate whether a change in the way the migration topic is handled is observable in the official documents on aid published by the European Union. To do so, basics of natural language processing will be used to provide a text analysis of those

⁴See <http://www.zeit.de/politik/deutschland/2016-01/sigmar-gabriel-entwicklungshilfe-fluechtlingskrise-nordafrika>

official documents. The analysis will first consist in observing the frequency of the migration topic and will then try to go deeper and investigate if the tone when mentioning migration evolves over the years.

3.1 Documents and method used

This section will focus on the analysis of the annual reports published from 2010 to 2020 by the Directorate-General for International Partnerships (DG INTPA) which is in charge of development and cooperation. This DG, which was created on January 3rd 2011 following the merger of the DGs Europaïd (AIDCO) and Development (DEV) under the name DG International Cooperation and Development (DEVCO) became DG International Partnerships (INTPA) in 2021. The reason for this change of name being the will to emphasize on the DG's focus on international partnerships and to move away from a "donor-recipient" relation to a "partnership of equals" between developing countries and the European Union⁵. As mentioned, the purpose of the DG is to formulate the European Union's development and aid policies abroad with the ultimate goal to "*reduce poverty, ensure sustainable development, promote democracy, human rights, and the rule of law across the world*"⁶. The DG covers broad areas of intervention such as: trade and regional integration, environment, infrastructure, water and energy, rural development, governance and democracy, peace and security, human development, social cohesion and employment. It seems therefore pertinent to choose to analyse reports from this entity as it is the one directly responsible for the implementation of the development policies of the European Union.

Each year the DG publishes reports entitled "*Annual Report on the European Union's development and external assistance policies*"⁷. These reports summarize the objectives of the directorate in terms of development aid. They present the context in which the development policy of the European Union was implemented for said year, what policy framework was followed, which projects were undertaken...

They were chosen for the analysis because they are published yearly from 2010 to 2020 and keep the same format throughout the years. All the reports start with an introduction explaining what happened during the year and what challenges were to overcome. This introduction gives an overview of the economic situation of developing countries, the situation in terms of reduction of poverty, unemployment, inequalities and other topics related to development. The introduction is followed by a first chapter explaining under which framework of policies is the European Union implementing its development programmes. This chapter summarizes all the proposals made by the commission during the year, the policy developments, the main guidelines developed... The section is concluded by a chapter presenting

⁵Reference to commissioner Urpilainen's mission letter: https://ec.europa.eu/commission/commissioners/sites/default/files/commissioner_mission_letters/mission-letter-urpilainen-2019-2024_en.pdf

⁶https://ec.europa.eu/info/departments/international-partnerships_en

⁷The reports are available at <https://op.europa.eu/en/web/general-publications/publications>

the outlook for the year to come. The reports then include two other sections. The first one gives a geographic overview of the main projects implemented. The second one presents a thematic overview of the programmes. The last section of the reports is focused on the monitoring and evaluations of projects. The fact that these reports are very similar in terms of plan across the years will be useful to detect a change of language or a change in the way the topic of migration is handled. It provides a coherent basis for the text analysis.

The text analysis was performed using Python. In order to process the data, a standard methodology was used (Gentzkow, Kelly, & Taddy, 2019). The reports were first transformed from pdf to text format⁸. Then, in order to analyse the reports, the natural language toolkit was installed. This toolkit contains programs and libraries in order to do statistical language processing. This allowed to split each report into lower case tokens i.e. it enabled to separate the texts in smaller units, in that case words. Finally, punctuation, numbers, web links and stop words were removed. This treatment of the reports will make it possible to study how the way the migration topic is handled changed over the years. First we will focus on the frequency of the word migration and other words related to the topic in the texts throughout the years. Then, we will go a bit deeper and try to see if a change in the way the topic is presented is noticeable.

3.2 Text analysis: Frequency of the migration topic

Once the texts were processed, the first step in order to see if the speech concerning migration changed over the years was to count, via Python, the number of times the term migration appears each year in the reports. This allows to get a first insight on whether the topic of migration gained in importance throughout the years and especially after 2015. Figure 1 clearly shows that after 2015, the term is much more frequent in the reports. Indeed, where in 2014 the term migration only appears 47 times, it goes up to 92 in 2015 and even higher in 2016 and 2017. This clearly suggests a change in the way the topic is handled after 2015 and would indicate that the topic of migration is gaining in importance.

⁸This task was performed using the Textract Python Library

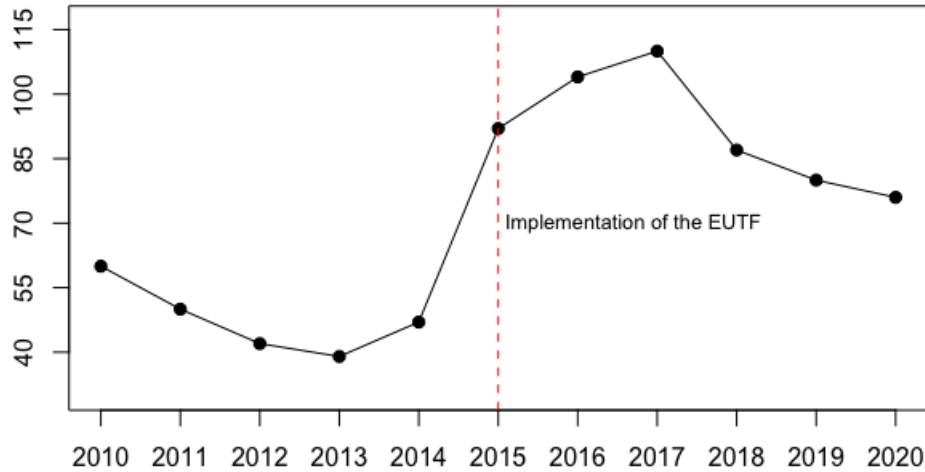


Figure 1: Occurrence of the term migration in the annual reports of DG INTPA

In order to go a bit deeper in the analysis, the frequency of other words related to migration was studied. The focus was first set on words related to the term migration. All words related to the term migration were selected from the list of key migration terms provided by the international organization of migration⁹. The words chosen were the following: asylum, emigration, immigrant, immigration, displacement, displaced, migrant, refugee and irregular migration. Here again, as shown in Figure 2, there is a clear difference in the frequency of those words before and after 2015. Between 2010 and 2014, these words were only mentioned between 32 and 52 times per year whereas after 2015, they appear more than 124 times per year. The frequency more than doubled before and after 2015. This also tends to indicate that 2015 really marks a turn and that the topic becomes more in more present in the development policies of the European Union.

⁹<https://www.iom.int/key-migration-terms>

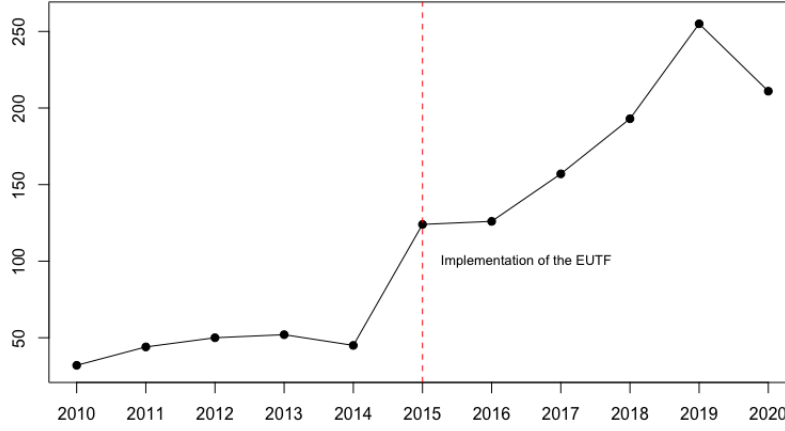


Figure 2: Occurrence of the terms related to migration in the annual reports of DG INTPA

It is also interesting to see which terms are more present after 2015 to get an idea on which topic the focus was set. After 2015, it appears that the term irregular migration, that was only appearing between 0 and 3 times before appears much more frequently, between 6 and 16 times. The same pattern is observable for the words refugee, displaced and migrant as shown in Figure 3.

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Asylum	8	7	8	6	2	9	9	7	10	8	12
Emigration	0	0	0	0	0	0	0	0	0	0	0
Immigrant	1	0	0	0	0	0	1	0	0	1	0
Immigration	1	0	1	0	0	0	0	0	0	1	0
Displacement/ Displaced	9	5	13	9	12	30	32	43	59	71	54
Migrant	5	9	2	6	7	12	13	33	34	48	45
Refugee	6	20	24	31	21	57	56	61	79	120	93
Irregular Migration	2	3	2	0	3	16	15	10	11	6	7
Total	32	44	50	52	45	124	126	157	193	255	211
Migration	60	50	42	39	47	92	104	110	87	80	76
Total with Migration	93	94	92	91	92	216	230	267	280	335	287

Figure 3: Evolution of the frequency of the terms related to migration in the annual reports of DG INTPA

In order to conclude this first stage of text analysis, I decided to study the frequency of vocabulary that encompasses broader topic such as border management, the reintegration of migrants and the management of migration flows. This enables to observe if not only the topic of migration, but the need to mitigate or control migration flows is more present over the years. The list of words selected was here again retrieved from the list of key migration terms from the international organization of migration. The words contained were

the following: removal, reintegration, work permit, non refoulement, migration management, migration governance, border management, border governance, migration crisis, assisted voluntary return and border. We notice the same discontinuity than for the two previous word counts starting from 2015. As observable in Figure 4, the frequency of those words more than doubles between 2014 and 2015 and reaches a peak in 2019 with the words from this list appearing 111 times in the report whereas they occur only 27 times in 2014.

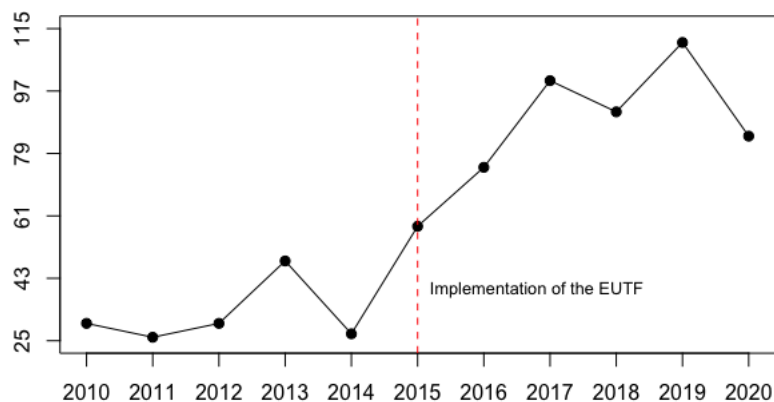


Figure 4: Occurrence of the terms related to migration management in the annual reports of DG INTPA

Finally, this last count of words allows to observe a slight change in the vocabulary used to handle the topic of migration. Indeed as shown in Figure 5, one can see that the term reintegration, that was barely present in the reports before 2015, appears more and more. It is not the only term related to the return of migrants that appears more frequently. The terms removal and assisted voluntary returns are also more present after 2015. The idea of the management of migration as part of the development aid policy also becomes more important. Indeed, the term migration management which was only mentioned between 0 and 3 times per year between 2010 and 2014 appears between 8 and 15 times after 2015. This again tends to indicate that there is a shift in the way the European Union consider its overall development policy framework and that the topic of migration and the way migration should be managed is gaining in importance.

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Removal	1	1	0	0	1	0	1	0	2	2	1
Reintegration	1	1	0	3	1	1	6	12	12	9	6
Work Permit	0	0	0	0	0	0	0	0	0	0	0
Non Refoulement	0	0	0	0	0	1	0	0	0	0	0
Migration Management	1	2	3	3	0	8	9	8	11	13	15
Migration Governance	0	0	0	0	0	0	0	2	0	1	1
Border Management	11	5	9	15	4	8	9	15	20	23	13
Border Governance	0	0	0	0	0	0	0	0	0	0	0
Migration Crisis	0	0	0	0	0	5	5	4	1	2	5
Assisted Voluntary Return	0	1	0	0	0	0	0	1	0	2	3
Border	16	16	18	27	21	35	45	58	45	59	40
Total	30	26	30	48	27	58	75	100	91	111	84
Migration	60	50	42	39	47	92	104	110	87	80	76
Total with Migration	90	76	72	87	74	150	179	210	178	191	160

Figure 5: Evolution of the frequency of the terms related to migration management in the annual reports of DG INTPA

Overall, this text analysis showed that the topic of migration is more and more incorporated after 2015 in the official reports of the European Union concerning development. As illustrated by Figure 6, the frequency of all the words that were the focus in the study more than doubles after 2015. It seems that 2015 really represents a turning point in the way migration is handled as part of the aid policy in the European Union.

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Migration	60	50	42	39	47	92	104	110	87	80	76
Migration Vocabulary	93	94	92	91	92	216	230	267	280	335	287
Migration Vocabulary (migration excl.)	32	44	50	52	45	124	126	157	193	255	211
Migration Management	90	76	72	87	74	150	179	210	178	191	160
Migration Management (migration excl.)	30	26	30	48	27	58	75	100	91	111	84
Total All Vocabulary	122	120	122	139	119	269	305	367	371	446	371

Figure 6: Evolution of the frequency of all the terms related to migration in the annual reports of DG INTPA

In order to check the robustness of these results, the same analysis was performed on the Annual Activity Reports of DG INTPA¹⁰. Those Annual Activity reports are also annual reports that keep the same format throughout the years and present the achievements and goals of the department as well as the resources used during the year to achieve those goals. These documents are only available from 2013 to 2020 but overall we can observe the same trend. The detailed results are presented in the appendix (Figure 24, Figure 25, Figure 26,

¹⁰The documents are available at https://ec.europa.eu/info/departments/international-partnerships_en

Figure 27, Figure 28). On average, we find that words related to migration are more present after 2015, with the exception of the year 2020 ((Figure 7). However, it is important to note that the annual activity report for the year 2020 was shorter than the others and mainly focused on the Covid crisis.

