

**UNIVERSIDAD SAN FRANCISCO DE QUITO**

**School of Economics**

**Finding Home in Exile: Perspectives on Migration Empirics**

**María Alejandra Marchán Cascante**  
**Economics**

Capstone Project

Quito, May 10th, 2021

## AGRADECIMIENTOS

Agradezco principalmente a Dios por haberme dado la fuerza necesaria durante estos años para completar mi carrera, por poner a las personas indicadas en mi camino y con cada experiencia ayudarme a crecer como persona.

Quiero dedicar este trabajo a mi abuelito Gustavo Cascante, un hombre brillante, excelente profesional y maravilloso ser humano. Gracias por enseñarme que con esfuerzo puedo lograr cada uno de mis sueños, que rendirse no es una opción y que debo creer en mí siempre. Le agradezco por compartir conmigo sus conocimientos, por ser mi mayor inspiración y el mejor papá que la vida me pudo dar. Quiero agradecer a mi mami Alexandra Cascante, por ser un gran ejemplo de valentía y perseverancia. Gracias por ser mi heroína y luchar cada día para vivir muchos momentos más juntas. Gracias por ser mi más grande apoyo y mi mejor amiga, por entenderme, hacerme sonreír en días buenos y malos, darme grandes lecciones de vida e inspirarme a seguir adelante incluso en los momentos más difíciles. También agradezco a mi abuelita Eugenia Viteri, por ser mi segunda mamá y un gran ejemplo de altruismo, por enseñarme a ser disciplinada, decidida, fuerte y luchar por cada uno de mis objetivos. Gracias por haber estado en cada etapa de mi vida, por apoyarme incondicionalmente, impulsarme a vivir mis sueños sin importar qué tan grandes sean. Gracias por protegerme y querer verme feliz siempre.

Quiero agradecer a Daniel Sánchez, por ser un novio increíble, mi mejor amigo y compañero de sueños. Gracias por ser un gran ejemplo de valentía y resistencia, por inspirarme a ser mejor cada día, por motivarme a confiar en mí y en mis capacidades. Gracias por tu apoyo incondicional y tiempo, por motivarme en los momentos más complicados, entenderme, y sobre todo darme mucha paz y felicidad. Gracias a mi prima Alexandra Salazar y mi mejor amiga Doménica Muñoz por haberme acompañado y apoyado durante todos estos años. Ha sido un honor crecer junto a ustedes, gracias por todas las enseñanzas, y por haber compartido tantos momentos y experiencias juntas. Gracias por ser incondicionales y estar siempre conmigo.

Agradezco a mi tutor Julio Acuña por su apoyo durante la elaboración de este trabajo.

## ABSTRACT

This paper contributes to the literature on the determinants of migration, focusing on the relevance of national level indicators on the International Migrant Stock. In contrast to the existing literature, I make a general analysis, considering all the countries around the world as possible destinations for migrants. I implement an econometric model over cross-sectional data for 2015 on territories included in the World Bank databases and estimate linear models through OLS. I find that a higher income per capita, less time required to start a business and more control of corruption are positive factors on the international migrant stock. A country more culturally diverse is related to higher migrant levels, perhaps because it facilitates social and economic integration. Democracy is significant for the models; however, its coefficient is negative, which is contradictory with literature on migration. With more complex functional forms, I discover that countries located in Middle East and North Africa, where most rich-oil exporting countries are located, have higher migration flows yet lower democracy scores. When analyzing democracy in the western hemisphere, it is found that the effect is positive on migration, but just for countries with an income per capita approximately over 28 thousand 2017 PPP dollars. Democracy is likely endogenous and calls for further investigation for its unbiased estimation.

**Keywords:** Migration, GDP per capita, Ethnic diversity, Corruption, Democracy, Middle East and North Africa, Western hemisphere, Linear models.