In those annual activity reports, one do not only observe that the theme of migration is more important but also that the vocabulary used tend to change over the years. Here we also observe that certain terms that were barely present before 2015 are introduced after. It is the case for expressions such as irregular migration that was only mentioned one time in 2013 and 2014 and is mentioned between 11 and 22 times between 2015 and 2019. We also observe the same pattern for the word reintegration and the expression migration management. This again tends to indicate that the management of migration and the organization of a potential return of migrants is a theme that becomes more and more present in the way the development policy of the European Union is developed.

Year	2013	2014	2015	2016	2017	2018	2019	2020
Migration	52	32	47	73	89	70	49	76
Migration Vocabulary	62	35	72	142	184	176	107	22
Migration Vocabulary (migration excl.)	10	3	25	69	95	106	58	15
Migration Management	114	43	54	90	119	97	64	8
Migration Management (migration excl.)	62	11	7	17	30	27	15	1
Total All Vocabulary	124	46	79	159	214	205	122	23

Figure 7: Evolution of the frequency of all the terms related to migration in the annual activity reports of DG INTPA

In conclusion, this text analysis and the checks showed not only that the theme of migration becomes more and more integrated in the official texts on development policy but also that it seems that the vocabulary used to talk about migration changed. This is showed by the increased use in the both types of reports studied of word like migration management, reintegration, irregular migration. It is important to note that this change in 2015 can not be explained by a change in commissioner or to the vote of a new global strategy and budget framework. Indeed, the multi annual financial frameworks of the European Union that set the amount of spending for each policy area and define the overall strategy framework for the European Union is negotiated every six years. The last multi annual frameworks cover the periods 2007-2013, 2014-2020 and 2021-2027. In addition to this, there was no change of commissioner in charge of development in 2015, since Andris Piebalgs was replaced by Neven Mimica in 2014 and Jutta Urpilainen the current comissioner at the head of DG INTPA was appointed in 2019.

3.3 Text Analysis: Change of tone after 2015

The first stage of the text analysis allowed to see that indeed since 2015 the topic of migration is more present in the way the development policy of the European Union is

presented. The increased presence of some vocabulary also tend to indicate that there is a change in how the migration topic wants to be handled as part of the Union development's policy. In this subsection, we will try to get one step further and see if we can observe other differences in the reports and eventually a change of tone concerning the migration topic.

First, all the reports were analysed, again via Python, in order to spot the 25 most frequent words in the texts. This was done in order to see if even though the migration topic is more mentioned over the years, it also becomes one of the main topic of the development policy framework. This analysis has been performed on both types of documents, the annual reports and the annual activity reports of DG INTPA. However, in both cases the most frequent words do not really change over the years. It seems that even though the theme migration is more mentioned, it does not become, at least in terms of word counting, the theme that takes the most important space. In the annual reports, the word migration or any related term do not even appear in the most 25 frequent words. In the annual activity reports, it only appears as the 18th most mentioned word in the 2017 report. The lists of the 25 most frequent words can be found in the appendix. As can be shown on Figure 8 and Figure 9, the most frequent words used in the reports are pretty similar over the years and general. They often refer to the European Union and topic that are part of the development goals like health, education, energy. The other most frequent words also refer to policy implementation and are words like budget, programme, project, management...

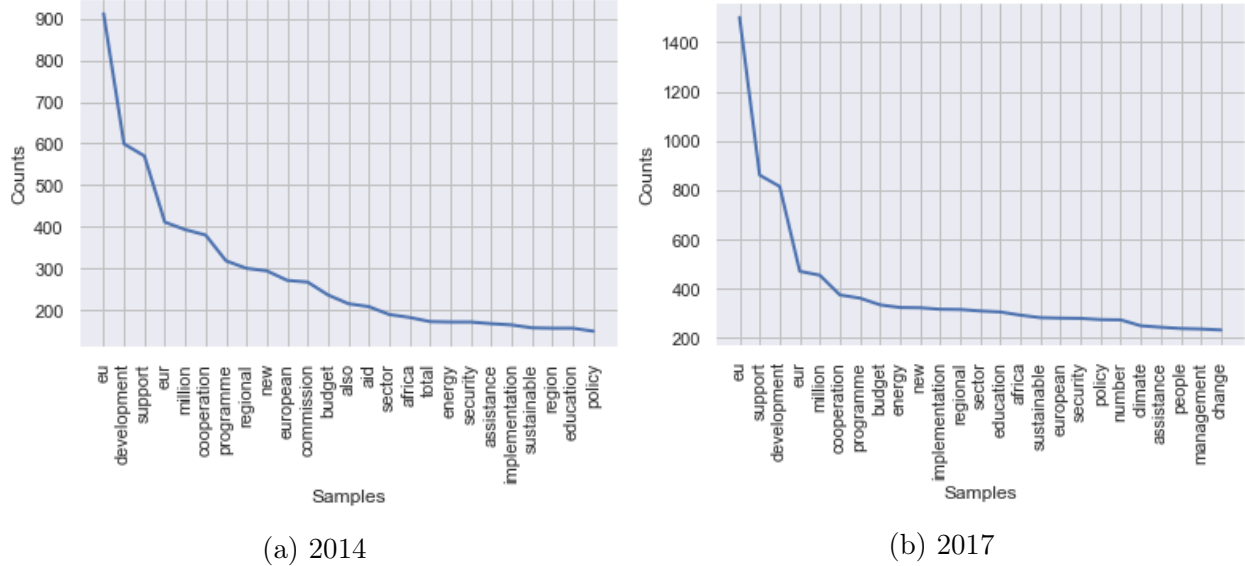


Figure 8: 25 most frequent words in the annual reports of DG INTPA

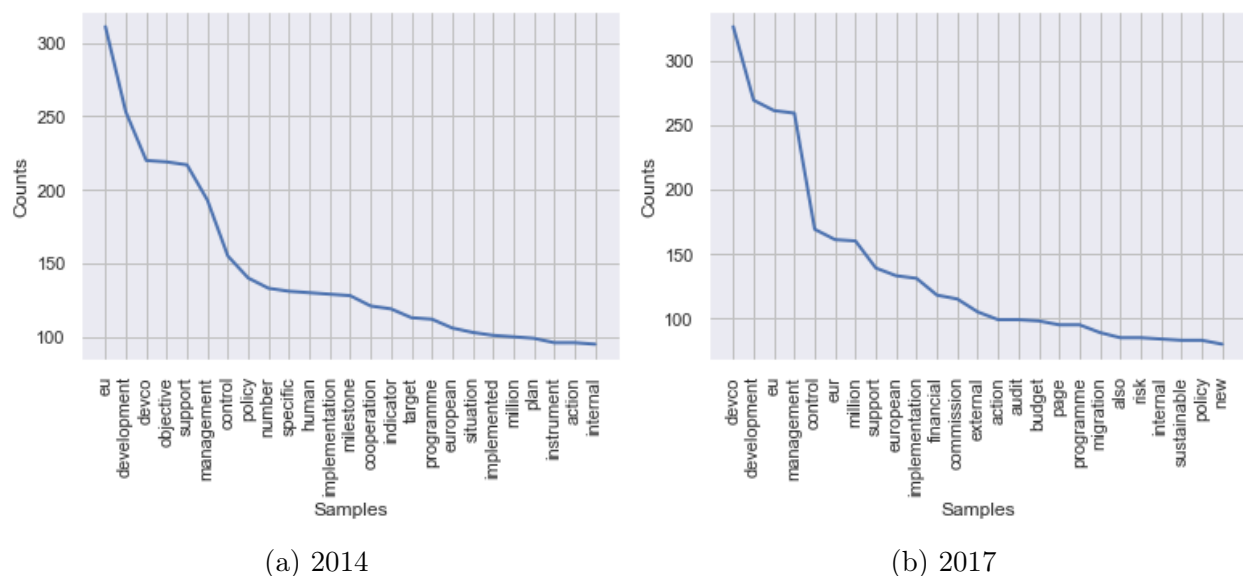
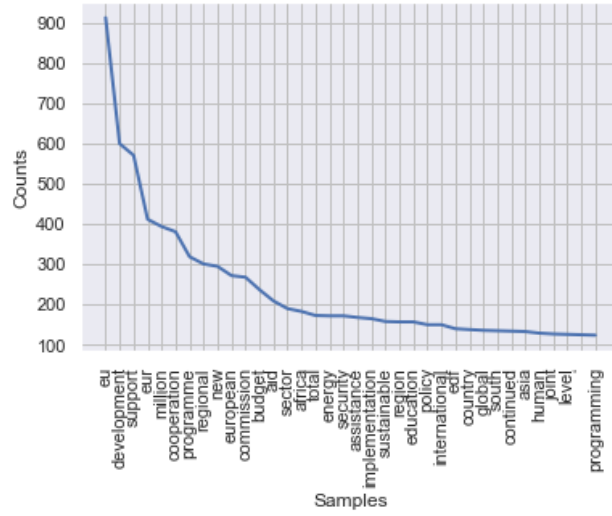
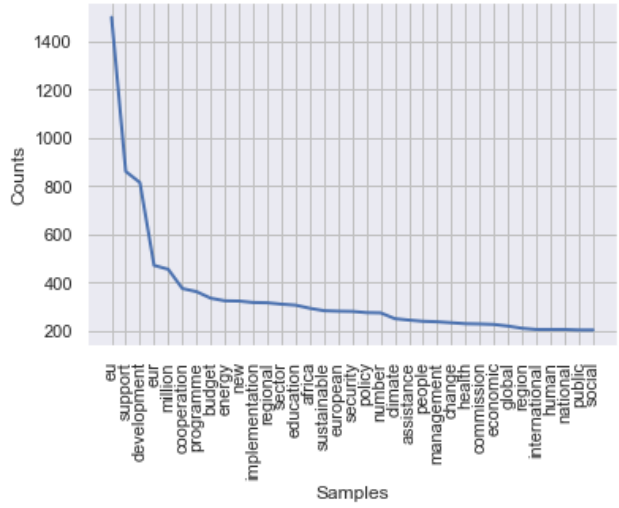


Figure 9: 25 most frequent words in the annual activity reports of DG INTPA

When focusing on the most frequent words around the term migration over the years the results are similar. Indeed, the most frequent words do not include the vocabulary that seemed to be more present after 2015 like irregular migration, reintegration, assisted returns... On the contrary, over the years as shown in Figure 10 and Figure 11 the words used stay the same and are quite general terms like aid, budget, implementation. The only small difference that can be noticed over the years is that the word management appears more frequently in the same sentences as migration. The detailed list can be found in the appendix (Figure 32, Figure 33, Figure 34). These most frequent words are words that are very general and that are used to describe any type of project or policy. This tend to show that even though the topic of migration gained in importance since 2015, the way to talk about it and the words used to do so changed less.

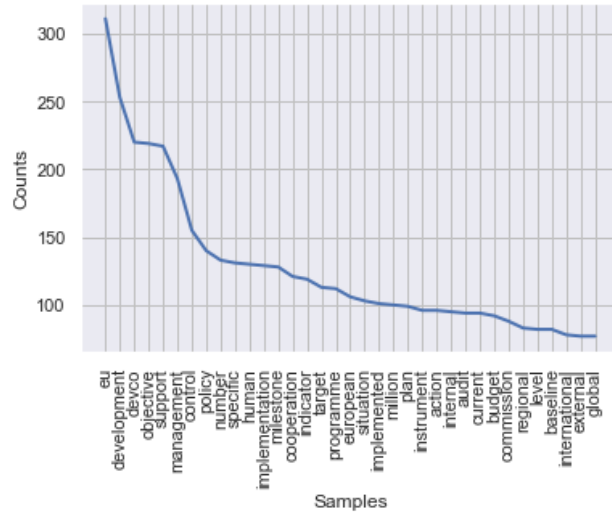


(a) 2014

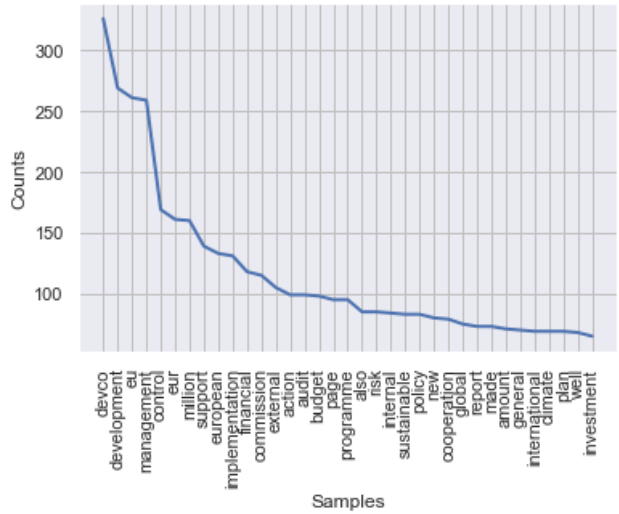


(b) 2017

Figure 10: 35 most frequent words around migration in the annual reports



(a) 2014



(b) 2017

Figure 11: 35 most frequent words around migration in the annual activity reports

However, the frequency of words does not explain fully the content of a text and when reading the reports, both the annual reports and the annual activity reports, there is indeed a change that can be observed in the way the migration topic is handled. For instance, the introductions of the annual reports before 2015 never mention migration. They present the main challenges and focus of the year but the migration topic is never mentioned. The projects mentioned in the introduction before 2015 are numerous and focused on education,

the protection of the environment, access to health, improved gender equality, but the topic of migration is absent, which tend to indicate that it is not considered as major topic of the development policy. The topic is throughout the annual reports only briefly mentioned and is mostly mentioned when describing the coherence between the European Union development policy and other policies. Here the reports state that the European Union work in order to ensure "consistent synergies between development policy and policies such as migration, security, climate action and energy, food security, access to health-care and education". However, when detailing why it is important to coordinate the migration and development policies, the annual reports before 2015 explain that it is in order to "to bring about better coordination between migration and development by reducing the risk of "brain drain", by making migrants' remittances cheaper and safer, or by facilitating circular migration". Overall, in both the annual and annual activity reports before 2015, the topic of migration is present but does not take an important place in the presentation of the development policies and strategies, nor in the presentations of the different projects implemented.

Yet, one can observe a change of tone starting from 2015. Indeed, the topic of migration becomes an important part of the introductions of the reports. In the annual report from 2015, the migration crisis is even stated as the first challenge that the European Union was confronted with during the year. The introduction also mentions that an European Agenda on migration has been voted in order to improve the management of migration and thus in all of its aspect. It also mentions the creation of the EUTF as part of an effort to "strengthen cooperation and address the challenges and the opportunities presented by migration". Even if the text analysis did not enable to notice a change of tone in the way migration is handled, the reading of the reports after 2015 indicates that it is the case. In the 2015 annual report, when detailing the policy commitments in terms of development, the report states that the strong nexus between development and migration has been confirmed and that even though the development assistance of the European Union has addressed development and migration concerns for many years, 2015 is a changing year. The report says: "While EU development assistance has addressed migration and development concerns for years, in 2015 the Commission considerably stepped up efforts to more effectively respond to the needs and priorities of partner countries. This includes ensuring that migration concerns are mainstreamed into all other relevant development sectors under geographical and thematic funding programmes.". In the introductions of the annual reports from 2016 and 2017 it is also mentioned that a special attention to migration when implementing policy will be put in place.

The same change of ton is observable in the annual activity reports where after 2015 the topic of migration starts to be mentioned in the introduction with the same idea that the migration topic needs to be well integrated with development policies. In 2016, a new general objective of the directorate general is introduced and it concerns migration. The goal entitled " Towards a new policy on migration" is specified in 2017 and becomes "Addressing the root causes of irregular migration and force displacement".

To summarize, even though the text analysis of the reports solely enabled to detect a change in the frequency of the vocabulary related to migration in the reports, the reading of said reports shows that the way migration is handled changes after 2015 and becomes a priority that needs to be fully integrated to the implementation of the development policies.

3.4 Limits of the analysis

Even though a change is detected after 2015 and it looks like the migration topic becomes at the core of the European Union development policy it is important to notice the limits of the text analysis. The text analysis mainly relies on word counting and does not enable to spot a change of tone. The change of tone being solely observed with the readings of the text. Other methods could have been applied in order to study the evolution of the migration topic in the reports and to try to spot this change of tone through natural language processing.

First, to study the evolution of the migration topic over the years, one could have used a method of natural language processing called the dynamic topic models (Blei & Lafferty, 2006). This method was created in order to detect and analyse the evolution of topics in documents. To put it simply, topic modelling is a method of text analysis that analyse group of words (bags of words) together instead of counting them individually. This allows to take into account how the meaning of the words are dependent on the broader context in which they are used¹¹. This method of machine learning was applied to central bank speeches in order first to detect what global topics central banks talk about and second how those topics evolve over time (Hansson, 2021). It would have been interesting to try apply this method to the reports that were studied here. However this method is often applied to a large number of documents which would have required to find more official documents on development to study.

Second, in order to capture the change of ton concerning the topic of migration, it would have been interesting to perform a sentiment analysis. Sentiment analysis is a growing field of machine learning that tries to determine the sentiment that is contained in a text (Mejova, 2009). There are two types of sentiment that can come in a text. The first one is explicit, it is the case when a sentence directly expresses an opinion and the second one is implicit, the sentence only implies an opinion. So far, most of the research has been carried on highly subjective texts like products reviews and in rarer case to less subjective texts like news article (Balahur et al., 2013). Even though it would have been interesting to implement this method to the reports of the EU, it probably would have been difficult to get some results since the texts at hand are very formal and never express explicit sentiment.

¹¹https://cbail.github.io/SICSS_Topic_Modeling.html

4 Links between aid and migration, implementation of a gravity model

Now that a change in the official texts concerning the topic migration has been observed, this section will detail the implementation of a gravity model in order to study the links between migration and development over the period.

4.1 Data

In order to study the link between migration flows and the amounts of development aid, several data sets will be used. We will consider two types of development aid, the first one is bilateral aid data from each European country to each African country and the second one represents the development aid from the EU to each of the African country. Our analysis will also take into account two types of migration flows, asylum seekers and migrants.

4.1.1 Bilateral Aid data from EU countries

Our first model includes 28 donor countries (i.e migration destinations). These donor countries are the 27 countries of the European Union and the United Kingdom. Even though the United Kingdom is no longer part of the European Union it was included since the United Kingdom only left the European Union the 31st of January 2020. The sample also includes 54 African recipient countries. The detailed list of the countries can be found in the appendix (Figure 35).

For the aid variable, the data used is official development aid (ODA) expressed in constant US Dollars from the OECD data base¹². This allows to have the amount of aid given by every donor country to every recipient country from 2010 to 2020. ODA is defined as "government aid designed to promote the economic development and welfare of developing countries. Loans and credits for military purposes are excluded. Aid includes grants, "soft" loans and the provision of technical assistance."¹³.

For the variable related to migration flows, two types of data will be used. The analysis will be made first with a focus on asylum seekers and second with a focus of migrants. The data indicating the flow of asylum seekers from each recipient country to each donor country per year has been taken from the United Nations High Commissioner for Refugees (UNHCR), an agency of the United Nations whose role is to protect and aid refugees, displaced persons and forcibly displaced individuals. Asylum seekers are defined by the agency as "individuals who have sought international protection and whose claims for refugee status have not yet

¹²The data is available at <https://stats.oecd.org/viewhtml.aspx?datasetcode=TABLE2A&lang=en>

¹³<https://data.oecd.org/oda/net-oda.htm>

been determined"¹⁴. Most of the data from the agency comes from government or from the UNHCR operations¹⁵.

The data on the flow of migrants comes from the OECD international migration data base¹⁶. Unfortunately, the data was only available from 2010 to 2019 and is only available for 22 of the donor countries taken into account in this analysis. Data for Bulgaria, Croatia, Cyprus, Ireland, Malta and Romania is not available. This variable gives the inflow of foreign population by nationality, which means that for every donor country, it indicates the inflow of migrants from every recipient countries.

Finally, the analysis will take into account two additional variables. The first one is a distance variable that indicates the distance in kilometers between capitals for each donor-recipient pair. The data for the distances between countries comes from the CEPII Gravity data base¹⁷.

The last variable used is a variable called Saliency. The goal of this variable is to indicate for each year of interest the importance of the migration vocabulary in the official texts of the European Union. The variable is constructed taking into account the word counts of the term migration in the annual report of DG INTPA made in the previous section for each year. It takes 2010 as base year (the variable takes the value of 1 in 2010). The values taken by the variables can be found in the appendix (Figure 36) .

4.1.2 European Union Aid data

The second model only includes the European Union as donor country. The sample still includes the 54 recipient countries described in the previous subsection.

The development aid data also comes from the OECD database but takes into account the ODA given by all of the European Union institutions per year to each of the recipient countries. The European Union institutions take into account the commission, the European Development Fund and the European Investment Bank.

The asylum seekers and migrants data comes from the same source as in the previous model. This means that there is no migration data for 2020 and that the 6 previous countries mentioned previously are not taken into account. For the distance, it was decided to take the distance between the capitals of each recipient countries and Brussels since it is the capital of most of the European Union institutions. The variable related to vocabulary stays the same.

¹⁴<https://www.unhcr.org/refugee-statistics/methodology/definition/>

¹⁵The data is available at <https://www.unhcr.org/refugee-statistics/methodology/definition/>
<https://www.unhcr.org/refugee-statistics/download/?url=2z1B08>

¹⁶The data is available at <https://stats.oecd.org/Index.aspx?DataSetCode=MIG#>

¹⁷The data is available at http://www.cepii.fr/CEPII/fr/bdd_modele/bdd_modele_item.asp?id=8

4.2 Model and econometric specification

The gravity model of migration is derived from the Newton's law of gravity. It is used to make prediction on the degree of migration interaction between two locations (Rodrigue, 2020). Newton's law of gravity states that "Any two bodies attract one another with a force that is proportional to the product of their masses and inversely proportional to the square of the distance between them."

In the context of the gravity model of migration, "bodies" and "masses" can be changed by "location" and "importance". Importance can be measured in terms of gross domestic product, population size or other types of appropriate variables. This model is based on the idea that if the importance of one or both locations increases, then the movement between those two locations will increase as well. However the further away both locations are, the less important the movement between them will be.

The interest towards the gravity models of migration only regained momentum recently, particularly because of the increased availability of migration data and more precisely the availability of dyadic (origin-destination) data. However, the economic literature has for long studied gravity models to explain migration decision. The reviews made by Anderson (2011) on the gravity models credits Ravenstein (1885, 1889) as the pioneer in the use of gravity models to understand migration patterns, long before the estimation of Tinbergen (1962) who estimated the international trade flows gravity equation.

There are many advantages in using the gravity model in order to understand migration patterns. Even though it is a simple model, it has shown to have an important predictive power which made it an useful tool when studying mobility between countries (Crozet,(2004), Mayda, (2010), Garcia, Pindolia, Lopiano, and Tatem, (2015), M. Beine, Bertoli, and Fernández-Huertas Moraga, (2016)).

The recent economic literature on gravity model underlines the need for micro foundations in order to derive gravity equations that can then be applied to migration. Two main methods are used. Anderson (2011) uses a full equilibrium framework in order to derive a gravity equation and underlines the importance of multilateral resistance ¹⁸. The other method is the one developed by Beine et al. (2011) who derives the gravity equation from the random utility model (RUM). In this analysis, the gravity equation will be derived following the idea of the RUM model.

The equations will be estimated for four models. The first model will study the links between development aid from all the European Union countries and the flows of asylum seekers. The second model will focus on the link between aid from the European countries

¹⁸This underlines the idea that the migration rate observed between two countries does not only depend on their attractiveness but also the one of alternative destinations

and flows of migrants. The third model focuses on the pattern between aid given by the European Union and asylum seekers and the last model on the aid from the European Union and migrants.

For the first model, the first group of equations estimated are the following ones:

$$Asy_{i,j,t} = \beta_1 \ln(1 + Aid_{i,j,t-1}) + \beta_2 \ln(1 + Aid_{i,j,t-1}) \times Post_{2015} + \alpha_t + \alpha_i + \alpha_j + \epsilon_{ijt} \quad (1)$$

$$Asy_{i,j,t} = \beta_3 \ln(1 + Aid_{i,j,t-1}) + \beta_4 \ln(1 + Aid_{i,j,t-1}) \times Post_{2015} + \alpha_t + \alpha_{it} + \alpha_{jt} + \alpha_{ij} + \epsilon_{ijt} \quad (2)$$

With $Asy_{i,j,t}$ being the number of asylum seekers coming from recipient country i to donor country j at time t . $Aid_{i,j,t-1}$ is the amount of development aid given by donor country j to recipient country i at time $t - 1$. The aid variable is taken with a lag in order to avoid a simultaneity bias. Indeed it could be possible that bilateral aid flow at time t is not independent from the flow of asylum seekers. It is important to note that the aid variable has been transformed. In some cases the aid was negative. It can happen when for example a recipient countries reimbursed more loans in comparison to what he received for said year. In order to not drop those observations, these lines have been set at zero. However the equations with the aid not transformed will also be estimated and the results are presented in the appendix. We use $\ln(1 + Aid)$ and not $\ln(Aid)$ because lots of values in the data set are null. Doing this transformation allows to take them into account. $Post_{2015}$ is a dummy equal to 1 if t is equal to 2015 or higher and 0 otherwise.

α_t, α_i and α_j represent respectively time fixed effects, origin fixed effects and destination fixed effects. Those fixed effects allow to control for unobserved heterogeneity. Time fixed effects will take into account time specific effects that are common to both the recipient and donor countries. For example it controls for the fact that some years aid might be more important than others. Origin and destination fixed effects capture effects that are non observable, constant through time and specific to each origin or destination country respectively. It could be for example the size of a country and such feature could influence migration.

α_{it}, α_{jt} and α_{ij} represent respectively origin-time fixed effects, destination-time fixed effects and destination-origin fixed effects. origin fixed effects are events that affect the country of origin for a specific time t . It could be for example the GDP per capita at time t , a natural disaster that happened in the country at time t or a civil war. It would be likely that if the last two factors were to happen, it would make a country more likely to receive aid and probably increase migration. These factors could simultaneously affect both migration and aid flows and if it is not controlled for, it could seem that there is a link between migration and aid only because they are both influenced by such events. The idea behind destination origin fixed

effects is the same and reflects the unobservable destination countries conditions at time t . It could be for example economic conditions such as GDP per capita. Finally, origin-destination fixed effects control for bilateral links between each pair of origin and destination countries. It could be for example the fact that the pair share a common language, or that the pair share colonial links. This could both affect migration and aid flows and is not observable. For instance it is possible that both the migration and aid flows are affected by the colonial links between Congo and Belgium even though it is not observable.

For the first model, the second group of equations estimated are the following one:

$$Asy_{i,j,t} = \beta_1 \ln(1 + Aid_{i,j,t-1}) + \beta_2 \ln(1 + Aid_{i,j,t-1}) \times Salience_t + \alpha_t + \alpha_i + \alpha_j + \epsilon_{ijt} \quad (3)$$

$$Asy_{i,j,t} = \beta_3 \ln(1 + Aid_{i,j,t-1}) + \beta_4 \ln(1 + Aid_{i,j,t-1}) \times Salience_t + \alpha_t + \alpha_{it} + \alpha_{jt} + \alpha_{ij} + \epsilon_{ijt} \quad (4)$$

$Salience_t$ is a variable that captures the changes in the annual reports of DG Intpa concerning the topic migration.