## **TABLE OF CONTENTS**

<b>INTRODUCTION</b>	<b>7</b>
<b>LITERATURE REVIEW</b>	<b>9</b>
<b>EMPIRICAL APPROACH</b>	<b>13</b>
<b>RESULTS DISCUSSION</b>	<b>14</b>
The effect of economic, political, and cultural indicators . . . . .	14
Exploring the democracy variable . . . . .	19
<b>CONCLUSIONS</b>	<b>31</b>
<b>REFERENCES</b>	<b>35</b>
<b>APPENDIX A: VARIABLES USED IN THE STUDY</b>	<b>37</b>
<b>APPENDIX B: DESCRIPTIVE STATISTICS</b>	<b>40</b>
<b>APPENDIX C: COUNTRY LISTS FOR REDUCED SAMPLES</b>	<b>41</b>
North Africa and Middle East countries . . . . .	41
Western Hemisphere countries . . . . .	41

## INDEX OF TABLES

1	Models considering economic, political and cultural indicators . . . . .	15
2	Models exploring the democracy coefficient . . . . .	21
3	Variable descriptions . . . . .	37
4	Descriptive statistics for all continuous variables in the database . . . . .	40
5	Countries in the Middle East and North Africa, left out in the model of the sixth column of Table 2 . . . . .	42
6	Countries in the western hemisphere considered for the model in the sixth column of Table 2 . . . . .	43

## INDEX OF FIGURES

1	International Migrant Stock Choropleth Map . . . . .	17
2	Political Regime (Democracy Score) Choropleth Map . . . . .	19
3	Democracy scores by income per capita and oil rents . . . . .	23
4	International migrant stock (% of total population) by democracy score and income per capita . . . . .	24
5	Political stability and absence of violence (PSA) by income per capita and democ- racy score . . . . .	26
6	Historical Index of Ethnic Fractionalization Choropleth Map . . . . .	28
7	Partial Effects (PE) of Democracy and Income Per Capita on International Migrant Stocks in the Western Hemisphere . . . . .	30

## INTRODUCTION

Human migration is a global phenomenon that over the years has impacted different territories around the world, changing their ethnic, racial, and linguistic compositions (Encyclopaedia Britannica, 2021). In general, immigrants not only look for an improvement in their quality of life and opportunities abroad, also they tend to look for ways to help their families at their origin country. It is important to know the mechanisms that determine migration, since according to Murugarra et al. (2011), migration has historically reduced poverty, especially at the country of origin, through the remittances sent from migrants abroad. Migration is often also featured in political discourse and the rationale for many policy decisions, as it can affect labor markets (Abel et al., 2014) and thus affect economic behavior for all agents in them.

To analyze global migration, the most intuitive way of looking at the migrant's decision is to consider relative richness between countries. It is naturally expected that migrants, above all, contemplate richer countries as their prime destiny, since they are thought to be unsatisfied with the current economic or social conditions that them or their families endure in the home country. The most obvious way of doing this is by considering the relationship between income per capita and the number of immigrants in a country. According to Sjaastad (1962), one of first researchers to analyze the economic incentives of migration, the relationship between it and income is positive, yet in some cases, this relation is small due to the difficulties in analyzing migration's effects over labor markets when considering net migration. Rather, Sjaastad (1962) proposes a cost-benefit approach to study this connection, which is contingent on many factors of the individual migrant decision. In my work, I will analyze countries and not individuals, so the expected finding with basis to Sjaastad's work is a positive effect of income per capita over migrant stocks. However, it is important to consider other determinants based on culture, immigration policies, economic freedom, governance, and stability, as migration can be a direct consequence of social upheaval due to wars, natural disasters, violence, among others.

This paper aims to explore the principal determinants of migration at a global level, using

the international migrant stock from the World Bank World Development Indicators as the main variable to be investigated. Through an empirical approach, I aim to discover more about what drives migration in the planet, and how different social, political, and demographic circumstances affect migrant stocks. I estimate linear models through OLS that attempt to explain the main determinants for migration, focusing on a country's attractiveness for migrants based on values of indicators. Unlike other studies, I analyze factors which are available at the national level, rather than focusing on specific regions or intranational migration. This means that most of conclusions drawn here, while not exactly separable for origin and destination countries, are relevant on the world level. Conclusions to this objective will be based on the statistical significance of the variables in the empirical models and, most importantly, on the sign of coefficients and how they fit into the research in this topic.

My estimation results show that income per capita, economic freedom, ethnic diversity and the control of corruption are correlated with higher migrant stocks. The models, however, show a limitation when estimating the effect of democracy: while it would be expected to affect migration positively, the models yield the opposite relationship. This might be due to special relationships among variables in some regions of the world, especially the Middle East and North Africa. When restricting my analysis to countries in the western hemisphere I find that income per capita and democracy affect migration stocks jointly: richer and more democratic countries are correlated with higher migrant stocks. Richer countries only see positive partial effects for values of democracy over 4, that is, only for somewhat democratic regimes (anocracies). More democratic regimes, on the other hand, only see positive partial effects for countries with GDP per capita over 28 thousand 2017 PPP dollars, which is near the 58<sup>th</sup> percentile of the world income distribution in 2015.