Finally, the last equation estimated is:

$$Asy_{i,j,t} = \beta_1 \ln(1 + Aid_{i,j,t-1}) + \beta_2 \ln(1 + Aid_{i,j,t-1}) \times Post_{2015} + \beta_3 \ln(1 + Aid_{i,j,t-1}) \times Salience_t + \beta_4 \ln(1 + Aid_{i,j,t-1}) \times \ln(dist_{i,j}) + \alpha_t + \alpha_{it} + \alpha_{jt} + \alpha_{ij} + \epsilon_{ijt} \quad (5)$$

With $\ln(dist_{i,j})$ being the natural logarithm of the distance between the capital of the recipient country i and the donor country j .

For simplicity sake, this section will not present the equations used to estimate the other models since they just require to either replace the variable representing the asylum seekers flow by the variable of migrants flow or replace the bilateral development aid by the European Union development aid.

All of the equations presented create issues for the estimation since we have an important share of zero values for both the migration flows variables and the aid variables. These issues have been first identified by Santos Silva and Tenreyro (2006). They state that if there is an important share of zero values, then the equations are possibly going to be subject to an heteroscedastic error term. This would generate a type of bias in the estimated coefficients by creating a dependence between higher moments of the error term and the key covariates. In order to fix the problem, the authors suggest to use the Poisson Pseudo-Maximum estimator in order to estimate the equations. This method will be followed. In addition to this the

estimations will be run twice, and the second time all standard errors at the origin and destination level will be clustered. Clustering standard errors allows to account for the case where observations within each group are not independently and identically distributed which is not the case for fixed effects that remove unobserved heterogeneity between different groups.

4.3 Results with bilateral aid data

4.3.1 Asylum Seekers

Figure 12 shows the results of the estimation of equations 1-2 over the 2010-2020 period. Over the period, the results show that aid is positively correlated with asylum seekers flows and thus at the 1% significance level except in column (5). However, it shows also that after 2015 aid and asylum seekers flow become negatively correlated. Indeed, a 1% increase in development aid decreases the flow of asylum seekers by 0,10 to 0,18% depending on the different fixed effects considered. The coefficients are all statistically significant (even when standard errors are clustered). This tends to indicate that 2015 is a turning point in the way development aid flow and asylum seekers flow interact. The estimation of equations 3 and 4 also seems to illustrate this turning point. Indeed, the variable *Salience*, that increases after 2014, is negatively correlated with the flow of asylum seekers. A 1% increase in the salience variable (i.e an increase in the occurrence of the term migration) leads to a decrease of asylum seekers flows between 0,17 and 0,22%. Here we also find that over the whole period however, aid is positively correlated with asylum seekers flows and thus at the 1% significance level except for column (5).

In both cases it does not seem from the estimation tables that the distance between the recipient and donor country has a significant impact on the flow of asylum seekers.

VARIABLES	(1) Asylum Seekers	(2) Asylum Seekers	(3) Asylum Seekers	(4) Asylum Seekers	(5) Asylum Seekers
$\ln(1 + Aid_{t-1})$	0.158*** (0.0263) [0.0617]	0.267*** (0.0293) [0.0624]	0.279*** (0.0342) [0.0637]	0.0746*** (0.0209) [0.0311]	0.0158 (0.283) [0.525]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$		-0.157*** (0.0319) [0.0495]	-0.176*** (0.0473) [0.0493]	-0.104*** (0.0183) [0.0397]	-0.104*** (0.0184) [0.0401]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$					0.00697 (0.0339) [0.0635]
Constant	7.825*** (0.0781) [0.188]	7.822*** (0.0754) [0.186]	7.900*** (0.0718) [0.198]	8.655*** (0.0473) [0.0678]	8.653*** (0.0507) [0.0810]
Observations	16,604	16,604	16,059	10,052	10,052
Time FE	YES	YES	YES	YES	YES
Origin FE	YES	YES	NO	NO	NO
Destination FE	YES	YES	NO	NO	NO
Origin Time FE	NO	NO	YES	YES	YES
Destination Time FE	NO	NO	YES	YES	YES
Destination Origin FE	NO	NO	NO	YES	YES
Robust standard errors in parentheses					
Robust standard errors clustered at the origin and destination are reported into brackets					
*** p<0.01, ** p<0.05, * p<0.1					

Figure 12: Estimation of equations (1) and (2) using the PPML estimator ¹⁹

¹⁹The estimation has been rerun with the smaller sample of observations as in column (5) and give similar results

VARIABLES	(1) Asylum Seekers	(2) Asylum Seekers	(3) Asylum Seekers	(4) Asylum Seekers	(5) Asylum Seekers
$\ln(1 + Aid_{t-1})$	0.158*** (0.0263) [0.0617]	0.386*** (0.0513) [0.0713]	0.445*** (0.0761) [0.0749]	0.158*** (0.0305) [0.0504]	0.0981 (0.284) [0.529]
$\ln(1 + Aid_{t-1}) \times Salience_t$		-0.177*** (0.0414) [0.0514]	-0.224*** (0.0622) [0.0565]	-0.119*** (0.0211) [0.0407]	-0.119*** (0.0211) [0.0411]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$					0.00714 (0.0338) [0.0631]
Constant	7.825*** (0.0781) [0.188]	7.822*** (0.0748) [0.185]	7.896*** (0.0700) [0.194]	8.649*** (0.0474) [0.0670]	8.646*** (0.0508) [0.0803]
Observations	16,604	16,604	16,059	10,052	10,052
Time FE	YES	YES	YES	YES	YES
Origin FE	YES	YES	NO	NO	NO
Destination FE	YES	YES	NO	NO	NO
Origin Time FE	NO	NO	YES	YES	YES
Destination Time FE	NO	NO	YES	YES	YES
Destination Origin FE	NO	NO	NO	YES	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 13: Estimation of equations (3) and (4) using the PPML estimator ²⁰

When estimating the equation with all the variables at once, the results are a bit more mitigated. The coefficients keep the same signs but most of the results are not statistically significant.

²⁰The estimation has been rerun with the smaller sample of observations as in column (5) and give similar results

VARIABLES	(1) Asylum Seekers	(2) Asylum Seekers	(3) Asylum Seekers	(4) Asylum Seekers	(5) Asylum Seekers
$\ln(1 + Aid_{t-1})$	0.158*** (0.0263) [0.0617]	0.315*** (0.0743) [0.0550]	0.416*** (0.119) [0.0765]	0.114*** (0.0374) [0.0461]	0.0607 (0.283) [0.520]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$		-0.111 (0.0714) [0.0706]	-0.0443 (0.112) [0.0700]	-0.0673** (0.0342) [0.0537]	-0.0673** (0.0342) [0.0539]
$\ln(1 + Aid_{t-1}) \times Salience_t$		-0.0616 (0.0926) [0.0622]	-0.178 (0.146) [0.0844]	-0.0501 (0.0392) [0.0442]	-0.0500 (0.0392) [0.0441]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$					0.00631 (0.0338) [0.0632]
Constant	7.825*** (0.0781) [0.188]	7.822*** (0.0750) [0.185]	7.897*** (0.0702) [0.195]	8.653*** (0.0475) [0.0680]	8.651*** (0.0509) [0.0812]
Observations	16,604	16,604	16,059	10,052	10,052
Time FE	YES	YES	YES	YES	YES
Origin FE	YES	YES	NO	NO	NO
Destination FE	YES	YES	NO	NO	NO
Origin Time FE	NO	NO	YES	YES	YES
Destination Time FE	NO	NO	YES	YES	YES
Destination Origin FE	NO	NO	NO	YES	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 14: Estimation of equation (5) using the PPML estimator ²¹

Until recently, the literature studying the links between aid and population flows has been more focused on studying migration flows. However a few studies were focused on investigating the links between asylum seekers flow and development aid flow. This is the case for instance of Dreher et al. (2019) and Murat (2020) that also use data from the UNHCR. Dreher studies the change in stock of asylum seekers from 141 origin countries to OECD countries over the 1976-2013 period. He finds that aid has no impact on asylum seekers stock in the short run but has a negative impact in the long run. These results are different from what has been found here since we find that over the period, aid has a positive impact on asylum seekers flows and a negative impact after 2015.

Murat studies the links between aid and asylum seekers flow from 113 developing countries to 14 OECD countries over the period 1993-2013 using an instrument variable method. She finds that aid to intermediate levels of development countries has no effect on the number of asylum seekers. However, for poorer countries, such as Burundi, Central African Republic, Democratic Republic of Congo, Eritrea, Ethiopia, Liberia or Malawi, a 1% increase in development aid decreases asylum seekers by 0,05%. This reduction is smaller than the one we

²¹The estimation has been rerun with the smaller sample of observations as in column (5) and give similar results

observed after 2015, as we found that a 1% increase in aid after 2015 decreases asylum seekers flow by 0,15%. The coefficient we found for the salience variable are also more important. This would suggest that the negative impact of development aid after 2015 on asylum seekers in our study is quite important.

Finally a last paper that focused on the link between asylum seekers and aid is the one from Clist and Restelli (2021) that studies the impact of development aid on asylum seekers flow in Italy from 2003 to 2016. They find that over the period, a 1% increase in Italian bilateral aid is associated with a 0,017 percent increase in asylum applications and is significant at the 5% level. This is quiet similar than the result we found when looking at aid over the 2010-2020 period, not taking into account the Post 2015 or salience variable.

4.3.2 Migrants

Figure 15 shows the results of the estimation of equations 1 2 over the 2010-2019 period. The results here are trickier to interpret. When checking for time fixed effects, origin and destination fixed effects and origin time and destination time fixed effect results show that aid is positively correlated with migration flows over the period and that the coefficients are statistically significant. However, after 2015 the coefficients are negative. After 2015, a 1% increase in development aid decreases migration flows from 0,08 to 0,15%. Yet, when checking for bilateral fixed effects between countries of origin and destination and checking for the distance, we observe an inversion in the signs of the coefficients. Aid becomes negatively correlated to migration flows over the whole period but is positively correlated with migration flows after 2015. Unlike in the previous model with asylum seekers, the coefficient associated with distance has a positive sign and is statistically significant when most of the literature finds that this coefficient is negative.

When estimating 3 and 4, we find the similar pattern as in the previous table. Columns (1) to (3) show a positive relationship between aid and migration flows over the period (with coefficients statistically significant at the one percent level) but a negative relationship between aid and migration flows when the salience index increases with coefficient statistically significant at the 5 percent level. Indeed, columns (2) and (3) show that a 1% increase in salience decreases migration flows from 0,08 to 0,15%. However when adding origin destination origin fixed effects, the relationship is reversed, aid becomes negatively correlated to migration flows over the total period and salience and migration flows are positively correlated.

VARIABLES	(1) Migrants	(2) Migrants	(3) Migrants	(4) Migrants	(5) Migrants
$\ln(1 + Aid_{t-1})$	0.297*** (0.0288) [0.0612]	0.348*** (0.0383) [0.0704]	0.436*** (0.0457) [0.0808]	-0.0583*** (0.0164) [0.0229]	-0.512*** (0.140) [0.196]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$		-0.0880** (0.0358) [0.0351]	-0.145** (0.0621) [0.0597]	0.0442** (0.0174) [0.0327]	0.0415** (0.0172) [0.0317]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$					0.0576*** (0.0175) [0.0242]
Constant	7.013*** (0.0947) [0.199]	7.003*** (0.0956) [0.200]	6.904*** (0.0936) [0.226]	8.479*** (0.0423) [0.0647]	8.476*** (0.0433) [0.0670]
Observations	11,858	11,858	10,975	8,908	8,908
Time FE	YES	YES	YES	YES	YES
Origin FE	YES	YES	NO	NO	NO
Destination FE	YES	YES	NO	NO	NO
Origin Time FE	NO	NO	YES	YES	YES
Destination Time FE	NO	NO	YES	YES	YES
Destination Origin FE	NO	NO	NO	YES	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 15: Estimation of equation (1) and (2) using the PPML estimator ²²

VARIABLES	(1) Migrants	(2) Migrants	(3) Migrants	(4) Migrants	(5) Migrants
$\ln(1 + Aid_{t-1})$	0.297*** (0.0288) [0.0612]	0.430*** (0.0606) [0.0879]	0.574*** (0.0861) [0.108]	-0.0947*** (0.0280) [0.0439]	-0.551*** (0.145) [0.209]
$\ln(1 + Aid_{t-1}) \times Salience_t$		-0.107*** (0.0409) [0.0397]	-0.179*** (0.0668) [0.0683]	0.0507** (0.0219) [0.0413]	0.0481** (0.0216) [0.0404]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$					0.0581*** (0.0178) [0.0247]
Constant	7.013*** (0.0947) [0.199]	7.002*** (0.0948) [0.198]	6.903*** (0.0932) [0.225]	8.476*** (0.0420) [0.0638]	8.474*** (0.0431) [0.0664]
Observations	11,858	11,858	10,975	8,908	8,908
Time FE	YES	YES	YES	YES	YES
Origin FE	YES	YES	NO	NO	NO
Destination FE	YES	YES	NO	NO	NO
Origin Time FE	NO	NO	YES	YES	YES
Destination Time FE	NO	NO	YES	YES	YES
Destination Origin FE	NO	NO	NO	YES	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 16: Estimation of equatin (3) and (4) using the PPML estimator ²³

²²The estimation has been rerun with the smaller sample of observations as in column (5) and give similar results

Figure 42 results follow the same pattern as the two previous table in terms of the signs of the coefficients. However most of the coefficients are not statistically significant. When checking for destination origin fixed effects, aid becomes negatively correlated to migration flows over the 2010-2019 period but not after 2015 and not if the salience index increases.

VARIABLES	(1) Migrants	(2) Migrants	(3) Migrants	(4) Migrants	(5) Migrants
$\ln(1 + Aid_{t-1})$	0.297*** (0.0288) [0.0612]	0.418*** (0.0871) [0.0775]	0.560*** (0.160) [0.113]	-0.0717 (0.0500) [0.0471]	-0.527*** (0.150) [0.197]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$		-0.0157 (0.0943) [0.0523]	-0.0189 (0.189) [0.102]	0.0308 (0.0511) [0.0401]	0.0266 (0.0513) [0.0390]
$\ln(1 + Aid_{t-1}) \times Salience_t$		-0.0901 (0.108) [0.0602]	-0.158 (0.208) [0.114]	0.0172 (0.0635) [0.0593]	0.0192 (0.0635) [0.0595]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$					0.0577*** (0.0176) [0.0243]
Constant	7.013*** (0.0947) [0.199]	7.002*** (0.0951) [0.199]	6.903*** (0.0932) [0.225]	8.478*** (0.0427) [0.0657]	8.476*** (0.0436) [0.0678]
Observations	11,858	11,858	10,975	8,908	8,908
Time FE	YES	YES	YES	YES	YES
Origin FE	YES	YES	NO	NO	NO
Destination FE	YES	YES	NO	NO	NO
Origin Time FE	NO	NO	YES	YES	YES
Destination Time FE	NO	NO	YES	YES	YES
Destination Origin FE	NO	NO	NO	YES	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 17: Estimation of equation (5) using the PPML estimator ²⁴

So far the literature suggests that one should be cautious when interpreting the estimates of the effect of aid on migration as the mechanism by which development aid would systematically reduce or increase migration is unclear. Berthelemy, Beuran and Maurel ((2009)) found that a rise by 10 percent of GDP of aid raises the emigrant stock compared to the share of population by 1.5 percentage points. In our study, we also find, without the origin destination fixed effects that over the 2010-2019 period aid and migration flows are positively correlated. However these findings have been challenged by a more recent literature. Lanati and Thiele ((2018)) present a model use a gravity model to study gross migration flows between 1995 and 2014 to 22 destination countries. They find a negative relationship between the aggregate amount of aid received and the migration flows. However, they do not find any effect of bilateral aid on migration flows.

²³The estimation has been rerun with the smaller sample of observations as in column (5) and give similar results

²⁴The estimation has been rerun with the smaller sample of observations as in column (5) and give similar results

It is difficult to compare the results of our analysis to one of the existing studies as depending on the fixed effects introduced, the sign of the coefficients are changed.

4.4 Results with the European Union aid data

This section will now present the results when using the development aid from the European Union institutions as aid variable. Unlike in the previous sections, the estimations will not check for origin time fixed effects and destination time fixed effect because the sample was too small to create them. The equations will be estimated using first time, origin and destination fixed effects and then time and destination-origin fixed effects.

4.4.1 Asylum Seekers

The estimations of 1 2 as presented in table Figure 18 show from the results of column (2) and (3) that, over the 2010-2020 period, overall aid is positively correlated with asylum seekers flow. However, after 2015 both are negatively correlated with coefficients significant at the 1 percent level. Indeed, after 2015 a 1 percent increase in development aid decrease asylum flows from 0,16 to 0,17% which is a slightly lower decrease than in the model with bilateral aid data.

These results show two surprising facts, the coefficient associated to distance is negative even though it is not statistically significant. We observe the same thing for the coefficients associated to development aid in column (1).

For the estimations of 3 4 in Figure 19 we observe in column (2) and (3) similar results. Aid is positively correlated with asylum seekers and the number of asylum seekers decreases as the salience index increases with an elasticity estimate that ranges between -0,160 and -0,153, which is slightly lower than in the case of bilateral aid data.

These estimates tend to show, just like in the case of asylum seekers and bilateral aid data from every European country, that 2015 represents a turning point in the way asylum seekers and migration flows interact.

VARIABLES	(1) Asylum Seekers	(2) Asylum Seekers	(3) Asylum Seekers
$\ln(1 + Aid_{t-1})$	-0.0168 (0.0474) [0.0970]	0.115** (0.0483) [0.0813]	0.577 (0.915) [1.446]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$		-0.167*** (0.0367) [0.0661]	-0.162*** (0.0371) [0.0657]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$			-0.0554 (0.110) [0.177]
Constant	10.43*** (0.205) [0.418]	10.36*** (0.189) [0.352]	10.40*** (0.215) [0.417]
Observations	594	594	594
Time FE	YES	YES	YES
Origin FE	YES	YES	NO
Destination FE	YES	YES	NO
Origin Time FE	NO	NO	NO
Destination Time FE	NO	NO	NO
Destination Origin FE	NO	NO	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 18: Estimation of equations (1) and (2) using the PPML estimator

VARIABLES	(1) Asylum Seekers	(2) Asylum Seekers	(3) Asylum Seekers
$\ln(1 + Aid_{t-1})$	-0.0168 (0.0474) [0.0970]	0.184*** (0.0571) [0.0969]	1.337 (0.873) [1.535]
$\ln(1 + Aid_{t-1}) \times Salience_t$		-0.160*** (0.0382) [0.0707]	-0.153*** (0.0380) [0.0692]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$			-0.139 (0.105) [0.187]
Constant	10.43*** (0.205) [0.418]	10.46*** (0.199) [0.413]	10.54*** (0.230) [0.482]
Observations	594	594	594
Time FE	YES	YES	YES
Origin FE	YES	YES	NO
Destination FE	YES	YES	NO
Origin Time FE	NO	NO	NO
Destination Time FE	NO	NO	NO
Destination Origin FE	NO	NO	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 19: Estimation of equations (3) and (4) using the PPML estimator

When looking at the estimation of all the variables together the result are mixed (Figure 20). The coefficient estimates for aid and aid post 2015 keep the same signs and the

coefficient for aid after 2015 is even significant at the 5% level. However the coefficient associated with salience becomes positive. We find the expected sign for the coefficient associated with the distance however it is not statistically significant.

VARIABLES	(1) Asylum Seekers	(2) Asylum Seekers
$\ln(1 + Aid_{t-1})$	0.526 (0.953) [1.503]	0.526 (0.953) [1.503]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$	-0.175** (0.0688) [0.0735]	-0.175** (0.0688) [0.0735]
$\ln(1 + Aid_{t-1}) \times Salience_t$	0.0169 (0.0747) [0.0664]	0.0169 (0.0747) [0.0664]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$	-0.0507 (0.113) [0.182]	-0.0507 (0.113) [0.182]
Constant	10.39*** (0.227) [0.442]	10.39*** (0.227) [0.442]
Observations	594	594
Time FE	YES	YES
Origin FE	YES	NO
Destination FE	YES	NO
Origin Time FE	NO	NO
Destination Time FE	NO	NO
Destination Origin FE	NO	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 20: Estimation of the equation (5) using the PPML estimator

When comparing those results with the literature, here just like in the bilateral data model for asylum seekers, we find that the decrease of asylum seekers associated with a 1% increase of development aid is quite large compared to the study of Murat for example (in our case without origin destination fixed effect the increase is about 0,16% vs 0,05% in the paper).

4.4.2 Migrants

Figure 21 show the results for the estimation of equation (1) and (2) for the 2010-2019 period. Here, we find that aid is negatively correlated with migration flows but the results are only statistically significant when checking for time and destination origin fixed effects. The elasticity ranges between -0,006 and -0,7. After 2015, the coefficients are also negative and significant statistically at the 10 percent level when adding time and destination origin fixed effects. In column (2) the coefficient post 2015 is larger than the one associated with aid only (-0,05 vs -0,006), however when adding destination origin fixed effects (column 3) the opposite is observable which would suggest that after 2015 an increase in aid decreases migration flows by a smaller percentage, only 0,05 percent versus 0,7 percent for the whole period. In this table, aid is negatively correlated to migration not only after 2015. These

results are not similar to what has been studied in the literature, as there is often a positive relationship between aid and migration flows. One paper that was suggesting the opposite is from Gamso and Yuldashev (2018) that proved that aid supporting rural development was reducing migration. However it is focused on a very small type of aid and it is not the case in our study.

The results in Figure 22 are more difficult to interpret. None of the coefficient associated with aid are statistically significant and the show opposite signs. However, both coefficient associated with salience are negative and statistically significant at the 5 percent level, suggesting that an increase in the presence of the migration topic in official texts decreases migration flows. The coefficients are smaller than for the model with bilateral aid data (if we look at the coefficients without adding destination origin fixed effects). Here the elasticity ranges from -0,77 to -0,72.

VARIABLES	(1) Migrants	(2) Migrants	(3) Migrants
$\ln(1 + Aid_{t-1})$	-0.0315 (0.0257) [0.0386]	-0.00664 (0.0271) [0.0304]	-0.732* (0.414) [0.563]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$		-0.0540 (0.0343) [0.0361]	-0.0598* (0.0346) [0.0372]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$			0.0888* (0.0504) [0.0680]
Constant	10.00*** (0.124) [0.184]	10.03*** (0.126) [0.180]	10.09*** (0.131) [0.187]
Observations	539	539	539
Time FE	YES	YES	YES
Origin FE	YES	YES	NO
Destination FE	YES	YES	NO
Origin Time FE	NO	NO	NO
Destination Time FE	NO	NO	NO
Destination Origin FE	NO	NO	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and
destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 21: Estimation of equations (1) and (2) using the PPML estimator

VARIABLES	(1) Migrants	(2) Migrants	(3) Migrants
$\ln(1 + Aid_{t-1})$	-0.0315 (0.0257) [0.0386]	0.0503 (0.0424) [0.0407]	-0.623 (0.407) [0.566]
$\ln(1 + Aid_{t-1}) \times Salienc_e$		-0.0727** (0.0355) [0.0463]	-0.0767** (0.0355) [0.0473]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$			0.0826* (0.0494) [0.0685]
Constant	10.00*** (0.124) [0.184]	10.04*** (0.124) [0.184]	10.09*** (0.128) [0.191]
Observations	539	539	539
Time FE	YES	YES	YES
Origin FE	YES	YES	NO
Destination FE	YES	YES	NO
Origin Time FE	NO	NO	NO
Destination Time FE	NO	NO	NO
Destination Origin FE	NO	NO	YES
Robust standard errors in parentheses			
Robust standard errors clustered at the origin and			
destination are reported into brackets			
*** p<0.01, ** p<0.05, * p<0.1			

Figure 22: Estimation of equations (3) and (4) using the PPML estimator

When estimating the model where all the variables are used (Figure 23) none of the results are statistically significant and surprisingly the coefficients associated to the variable $Post_{2015}$ are positive. However, the coefficients associated to salience stay positive.

All of the coefficients associated with the distance are positive in all the tables but the results are not statistically significant.

VARIABLES	(1) Migrants	(2) Migrants
$\ln(1 + Aid_{t-1})$	-0.580 (0.433) [0.552]	-0.580 (0.433) [0.552]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$	0.0222 (0.0923) [0.0568]	0.0222 (0.0923) [0.0568]
$\ln(1 + Aid_{t-1}) \times Saliencet$	-0.100 (0.0956) [0.0879]	-0.100 (0.0956) [0.0879]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$	0.0794 (0.0505) [0.0674]	0.0794 (0.0505) [0.0674]
Constant	10.09*** (0.128) [0.189]	10.09*** (0.128) [0.189]
Observations	539	539
Time FE	YES	YES
Origin FE	YES	NO
Destination FE	YES	NO
Origin Time FE	NO	NO
Destination Time FE	NO	NO
Destination Origin FE	NO	YES
Robust standard errors in parentheses		
Robust standard errors clustered at the origin and destination are reported into brackets		
*** p<0.01, ** p<0.05, * p<0.1		

Figure 23: Estimation of equation (5) using the PPML estimator

5 Discussion

Overall the results presented in the previous section are quite mixed. For the first model using bilateral aid from every donor country to every recipient country it seems that aid after 2015 negatively impacts asylum seekers flow and that the increased presence of the term migration in the European Union texts also influence negatively said flow. However when it comes to migration flows, the results are not as coherent. Indeed, when adding Destination-Origin fixed effects, we observe the opposite pattern as the one without. Without those effects migration flow are negatively impacted after 2015 or by an increase in the salience index. However with the said fixed effects it is the opposite.

The results using the development aid given by the European institutions also gives weaker results. Even though when estimated separately the variables *Post2015* and *Saliencet* have a negative impact on asylum seekers flow, taken together it seems that the salience variable has a positive impact on migration flows. One way to overcome this issue would have been to maybe develop a salience index that is more precise. In our case the index is based on the word count of the term migration. One could have developed an index including for example more words in the count.

From the results it also comes up that asylum seekers flows are more negatively impacted by a potential change of development policy after 2015 than migration flows. This seems peculiar as usually migrants are more sensitive to development aid and economic aid in particular. Also, when looking at the results for migration for bilateral aid data between each EU country and recipient country, the sign of the coefficients change. Further research would have been needed in order to investigate why this change appears and why the effect for migrants is smaller than the one for asylum seekers. In addition to these issues, most of the literature studying migration and development aid flows often take into account the ratio of migrants from country i to country j over the total size of population of country i . It would have been interesting to take this into account and run the model using this ratio to see if differences could have been noticeable.

An important issue in the model studied here is also the potential endogeneity of aid. The flow of migrants coming to a donor country may be endogenous to the allocation of foreign aid which could happened if migrants follow aid flows. One solution could have been to implement a method similar as the one used by Dreher et al ((2019)) who study the effect of foreign aid on refugee flows with the help of an instrumental variable. This method to identify the causal effect of development aid was suggested in Dreher and Langlotz ((2017)). In this study, Dreher et al identify the changes in amount of aid a recipient country receives over time by looking at the changes of government fractionalization of the donor country. A high fractionalization increases government expenditures, which means that the amount of aid given by the donor country is larger. Countries that usually receive a large amount of aid from that donor have higher chances to receive more after the increase in expenses. This probability of receiving aid represents the cross country dimension of the analysis. The instrumental variable is constructed as the interaction of the donor government fractionalization and the probability that the recipient country will receive aid. This method allows for an identification of the exogeneous changes in aid receipts on the flows of refugees. Our analysis could have followed an instrumental approach to check the relevance of the results found.