The following section includes a brief review of the literature on migration determinants. I later establish my empirical strategy and move on to discuss the estimation results.



## LITERATURE REVIEW

According to Amrith (2014), migration occurs mainly for two general reasons: when people cannot satisfy their necessities where they live or when they are looking for new opportunities and growth. However, migration might also be driven by the needs of the family rather than the needs of the migrant. The empirical work on the determinants of migration has taken into consideration both economic and non-economic variables to get a better understanding of it and the policies that could be applied to foster sustainable migrant flows.

Mayda (2005) studied migration determinants for fourteen OECD countries between 1980 and 1995. She found that geography and demographic factors, such as distance and the share of young population at the origin, are the most important non-economic determinants for migration. Common language and past colonial relationships are not statistically significant factors. Countries with a bigger share of young population have a positive and significant impact on emigration rates. Further, it is suggested that positive pull factors, especially greater income opportunities, are bigger than average for destination countries when their policies of migration are less restrictive; push factors are negative and significant when migration policies relax.

Wesselbaum (2018) reached similar conclusions by analyzing the same group of countries over a larger time span. However, he considered proxies for education and health system, like years of schooling and life expectancy, and found that both are significant for the destination country. Surprisingly, it seems that tertiary level of education reduces incentives of immigration. The study added human capital to the analysis, and it is discovered that higher values of it can make countries less attractive for underskilled migrants. This might be since higher average human capital implies larger gaps between natives and migrants, consequently increasing the difficulty for them to find a job.

When studying determinants for brain migration, by implementing a model that explains the rate of emigration of skilled workers in small states of world regions in 1990 and 2000, Beine et al. (2008) suggested that the violation of property rights is a significant influence for migration

away from origin, as well as political instability, which is especially true for skilled migrants. In addition, religious fractionalization seems to be much more sensitive for small states, this means that, in small states, for a certain level of religion fractionalization, people are three more times willing to migrate, relative to bigger states.

When focusing on the share of young population of migrants, Wesselbaum (2018) contributed with the idea that this share may be an important determinant of migrant flows, as younger people may be more willing to emigrate. At country of destination, he found that population density matters, because immigrants will avoid countries where labor competition is higher, as there they could face conflict over scarce resources. Additional to this, it was established that human capital has a U-shaped effect on destination countries. On the contrary, by analyzing migrant's choice of destination inside Nepal, based on Census and Living Standards Surveys Data, (Fafchamps & Shilpi, 2012) found that, in that region, people tend to emigrate to "high population density areas that are nearby, have good access to amenities, higher average income and consumption, higher housing premium, and where many people share their language and ethnic background" (p.15). Additionally, they mention that the principal reason for moving from one district to another for women is marriage, for children and youth's education, and for adult men it is work (p.6).

All the literature mentioned before considered income as one of the most relevant determinants for migration. Stark and Taylor (1991) explored this factor by studying rural Mexican households in order to find out in what people base their migration decision. One alternative was that they based it on the possibility of higher income for their household. Also, they instead might have been motivated by relative deprivation, which means that they were interested in putting their household in a better position, compared with a specific reference group in their village or area. For international migration, "relatively deprived households are more likely to emigrate than households that are more favorably situated in their village's income distribution" (p. 1176). For internal migration between rural and urban areas, both factors related to income have no direct effects over households' decision to emigrate; this happens because of the perception that it is riskier and more expensive to migrate to a destination where a reference group substitution is possible.

Culture not only plays a fundamental role in economic, political, and social institutions of a country, but also in migration. When talking about international migration it is necessary to consider the role of this factor, since the differences between the culture at origin and at destination may affect migrant flow mechanisms. It would be expected that migrants choose destination countries with a culture similar to their own, or at least a country with a higher level of cultural diversity. The latter could be perceived as more likely to receive migrants and offer opportunities, encouraging harmonious cultural integration. An interesting and different approach about the importance of cultural integration for migration was made by Cameron et al. (2012). They designed laboratory experiments to analyze how migrant's preferences and behaviors change over time when they are living in a country different than their own. They conducted these experiments with Chinese participants living in Australia and suggested that "exposure to Western education has a significant impact on social preferences, preferences for competition, and risk attitudes" (p.24). Additionally, they find that the best approach for cultural integration is through education; however, for some countries like Australia it is more significant to promote multiculturalism rather than seeking a complete cultural integration.

Some studies focus on capturing culture as a principal determinant for migration, as Wang et al. (2016). Their main finding about culture is that the average cultural distance in a country is crucial for migrants; being three times more valuable than geographical proximity. The higher this factor is, the more attractive for younger migrants but less for older ones. Cultural distance is also taken into consideration by Caragliu et al. (2012). In their work they find that "when cultural differences are based on the degree of post-materialist values, the effect of a greater distance seems to foster migratory movements" (p.20). While migrants will be more attracted to more culturally diverse countries, the distance of the home culture with the foreign is negatively related to the migration decision. This suggests that governments that desire to increase immigration inflows should smooth the transition of one culture to another, that is, to narrow the cultural distance between immigrants and the host society, and to make immigrants understand a country's social norms, principles, and institutions. This does not mean that cultural diversity reduces the attractive-

ness of a country to immigrants, it is the nature of the cultural diversity that influences the decision. In addition, they include language as a possible determinant for migration and find that it is a positive factor for attracting migrants. Moreover, their results suggest that institutional and financial distance seem to present a negative effect on migration flows, as Wang et al. (2016) found.

Democracy may also influence a migrant's decision. Little research is concerned about this factor, however, Azad (2020) established a relationship between democracy and migration which is relevant to my study. It is suggested that democracy has a *positive* impact on migration, therefore, a country that is more democratic should be more attractive for migrants: "immigration rises by 29% in the long-run due to democracy" (p.31). Likewise, Prada (2020) determined that for refugees and vulnerable migrants, democracy seems to be positively correlated with migration for a single year cross section of the European Union. This suggests that for any origin or migration situation an immigrant is facing, besides of the economic well-being, it is essential for them to feel that their "rights and freedoms are respected" (p.477). In spite of her analysis, for future studies, she encouraged investigators to add corruption and economic freedom. An empirical approach considering national corruption perceptions was taken by Dimant et al. (2013). Through their study, they demonstrated that high corruption drives skilled migration away and lowers the incentives for returning. Nevertheless, for average migration this finding is "less pronounced and not statistically robust" (p.1274).

## EMPIRICAL APPROACH

Many different sources on our everyday life cite different reasons on why people migrate, and many times is not just a matter of physical distance. Thus, as said before, in contrast with the existing literature, I do not study migration between a group of countries such as the European Union or the OECD. Rather, I use a single year cross section for 2015, and through OLS estimation, relationships between the migrant stocks in countries and other national indicators are studied. I expand the analysis to worldwide migrant flows, moving away from the importance of distance, thus having results valid for all countries. The estimated models part from the following general functional form:

$$IMS = \beta_0 + \beta_1 \ln(GDP_{PC}) + \beta_2(\text{Days to start a business}) + \sum_{j=1}^k \beta_j x_j + u \quad (1)$$

The variable of interest studied in the models is International Migrant Stock (*IMS*) from the World Bank Data, which measures the percentage of people that were born in a different country than in which they live, including refugees (World Bank Group, 2020). Naturally, it would be expected that more desirable destinies for migrants have larger migrant stocks.

All models estimated consider two controls: the natural logarithm of GDP per capita and the days required to start a business. GDP or income per capita here is measured in 2017 PPP dollars, in order to better account for purchasing power differences between countries. The days to start a business proxies economic freedom, which is suggested to be an important control by Prada (2020). Further models consider  $k$  other covariates ( $x_j$ ), which are thought to affect migration too. I explore macroeconomic aggregates, data on immigration policy, demography, democracy, and culture. The main data source for my analysis is the World Bank Dataset, but also other sources for some covariates. All variables used are described in Appendix A, along with their sources. The next section reports tables with OLS estimations of the empirical models, along with heteroskedasticity robust standard errors, with sample corrections.

## RESULTS DISCUSSION

For a better understanding about why people tend to migrate more to some countries than others, a step-by-step analysis through different models is used. This facilitates to establish the significance of each factor on global migration, but most importantly how it changes as I include different variables and functional forms.