Another complication in interpreting the overall effect of development aid on migration is mentioned by Clemens and Postel (2018). They state that the complication that is common to a lot of cross country findings is the possibility of over-controlling. They take the example of the regressions used by Berthelemy, Beuran and Maurel (2009) which control for the population, the recipient GDP per capita and trade with the destination country. Even though this seems like a sensible choice (all of the factors mentioned could affect migration independently from aid). Yet, all these factors could be part of the causal path from aid to migration. Then the coefficient estimates on aid show the relation between aid and migration but exclude any effects that development aid could have had via effect on population growth or trade, or economic growth. Further research would have been needed in order to investigate this issue in the model presented in Section 4.

Besides the problems concerning the endogeneity or the possibility of over controlling when estimating the impact of development aid on migration flows, the heterogeneity of

foreign aid represents an important empirical challenge. Numerous authors (Clemens et al., (2012), Qian, (2015)) underline the fact that the impact of official development assistance (ODA) aid is difficult to analyse because it encompasses many types of aid such as debt relief, cash transfer food, loans, technical assistance... In addition to this a portion of aid is spent in the donor country. It can be for instance administrative costs that vary among donors which raises issues for valuating the total amount of aid that is actually received by recipient countries. In order to overcome the first part of the issues Lanati and Thiele (2018) analyse the pattern between migration and aid by running a gravity model for different type of ODA. They take into account ODA targeted to services and social infrastructure, then consider the ODA for economic infrastructure and finally for production sector. For this thesis it would have been interesting to follow this idea in order to observe if one type of ODA in particular influences migration. This may also have enabled to get some insight on which area of aid the European Union prioritize and if those areas have some strong link with the migration policy.

6 Conclusion

In conclusion, this analysis enabled to show that indeed the year 2015 represents a change in the approach of the European Union concerning its development aid policy. It seems from the analysis performed, that the creation of the EUTF is an illustration of the new development aid policy of the EU that is increasingly linked to its migration policy. The text analysis made in this thesis showed that the migration topic was handled differently in the reports concerning development aid after 2015. The results from the different gravity models implemented also showed that a change happened after 2015. It comes out from the analysis that the flow of asylum seekers seems to be more negatively impacted than the migrant flow by an increase in aid after 2015 or by an increase in the vocabulary related to migration. Also the results are more robust when taking into considerations the bilateral aid flows than the aid flow from the European Union institutions. This could lead the way to a more deepened study that would tried to investigate the reasons behind the difference of results between the different models.

7 Appendix

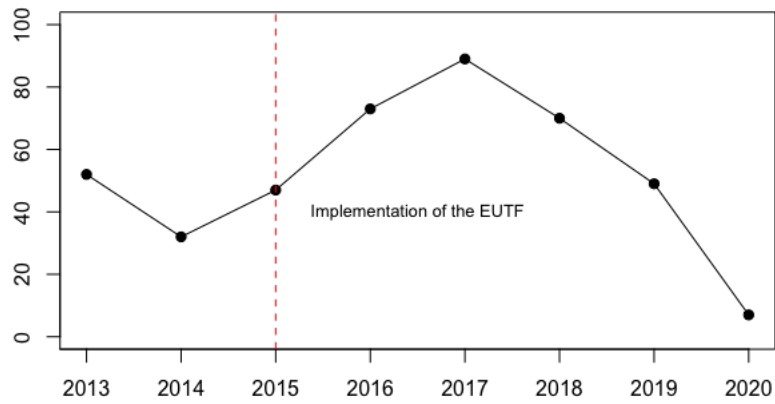


Figure 24: Occurrence of the term migration in the annual activity reports of DG INTPA

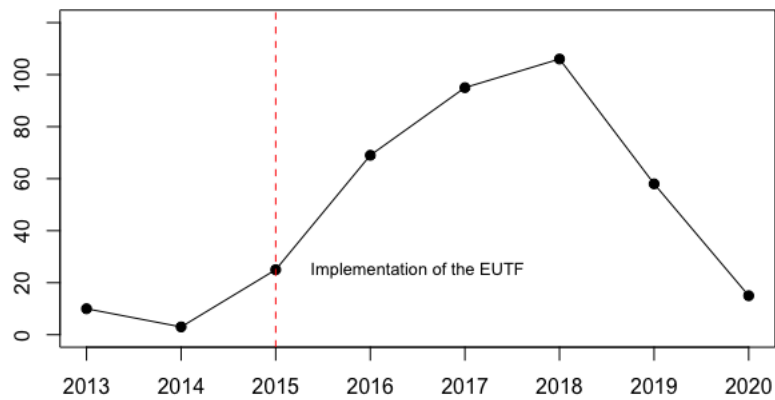


Figure 25: Occurrence of the terms related to migration in the annual activity reports of DG INTPA

Year	2013	2014	2015	2016	2017	2018	2019	2020
Asylum	2	2	5	2	4	5	0	0
Emigration	0	0	0	0	0	0	0	0
Immigrant	0	0	0	0	0	0	0	0
Immigration	3	0	0	0	0	0	0	0
Displacement/ Displaced	0	0	6	21	24	27	21	1
Migrant	3	0	1	16	23	33	7	6
Refugee	1	0	2	8	26	29	16	7
Irregular Migration	1	1	11	22	18	12	14	1
Total	10	3	25	69	95	106	58	15
Migration	52	32	47	73	89	70	49	7
Total with Migration	62	35	72	142	184	176	107	22

Figure 26: Evolution of the frequency of the terms related to migration in the annual activity reports of DG INTPA

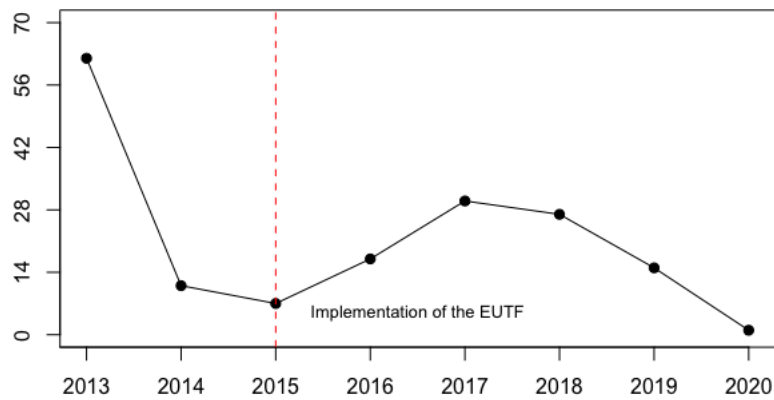


Figure 27: Occurrence of the terms related to migration management in the annual activity Reports of DG INTPA

Year	2013	2014	2015	2016	2017	2018	2019	2020
Removal	0	0	0	0	0	0	0	0
Reintegration	1	0	0	4	10	7	0	0
Work Permit	0	0	0	0	1	0	0	0
Non Refoulement	0	0	0	0	0	0	0	0
Migration Management	1	2	4	6	9	10	7	1
Migration Governance	0	1	1	0	3	2	1	0
Border Management	22	2	0	2	3	2	1	0
Border Governance	0	0	0	0	0	0	0	0
Migration Crisis	0	0	0	0	0	0	0	0
Assisted Voluntary Return	0	0	0	0	0	2	0	0
Border	38	6	2	3	4	6	4	0
Total	62	11	7	17	30	27	15	1
Migration	52	32	47	73	89	70	49	7
Total with Migration	114	43	54	90	119	97	64	8

Figure 28: Evolution of the frequency of the terms related to migration management in the annual activity reports of DG INTPA

2010	2011	2012	2013	2014	2015
EU	EU	EU	EU	EU	EU
Development	Development	Development	Development	Development	Development
Support	Support	Support	Support	Support	Support
Commission	Million	Million	Eur	Eur	Cooperation
Budget	European	Eur	Million	Million	Eur
Aid	Cooperation	Implementation	Cooperation	Cooperation	Million
Million	Budget	Cooperation	Regional	Program	European
Sector	Commission	Programme	Programme	Regional	Programme
Cooperation	Implementation	Assistance	Budget	New	Asia
Programme	Assistance	European	Commission	European	Regional
Report	Programme	Commission	Education	Commission	Commission
Annual	Good	Budget	Country	Budget	Budget
European	Aid	New	Assistance	Aid	Education
Policy	Sector	Aid	New	Sector	Africa
Assistance	External	Regional	European	Africa	New
Regional	Policy	Sector	Aid	Total	Sector
Implementation	Regional	External	Sector	Sustainable	America
New	Education	Security	Policy	Security	Assistance
Education	Security	Food	Security	Assistance	Total
Social	Region	Policy	Implementation	Implementation	Energy
Food	New	Educational	Total	Energy	Policy
External	Food	Social	Africa	Region	Security
Project	Economic	Energy	Region	Education	South
Economic	Social	Health	South	Programming	Global
Health	Management	Well	National	Policy	Health

Figure 29: Lists of the 25 most frequent words in the annual reports of DG INTPA from 2010 to 2015

2016	2017	2018	2019	2020
EU	EU	EU	EU	EU
Support	Support	Support	Support	Support
Development	Development	Commission	Development	Commission
Million	Eur	European	Commission	European
Eur	Million	Development	European	Million
Cooperation	Cooperation	Annual	Million	Eur
European	Program	Working	Eur	Development
Africa	Budget	Report	Asia	Working
Budget	Energy	Cooperation	Budget	Annual
Regional	New	Staff	Cooperation	Document
New	Implementation	Eur	Working	Staff
Education	Regional	Million	Africa	Report
Energy	Sector	Document	Assistance	Asia
Programme	Programme	Regional	Regional	Covid
Number	Africa	Education	Annual	Africa
Commission	Sustainable	Africa	Report	Budget
Asia	European	Budget	Program	Assistance
Sector	Security	New	Staff	Regional
Assistance	Policy	Energy	Document	America
Security	Number	Assistance	Education	Cooperation
Partner	Assistance	Education	Management	Response
Implementation	Climate	Number	America	South
Policy	People	Implementation	New	New
Sustainable	Management	Policy	Energy	Sustainable
International	Change	Asia	Sustainable	Education

Figure 30: Lists of the 25 most frequent words in the annual reports of DG INTPA from 2016 to 2020

2013	2014	2015	2016	2017	2018	2019	2020
EU	EU	Devco	Devco	Devco	EU	EU	Intpa
Support	Development	EU	Development	Development	Devco	Development	EU
Development	Devco	Management	Management	EU	Management	Management	Eur
Europeaid	Support	Control	Control	Control	Eur	Country	Million
Budget	Management	Support	Eur	Eur	Country	Million	Management
Million	Control	Eur	Million	Million	Million	Support	Covid
Policy	Policy	Result	Commission	Support	Support	European	Commission
Implementation	Number	Million	Support	European	European	Control	Support
Financial	Specific	Commission	Budget	Implementation	Financial	Financial	Development
Programme	Human	Budget	Risk	Financial	Implementation	Implementation	European
Cooperation	Implementation	Financial	New	Commission	Commission	Objective	Page
Devco	Milestone	External	Implementation	External	Commission	External	Internal
New	Cooperation	Page	Policy	Action	External	Policy	Financial
Commission	Indicator	Implementation	Financial	Audit	Africa	Action	Budget
Specific	Target	Risk	Control	Budget	New	Budget	New
Number	Programme	International	Sustainable	Page	Result	New	Audit
Control	European	Internal	Cooperation	Programme	Sustainable	Risk	Risk
Programme	Situation	European	External	Migration	Budget	Page	Sustainable
Plan	Implementation	New	Page	Also	Audit	Also	External
Project	Million	Policy	Internal	Risk	Report	Sustainable	Implementation
Regional	Plan	Payment	Audit	Internal	Risk	Audit	Also
Audit	Instrument	Cooperation	Action	Sustainable	Payment	Project	Total
Implemented	Action	Global	Payment	Policy	Global	Programme	Made
Objective	Internal	Contract	Energy	New	Contract	Payment	Assurance

Figure 31: Lists of the 25 most frequent words in the annual activity reports of DG INTPA

2010	2011	2012	2013	2014	2015
EU	EU	EU	EU	EU	EU
Development	Development	Development	Development	Development	Development
Support	Support	Support	Support	Support	Support
Commission	Million	Million	Eur	Eur	Cooperation
Budget	Program	Eur	Million	Million	Eur
Aid	Cooperation	Cooperation	Cooperation	Cooperation	Million
Million	Budget	Implementation	Regional	Program	Regional
Programme	Commission	Programme	Programme	Regional	Programme
Cooperation	Implementation	Assistance	Budget	New	Asia
Sector	Assistance	European	Commission	European	European
Report	European	Commission	New	Commission	Commission
Annual	New	Budget	Total	Budget	Budget
European	Aid	New	Assistance	Aid	Education
Policy	Sector	External	Education	Sector	Africa
Assistance	External	Regional	European	Africa	New
Regional	Policy	Sector	Aid	Total	Sector
Implementation	Regional	Aid	Sector	Energy	America
New	Education	Security	Policy	Security	Assistance
Education	Security	Food	Security	Assistance	Implementation
Social	Region	Policy	Implementation	Implementation	Energy
Food	Good	Educational	Country	Sustainable	Policy
External	Food	Social	Africa	Region	Security
Project	Economic	Energy	Region	Education	South
Economic	Social	Health	South	Policy	Global
Health	Management	Well	National	International	Health
Financial	Country	National	Continued	Edf	Central
Management	Energy	Report	Health	Country	International
Security	Report	Union	International	Global	Number
Good	Health	Good	Energy	South	Partner
Water	Change	Africa	Level	Continued	Region
Energy	Africa	Total	Asia	Asia	Aid
Action	International	Sustainable	Project	Human	Action
Country	Civil	Economic	Human	Joint	Total
Public	Union	Region	Including	Level	Framework
Africa	National	Continued	Financial	Programming	Sustainable