### **The effect of economic, political, and cultural indicators**

Table 1 shows models that relate the international migrant stock to key national level variables. The standard controls plus unemployment are studied in the first model of Table 1. As mentioned before, people migrate mainly for improving their quality of life, so it is expected that richer countries will attract more migrants, and this is confirmed by the estimation results. Higher values on the economic freedom variable mean more time required to comply with government-mandated startup procedures. This means that new businesses must comply with more regulation, which may hurt growth in the private sector. Its coefficient in the model in column 1 of Table 1 suggests that countries with less business regulation are preferred; probably because immigrants see less barriers when trying to enter labor markets and more employment opportunities. This is consistent with the sign on the unemployment variable: higher unemployment is related to lower migration.

The model in column 2 of Table 1 considers political indicators. One is the control of corruption index, as suggested by Prada (2020), where higher values imply less corrupt governments (Kaufmann et al., 2010). It is important to note that this variable solely considers perceptions of the private sector about the misuse of public funds, not private sector corruption as corporate fraud, embezzlement or similar activities (Kaufmann et al., 2010). I also consider the political regime score (degree of democracy) as reported by Our World In Data (2015), where higher values imply a more democratic regime. Unemployment loses significance in this model, as the democracy score may already capture those effects. The positive sign on the control of corruption covariate

suggests less corrupt countries are more attractive to migrants. This coincides with Dimant et al. (2013) and Azad (2020). The negative relationship between democracy and international migration stock is counterintuitive, and since it is very significant, it suggests possible spurious correlation or an omitted variable bias.

**Table 1**

*Models considering economic, political and cultural indicators*

	International Migrant Stock (% of population)					
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	−47.162*** (8.110)	−30.467*** (9.265)	−41.892*** (10.905)	−29.384*** (8.613)	−39.272*** (11.966)	−42.452*** (13.830)
Ln GDP per Capita	6.425*** (1.045)	5.184*** (1.162)	6.364*** (1.317)	4.727*** (1.003)	5.236*** (1.201)	5.914*** (1.345)
Unemployment	−0.371** (0.154)	−0.200 (0.146)	−0.217 (0.160)	−0.247* (0.148)	−0.169 (0.147)	−0.079 (0.181)
Days to Start a Business	−0.052*** (0.019)	−0.083*** (0.027)	−0.082*** (0.029)	−0.061** (0.025)	−0.076** (0.032)	−0.071** (0.034)
Control of Corruption		3.536*** (1.249)	3.380*** (1.271)	4.372*** (1.135)	4.392*** (1.162)	4.628*** (1.469)
Democracy		−1.196*** (0.277)	−1.136*** (0.278)	−0.811*** (0.199)	−0.942*** (0.208)	−0.918*** (0.189)
Lower Mig. Policy			6.056* (3.500)	1.423 (3.460)	0.708 (3.627)	0.380 (3.619)
Raise Mig. Policy			−5.964** (2.374)	−5.037** (2.066)	−3.208* (1.768)	−2.487 (1.709)
MENA				16.228*** (5.231)	15.643*** (5.226)	17.417*** (6.356)
Ethnic Diversity					0.114** (0.048)	0.134*** (0.051)
Government Exp. (% of GDP)						−0.336 (0.318)
Observations	172	152	130	130	115	109
Adjusted R <sup>2</sup>	0.319	0.501	0.556	0.632	0.670	0.674

*Note:* Heteroskedasticity robust standard errors with sample correction reported in parentheses. \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Now, I extend my scope by considering immigration policy and world regions in the model in column 2 of Table 1. For immigration policy, I include a dummy variable on the kind of influence a nation's government has reported to have on the immigration policy. A policy on 'Raise' would mean that the government has reported a desire to raise migrant stocks on the nation; there are three different positions to do so: raise, lower, or maintain (United Nations, 2017). The significance of the other determinants stays the same, but the principal finding is that countries that have less migrants are more interested in attracting them through immigration policies. On the other hand, countries with a higher migration stock prefer to implement policies that restrict migration. This could signal worldwide trends on immigration policy: more populated countries try to repel migration to decelerate population growth, whereas less populated countries seek to become larger through openness to migration. This finding is consistent with Wesselbaum (2018). One of the underlying economic reasons of this might be the sustainability of each country's retirement system. Countries with low population may seek to increase their employment levels on the short run to fund pensions for retired native workers, who increase as the population growth rate decreases (Abel et al., 2014). Besides, higher employment would invite higher economic growth, higher tax receipts and perhaps a bigger inflow of foreign capitals (due to a growing economy, conditional on economic freedom).