Figure 32: Lists of the 35 most frequent words around migration in the annual reports of DG INTPA from 2010 to 2015

2016	2017	2018	2019	2020
EU	EU	EU	EU	EU
Support	Support	Support	Support	Support
Development	Development	Commission	Development	Commission
Eur	Eur	European	Commission	European
Million	Million	Development	European	Million
Cooperation	Cooperation	Working	Million	Eur
European	Program	Annual	Eur	Development
Africa	Budget	Report	Asia	Working
Regional	Energy	Document	Budget	Annual
Budget	New	Staff	Cooperation	Report
New	Implementation	Eur	Working	Staff
Education	Regional	Million	Africa	Document
Energy	Sector	Cooperation	Report	Asia
Program	Education	Regional	Regional	Covid
Number	Africa	Program	Annual	Africa
Commission	Sustainable	Africa	Assistance	Budget
Asia	European	Budget	Program	Assistance
Sector	Security	New	Staff	Regional
Assistance	Policy	Energy	Document	America
Security	Number	Assistance	Education	Cooperation
Partner	Climate	Education	Management	Response
Implementation	Assistance	Number	America	South
Policy	People	Implementation	New	New
Sustainable	Management	Policy	Energy	Sustainable
International	Change	Asia	Sustainable	Education
South	Health	Sector	Number	Health
Health	Commission	Management	Policy	Program
Total	Economic	International	South	Central
Global	Global	Sustainable	Security	Humanitarian
Central	Region	Financial	Sector	Financial
Aid	International	Aid	Implementation	Policy
Country	Human	Economic	International	Continued
Climate	National	Access	Humanitarian	Total
Management	Public	Security	Economic	Economic
America	Social	South	Central	Management

Figure 33: Lists of the 35 most frequent words around migration in the annual reports of DG INTPA from 2016 to 2020

2013	2014	2015	2016	2017	2018	2019	2020
EU	EU	Devco	Devco	Devco	EU	EU	Intpa
Support	Development	EU	Development	Development	Devco	Development	EU
Development	Devco	Management	Management	EU	Management	Management	Eur
Budget	Support	Control	Control	Control	Eur	Country	Million
Million	Management	Support	Eur	Eur	Country	Million	Management
Policy	Control	Eur	Million	Million	Million	Support	Covid
Implementation	Policy	Million	Commission	Support	Control	European	Commission
Financial	Number	Commission	Support	European	Support	Control	Support
Programme	Specific	Budget	Budget	Implementation	European	Financial	Development
Cooperation	Human	Control	Risk	Financial	Financial	Implementation	European
Devco	Implementation	Financial	New	Commission	Implementation	Objective	Page
New	Milestone	External	Implementation	External	Commission	External	Internal
Commission	Cooperation	Page	Policy	Action	External	Policy	Financial
Specific	Indicator	Implementation	Financial	Audit	Africa	Action	Budget
Number	Target	Risk	Control	Budget	New	Budget	New
Control	Programme	International	Sustainable	Page	Result	New	Audit
Plan	European	Internal	Cooperation	Programme	Sustainable	Risk	Risk
Regional	Situation	European	External	Also	Policy	Page	Sustainable
Audit	Implementation	New	Page	Risk	Programme	Africa	External
Result	Million	Policy	Internal	Internal	Also	Sustainable	Implementation
Implementation	Plan	Payment	Audit	Sustainable	Project	Audit	Also
Objective	Instrument	Cooperation	Action	Policy	Cooperation	Project	Total
Total	Action	Global	Payment	New	Payment	Programme	Made
Action	Internal	Also	Energy	Cooperation	Amount	Payment	Assurance
Main	Audit	Audit	Amount	Global	European	Energy	Expenditure
Level	Current	Total	Climate	Report	Climate	Internal	Global
European	Budget	Year	European	Made	Action	Instrument	Information
Project	Commission	Action	Africa	Amount	Regional	Total	Amount
Target	Regional	Implementation	Expenditure	General	Total	Cooperation	Relevant
Also	Level	Error	Made	International	Indicator	Made	Data
External	Baseline	Action	Report	Climate	Investment	International	Level
Delegation	International	Africa	Action	Plan	Year	Report	Action
Indicator	External	Amount	Total	Well	Audit	Commission	System
Global	Global	Report	Global	Investment	African	Well	Performance

Figure 34: Lists of the 35 most frequent words around migration in the annual activity reports of DG INTPA

Recipient Countries	Recipient Countries
Angola	Morocco
Burundi	Madagascar
Benin	Mali
Burkina Faso	Mozambique
Botswana	Mauritania
Central African Republic	Mauritius
Côte d'Ivoire	Malawi
Cameroon	Namibia
Democratic Republic of the Congo	Niger
Congo	Nigeria
Comoros	Rwanda
Cabo Verde	Sudan
Djibouti	Senegal
Algeria	Sierra Leone
Egypt	Somalia
Eritrea	South Sudan
Ethiopia	Sao Tome and Principa
Gabon	Eswatini
Ghana	Seychelles
Guinea	Chad
Gambia	Togo
Guinea-Bissau	Tunisia
Equatorial Guinea	Tanzania
Kenya	Uganda
Liberia	South Africa
Libya	Zambia
Lesotho	Zimbabwe

Figure 35: Evolution of the frequency of the terms related to migration management in the annual activity reports of DG INTPA

Year	Value of the Salience variable
2010	1
2011	0,83
2012	0,7
2013	0,65
2014	0,78
2015	1,53
2016	1,73
2017	1,83
2018	1,45
2019	1,33
2020	1,27

Figure 36: Values taken by the salience variable

Estimation of the gravity model using bilateral aid data (including negative aid) and asylum seekers data:

VARIABLES	(1) Asylum Seekers	(2) Asylum Seekers	(3) Asylum Seekers	(4) Asylum Seekers	(5) Asylum Seekers
$\ln(1 + Aid_{t-1})$	0.161*** (0.0269) [0.0629]	0.271*** (0.0297) [0.0633]	0.284*** (0.0347) [0.0646]	0.0820*** (0.0216) [0.0316]	0.0641 (0.319) [0.569]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$		-0.158*** (0.0321) [0.0498]	-0.180*** (0.0484) [0.0507]	-0.110*** (0.0185) [0.0407]	-0.110*** (0.0185) [0.0409]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$					0.00212 (0.0380) [0.0688]
Constant	7.826*** (0.0799) [0.192]	7.823*** (0.0771) [0.190]	7.901*** (0.0739) [0.203]	8.656*** (0.0515) [0.0756]	8.656*** (0.0535) [0.0852]
Observations	16,485	16,485	15,944	9,945	9,945
Time FE	YES	YES	YES	YES	YES
Origin FE	YES	YES	NO	NO	NO
Destination FE	YES	YES	NO	NO	NO
Origin Time FE	NO	NO	YES	YES	YES
Destination Time FE	NO	NO	YES	YES	YES
Destination Origin FE	NO	NO	NO	YES	YES

Robust standard errors in parentheses

Robust standard errors clustered at the origin and destination are reported into brackets

*** p<0.01, ** p<0.05, * p<0.1

Figure 37: Estimation of the gravity model including negative aid data

VARIABLES	(1) Asylum Seekers	(2) Asylum Seekers	(3) Asylum Seekers	(4) Asylum Seekers	(5) Asylum Seekers
$\ln(1 + Aid_{t-1})$	0.161*** (0.0269) [0.0629]	0.392*** (0.0517) [0.0718]	0.458*** (0.0777) [0.0757]	0.171*** (0.0307) [0.0500]	0.175 (0.323) [0.578]
$\ln(1 + Aid_{t-1}) \times Salience_t$		-0.180*** (0.0417) [0.0517]	-0.232*** (0.0638) [0.0583]	-0.125*** (0.0211) [0.0413]	-0.125*** (0.0211) [0.0415]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$					-0.000465 (0.0383) [0.0691]
Constant	7.826*** (0.0799) [0.192]	7.823*** (0.0765) [0.189]	7.897*** (0.0719) [0.199]	8.646*** (0.0517) [0.0744]	8.646*** (0.0537) [0.0840]
Observations	16,485	16,485	15,944	9,945	9,945
Time FE	YES	YES	YES	YES	YES
Origin FE	YES	YES	NO	NO	NO
Destination FE	YES	YES	NO	NO	NO
Origin Time FE	NO	NO	YES	YES	YES
Destination Time FE	NO	NO	YES	YES	YES
Destination Origin FE	NO	NO	NO	YES	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 38: Estimation of the gravity model including negative aid data

VARIABLES	(1) Asylum Seekers	(2) Asylum Seekers	(3) Asylum Seekers	(4) Asylum Seekers	(5) Asylum Seekers
$\ln(1 + Aid_{t-1})$	0.161*** (0.0269) [0.0629]	0.321*** (0.0748) [0.0553]	0.436*** (0.121) [0.0771]	0.124*** (0.0382) [0.0468]	0.120 (0.320) [0.564]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$		-0.110 (0.0720) [0.0710]	-0.0345 (0.114) [0.0710]	-0.0706** (0.0347) [0.0555]	-0.0706** (0.0347) [0.0554]
$\ln(1 + Aid_{t-1}) \times Salience_t$		-0.0650 (0.0934) [0.0626]	-0.196 (0.149) [0.0863]	-0.0529 (0.0393) [0.0446]	-0.0529 (0.0392) [0.0443]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$					0.000463 (0.0380) [0.0686]
Constant	7.826*** (0.0799) [0.192]	7.823*** (0.0767) [0.189]	7.897*** (0.0721) [0.200]	8.653*** (0.0519) [0.0760]	8.653*** (0.0539) [0.0855]
Observations	16,485	16,485	15,944	9,945	9,945
Time FE	YES	YES	YES	YES	YES
Origin FE	YES	YES	NO	NO	NO
Destination FE	YES	YES	NO	NO	NO
Origin Time FE	NO	NO	YES	YES	YES
Destination Time FE	NO	NO	YES	YES	YES
Destination Origin FE	NO	NO	NO	YES	YES

Robust standard errors in parentheses

Robust standard errors clustered at the origin and destination are reported into brackets

*** p<0.01, ** p<0.05, * p<0.1

Figure 39: Estimation of the gravity model including negative aid data

Estimation of the gravity model using bilateral aid data
(including negative aid) and migrants data:

VARIABLES	(1) Migrants	(2) Migrants	(3) Migrants	(4) Migrants	(5) Migrants
$\ln(1 + Aid_{t-1})$	0.318*** (0.0365) [0.0670]	0.376*** (0.0445) [0.0728]	0.487*** (0.0472) [0.0687]	-0.0540*** (0.0167) [0.0236]	-0.565*** (0.148) [0.215]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$		-0.102*** (0.0373) [0.0327]	-0.183** (0.0722) [0.0628]	0.0229 (0.0183) [0.0281]	0.0217 (0.0186) [0.0275]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$					0.0653*** (0.0184) [0.0265]
Constant	6.878*** (0.126) [0.232]	6.869*** (0.125) [0.231]	6.739*** (0.118) [0.233]	8.476*** (0.0491) [0.0570]	8.461*** (0.0495) [0.0576]
Observations	11,772	11,772	10,867	8,801	8,801
Time FE	YES	YES	YES	YES	YES
Origin FE	YES	YES	NO	NO	NO
Destination FE	YES	YES	NO	NO	NO
Origin Time FE	NO	NO	YES	YES	YES
Destination Time FE	NO	NO	YES	YES	YES
Destination Origin FE	NO	NO	NO	YES	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 40: Estimation of the gravity model including negative aid data

VARIABLES	(1) Migrants	(2) Migrants	(3) Migrants	(4) Migrants	(5) Migrants
$\ln(1 + Aid_{t-1})$	0.318*** (0.0365) [0.0670]	0.478*** (0.0632) [0.0840]	0.674*** (0.0859) [0.0900]	-0.0570** (0.0275) [0.0438]	-0.570*** (0.152) [0.221]
$\ln(1 + Aid_{t-1}) \times Salience_t$		-0.130*** (0.0416) [0.0386]	-0.236*** (0.0750) [0.0781]	0.0134 (0.0219) [0.0340]	0.0119 (0.0221) [0.0335]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$					0.0656*** (0.0185) [0.0266]
Constant	6.878*** (0.126) [0.232]	6.868*** (0.124) [0.229]	6.737*** (0.116) [0.231]	8.472*** (0.0504) [0.0573]	8.457*** (0.0509) [0.0584]
Observations	11,772	11,772	10,867	8,801	8,801
Time FE	YES	YES	YES	YES	YES
Origin FE	YES	YES	NO	NO	NO
Destination FE	YES	YES	NO	NO	NO
Origin Time FE	NO	NO	YES	YES	YES
Destination Time FE	NO	NO	YES	YES	YES
Destination Origin FE	NO	NO	NO	YES	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 41: Estimation of the gravity model including negative aid data

VARIABLES	(1) Migrants	(2) Migrants	(3) Migrants	(4) Migrants	(5) Migrants
$\ln(1 + Aid_{t-1})$	0.318*** (0.0365) [0.0670]	0.488*** (0.0903) [0.0807]	0.695*** (0.180) [0.123]	0.00946 (0.0460) [0.0517]	-0.502*** (0.155) [0.207]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$		0.0131 (0.105) [0.0674]	0.0259 (0.226) [0.121]	0.0834* (0.0465) [0.0475]	0.0829* (0.0471) [0.0472]
$\ln(1 + Aid_{t-1}) \times Salience_t$		-0.144 (0.118) [0.0831]	-0.265 (0.245) [0.158]	-0.0798 (0.0554) [0.0569]	-0.0808 (0.0557) [0.0573]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$					0.0654*** (0.0181) [0.0263]
Constant	6.878*** (0.126) [0.232]	6.868*** (0.124) [0.229]	6.737*** (0.116) [0.231]	8.476*** (0.0481) [0.0575]	8.461*** (0.0485) [0.0577]
Observations	11,772	11,772	10,867	8,801	8,801
Time FE	YES	YES	YES	YES	YES
Origin FE	YES	YES	NO	NO	NO
Destination FE	YES	YES	NO	NO	NO
Origin Time FE	NO	NO	YES	YES	YES
Destination Time FE	NO	NO	YES	YES	YES
Destination Origin FE	NO	NO	NO	YES	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 42: Estimation of the gravity model including negative aid data