Due to high levels of migration in the Middle East and North Africa (MENA), I added a dummy variable for this region<sup>1</sup>, which can be seen in the model in column 4 of Table 1. The coefficient says that a country that belongs to MENA has, on average, a higher migrant stock, which can also be inferred from Figure 1. The ongoing political and social conflicts that this region presents may cause this. For a lot of MENA inhabitants, the best solution may be to migrate wherever they can, even if it is to their neighboring countries. This suggests that high migration inside the region may be partly due to refugee crises. Here, democracy seems to be just as important as before but its magnitude decreases, which may suggest that the counterintuitive sign in the democracy variable happens partly due to region effects. The 'Lower' dummy is no longer significant once the region

---

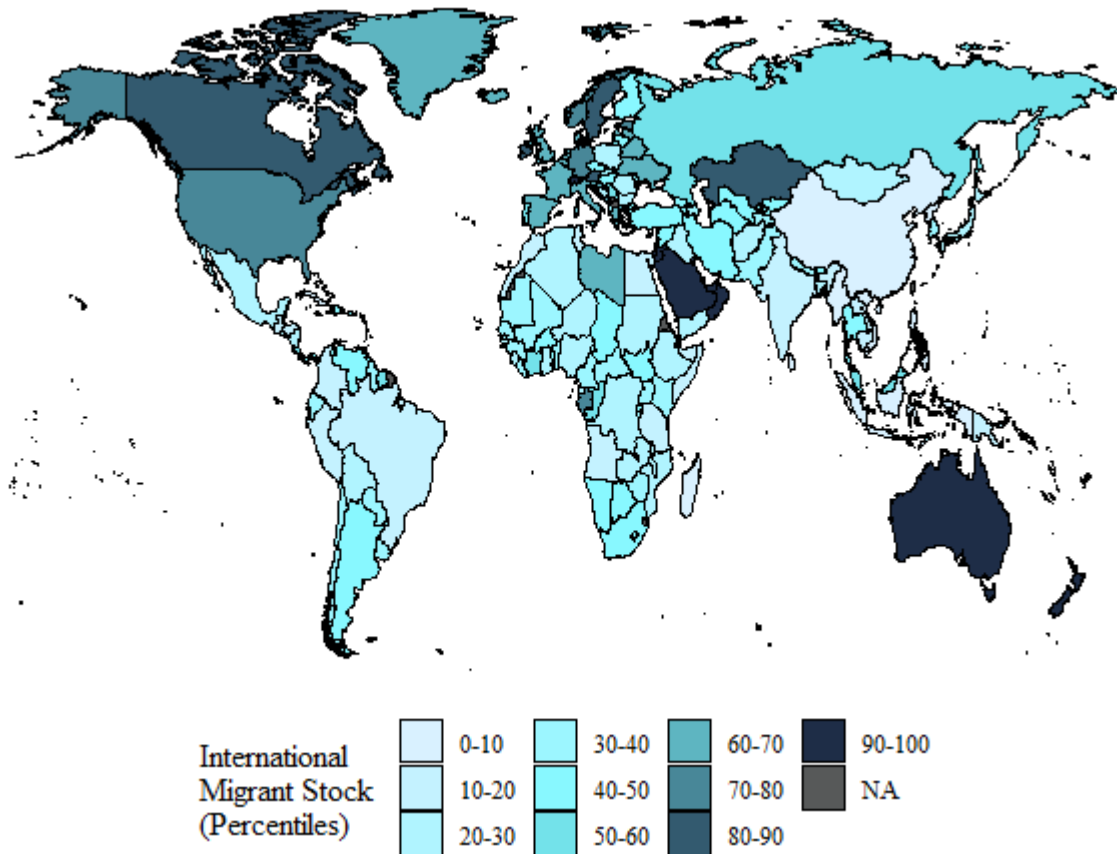
<sup>1</sup> See Appendix C for a list of countries for which the dummy equals one.



dummy is accounted for.

**Figure 1**

*International Migrant Stock Choropleth Map*



*Note:* Data from the World Bank's International Migrant Stock (% of total population), from the World Development Indicators. Elaborated by the Author.