Estimation of the gravity model using EU aid data (including negative aid) and asylum seekers data:

VARIABLES	(1) Asylum Seekers	(2) Asylum Seekers	(3) Asylum Seekers
$\ln(1 + Aid_{t-1})$	-0.0158 (0.0569) [0.117]	0.144*** (0.0517) [0.0968]	1.395 (0.855) [1.478]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$		-0.179*** (0.0382) [0.0638]	-0.172*** (0.0385) [0.0641]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$			-0.149 (0.104) [0.180]
Constant	10.43*** (0.246) [0.505]	10.28*** (0.203) [0.407]	10.35*** (0.223) [0.444]
Observations	589	589	589
Time FE	YES	YES	YES
Origin FE	YES	YES	NO
Destination FE	YES	YES	NO
Origin Time FE	NO	NO	NO
Destination Time FE	NO	NO	NO
Destination Origin FE	NO	NO	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 43: Estimation of the gravity model including negative aid data

VARIABLES	(1) Asylum Seekers	(2) Asylum Seekers	(3) Asylum Seekers
$\ln(1 + Aid_{t-1})$	-0.0158 (0.0569) [0.117]	0.203*** (0.0649) [0.118]	2.117** (0.844) [1.578]
$\ln(1 + Aid_{t-1}) \times Salience_t$		-0.166*** (0.0387) [0.0683]	-0.161*** (0.0385) [0.0678]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$			-0.228** (0.102) [0.192]
Constant	10.43*** (0.246) [0.505]	10.42*** (0.227) [0.485]	10.52*** (0.242) [0.514]
Observations	589	589	589
Time FE	YES	YES	YES
Origin FE	YES	YES	NO
Destination FE	YES	YES	NO
Origin Time FE	NO	NO	NO
Destination Time FE	NO	NO	NO
Destination Origin FE	NO	NO	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 44: Estimation of the gravity model including negative aid data

VARIABLES	(1) Asylum Seekers	(2) Asylum Seekers
$\ln(1 + Aid_{t-1})$	1.340 (0.898) [1.535]	1.340 (0.898) [1.535]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$	-0.186*** (0.0711) [0.0748]	-0.186*** (0.0711) [0.0748]
$\ln(1 + Aid_{t-1}) \times Salience_t$	0.0180 (0.0760) [0.0702]	0.0180 (0.0760) [0.0702]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$	-0.144 (0.107) [0.186]	-0.144 (0.107) [0.186]
Constant	10.33*** (0.237) [0.471]	10.33*** (0.237) [0.471]
Observations	589	589
Time FE	YES	YES
Origin FE	YES	NO
Destination FE	YES	NO
Origin Time FE	NO	NO
Destination Time FE	NO	NO
Destination Origin FE	NO	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 45: Estimation of the gravity model including negative aid data

Estimation of the gravity model using EU aid data (including negative aid) and migrants data:

VARIABLES	(1) Migrants	(2) Migrants	(3) Migrants
$\ln(1 + Aid_{t-1})$	-0.0467 (0.0443) [0.0687]	-0.00697 (0.0479) [0.0590]	-0.701 (0.547) [0.730]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$		-0.0583 (0.0371) [0.0357]	-0.0597 (0.0369) [0.0366]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$			0.0846 (0.0658) [0.0883]
Constant	10.08*** (0.213) [0.329]	10.05*** (0.206) [0.298]	10.11*** (0.213) [0.301]
Observations	535	535	535
Time FE	YES	YES	YES
Origin FE	YES	YES	NO
Destination FE	YES	YES	NO
Origin Time FE	NO	NO	NO
Destination Time FE	NO	NO	NO
Destination Origin FE	NO	NO	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and
destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 46: Estimation of the gravity model including negative aid data

VARIABLES	(1) Migrants	(2) Migrants	(3) Migrants
$\ln(1 + Aid_{t-1})$	-0.0467 (0.0443) [0.0687]	0.0519 (0.0603) [0.0584]	-0.579 (0.551) [0.743]
$\ln(1 + Aid_{t-1}) \times Salience_t$		-0.0767** (0.0373) [0.0449]	-0.0765** (0.0373) [0.0459]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$			0.0769 (0.0656) [0.0897]
Constant	10.08*** (0.213) [0.329]	10.06*** (0.202) [0.297]	10.11*** (0.209) [0.300]
Observations	535	535	535
Time FE	YES	YES	YES
Origin FE	YES	YES	NO
Destination FE	YES	YES	NO
Origin Time FE	NO	NO	NO
Destination Time FE	NO	NO	NO
Destination Origin FE	NO	NO	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and
destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 47: Estimation of the gravity model including negative aid data

VARIABLES	(1) Migrants	(2) Migrants
$\ln(1 + Aid_{t-1})$	-0.541 (0.556) [0.735]	-0.541 (0.556) [0.735]
$\ln(1 + Aid_{t-1}) \times Post_{2015}$	0.0223 (0.0955) [0.0673]	0.0223 (0.0955) [0.0673]
$\ln(1 + Aid_{t-1}) \times Salience_t$	-0.100 (0.0973) [0.0941]	-0.100 (0.0973) [0.0941]
$\ln(1 + Aid_{t-1}) \times \ln(Dist)$	0.0741 (0.0655) [0.0895]	0.0741 (0.0655) [0.0895]
Constant	10.12*** (0.209) [0.311]	10.12*** (0.209) [0.311]
Observations	535	535
Time FE	YES	YES
Origin FE	YES	NO
Destination FE	YES	NO
Origin Time FE	NO	NO
Destination Time FE	NO	NO
Destination Origin FE	NO	YES

Robust standard errors in parentheses
Robust standard errors clustered at the origin and
destination are reported into brackets
*** p<0.01, ** p<0.05, * p<0.1

Figure 48: Estimation of the gravity model including negative aid data

References

- Alesina, A., & Dollar, D. (2000). Who gives foreign aid to whom and why? *Journal of economic growth*, 5(1), 33–63.
- Anderson, J. E. (2011). The gravity model. *Annu. Rev. Econ.*, 3(1), 133–160.
- Balahur, A., Steinberger, R., Kabadjov, M., Zavarella, V., van der Goot, E., Halkia, M., ... Belyaeva, J. (2013). Sentiment analysis in the news.
- Beine, M., Bertoli, S., & Fernández-Huertas Moraga, J. (2016). A practitioners' guide to gravity models of international migration. *The World Economy*, 39(4), 496–512.
- Beine, M. A., Docquier, F., & Ozden, C. (2011). Diaspora effects in international migration: Key questions and methodological issues. *World Bank Policy Research Working Paper*(5721).
- Berthélemy, J.-C., Beuran, M., & Maurel, M. (2009). Aid and migration: Substitutes or complements? *World Development*, 37(10), 1589–1599.
- Blei, D., & Lafferty, J. (2006). *Dynamic topic models*. Association for Computing Machinery.
- Clemens, M. A. (2014). Does development reduce migration? *International handbook on migration and economic development*.
- Clemens, M. A., & Postel, H. M. (2018). Deterring emigration with foreign aid: An overview of evidence from low-income countries. *Population and Development Review*, 44(4), 667.
- Clemens, M. A., Radelet, S., Bhavnani, R. R., & Bazzi, S. (2012). Counting chickens when they hatch: Timing and the effects of aid on growth. *The Economic Journal*, 122(561), 590–617.
- Clist, P., & Restelli, G. (2021). Development aid and international migration to Italy: Does aid reduce irregular flows? *The World Economy*, 44(5), 1281–1311.
- Crozet, M. (2004). Do migrants follow market potentials? an estimation of a new economic geography model. *Journal of Economic geography*, 4(4), 439–458.
- Dreher, A., Fuchs, A., & Langlotz, S. (2019). The effects of foreign aid on refugee flows. *European Economic Review*, 112, 127–147.
- Dreher, A., Langlotz, S., & Marchesi, S. (2017). Information transmission and ownership consolidation in aid programs. *Economic Inquiry*, 55(4), 1671–1688.
- Dustmann, C., & Okatenko, A. (2014). Out-migration, wealth constraints, and the quality of local amenities. *Journal of Development Economics*, 110.
- Eisensee, T., & Strömberg, D. (2007). News droughts, news floods, and US disaster relief. *The Quarterly Journal of Economics*, 122(2), 693–728.
- European-Commission. (2012). *Annual report 2011 on the European Union's development and external assistance policies and their implementation in 2010*. Publications Office. Retrieved from <https://data.europa.eu/doi/10.2783/75189>
- European-Commission. (2013). *Annual report 2012 on the European Union's development and external assistance policies and their implementation in 2011*. Publications Office. Retrieved from <https://data.europa.eu/doi/10.2841/60357>
- European-Commission. (2014). *Annual report 2013 on the European Union's development and external assistance policies and their implementation in 2012*. Publications Office.

- Retrieved from <https://data.europa.eu/doi/10.2841/93918>
- European-Commission. (2015). *Annual report 2014 on the european union's development and external assistance policies and their implementation in 2013*. Publications Office. Retrieved from <https://data.europa.eu/doi/10.2841/73594>
- European-Commission. (2016). *Annual report 2015 on the european union's development and external assistance policies and their implementation in 2014*. Publications Office. Retrieved from <https://data.europa.eu/doi/10.2841/001567>
- European-Commission. (2017). *Annual report 2016 on the european union's development and external assistance policies and their implementation in 2015*. Publications Office. Retrieved from <https://data.europa.eu/doi/10.2841/6670>
- European-Commission. (2018). *Annual report 2017 on the european union's development and external assistance policies and their implementation in 2016*. Publications Office. Retrieved from <https://data.europa.eu/doi/10.2841/168840>
- European-Commission. (2019). *Annual report 2018 on the european union's development and external assistance policies and their implementation in 2017*. Publications Office. Retrieved from <https://data.europa.eu/doi/10.2841/852782>
- European-Commission. (2020). *Annual report 2019 on the european union's development and external assistance policies and their implementation in 2018*. Publications Office. Retrieved from <https://data.europa.eu/doi/10.2841/301511>
- European-Commission. (2021). *Annual report 2020 on the european union's development and external assistance policies and their implementation in 2019*. Publications Office. Retrieved from <https://data.europa.eu/doi/10.2841/786862>
- European-Commission. (2022). *Annual report 2021 on the european union's development and external assistance policies and their implementation in 2020*. Publications Office. Retrieved from <https://data.europa.eu/doi/10.2841/811907>
- Faye, M., & Niehaus, P. (2012). Political aid cycles. *American Economic Review*, 102(7), 3516–30.
- Gamso, J., & Yuldashev, F. (2018). Does rural development aid reduce international migration? *World Development*, 110, 268–282.
- Garcia, A. J., Pindolia, D. K., Lopiano, K. K., & Tatem, A. J. (2015). Modeling internal migration flows in sub-saharan africa using census microdata. *Migration Studies*, 3(1), 89–110.
- Gentzkow, M., Kelly, B., & Taddy, M. (2019). Text as data. *Journal of Economic Literature*, pp 535–574.
- Hansson, M. (2021). Evolution of topics in central bank speech communication.
- Lanati, M., & Thiele, R. (2018). The impact of foreign aid on migration revisited. *World development*, 111, 59–74.
- Lee, E. (1966). A theory of migration. *Demography*, 3(1), 47–57.
- Mayda, A. M. (2010). International migration: A panel data analysis of the determinants of bilateral flows. *Journal of population economics*, 23(4), 1249–1274.
- Mayer, T., & Zignago, S. (2011). *Notes on cepii's distances measures: The geodist database* (Working Papers No. 2011-25). CEPII. Retrieved from <http://www.cepii.fr/CEPII/en/publications/wp/abstract.asp?NoDoc=3877>

- McKinlay, R. D., & Little, R. (1977). A foreign policy model of us bilateral aid allocation. *World Politics*, 30(1), 58–86.
- Meernik, J., Krueger, E. L., & Poe, S. C. (1998). Testing models of us foreign policy: Foreign aid during and after the cold war. *The journal of Politics*, 60(1), 63–85.
- Mejova, Y. (2009). Sentiment analysis: An overview. *University of Iowa, Computer Science Department*.
- Murat, M. (2020). Foreign aid, bilateral asylum immigration and development. *Journal of Population Economics*, 33(1), 79–114.
- OCDE. (2014). Oda official development assistance: disbursements. Retrieved from <https://www.oecd-ilibrary.org/content/data/data-00069-en> doi: <https://doi.org/10.1787/data-00069-en>
- Parsons, C. R., & Winters, L. A. (2014). International migration, trade and aid: A survey. In *International handbook on migration and economic development* (pp. 65–112). Edward Elgar Publishing.
- Qian, N. (2015). Making progress on foreign aid. *Annu. Rev. Econ.*, 7(1), 277–308.
- Raty, T., & Shilhav, R. (2020). The eutf trapped between aid policy and migration politics. *Oxfam*.
- Ravenstein, E. G. (1889). The laws of migration. *Journal of the royal statistical society*, 52(2), 241–305.
- Rodrigue, J.-P. (2020). *The geography of transport systems*. Routledge.
- Schraeder, P. J., Hook, S. W., & Taylor, B. (1998). Clarifying the foreign aid puzzle: A comparison of american, japanese, french, and swedish aid flows. *World politics*, 50(2), 294–323.
- Silva, J. M. C. S., & Tenreyro, S. (2006). The Log of Gravity. *The Review of Economics and Statistics*, 88(4), 641–658.
- Tinbergen, J. (1962). Shaping the world economy; suggestions for an international economic policy.