The model in the fifth column of Table 1, adds the Historical Index of Ethnic Fractionalization for 2013, which represents “the likelihood that two people chosen at random within a given country will be from different ethnic groups” (Drazanova, 2019, pp.1). There is no data available for 2015 for this covariate, however, this two-year lag might help account for the fact that ethnic diversity takes time to accommodate. As reviewed before, a country that is more culturally diverse can be seen as more tolerant; migrants can feel more confident and hope to find people from a

similar cultural background. The model results are consistent with this, and the other variables keep their significance with the exception of the ‘Raise’ policy dummy, which has a reduction in importance. This might happen because countries that desire to increase migration levels might also have relatively higher values of ethnic diversity, thus this variable better captures the effects of an open migration policy on migrant stocks. Unemployment presents unstable significance; I keep including it to see its relationship with new variables.

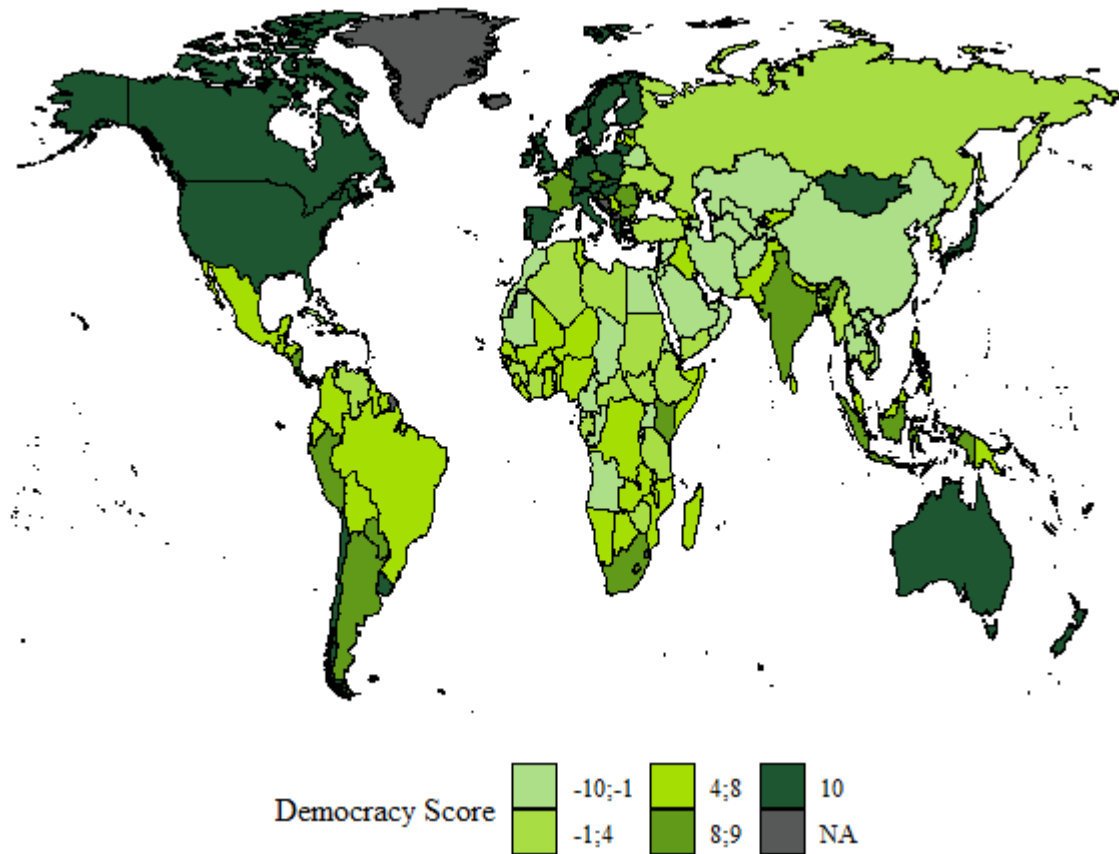
The model in column 6 of Table 1 includes government expenditure. In this case, the policy dummies lose significance, and unemployment still has none. The policy dummies, unemployment and government expenditure are not jointly significant to this model. Azad (2020) mentions that when a country is democratic, it tends to give migrants incentives to come, such as a good health system, safety, and security. Democracy may already include the information represented by government expenditure; thus, it is dropped in the following models along with the policy variables. This way I avoid losing sample size due to a lack of sufficient information for the territories in the World Bank and United Nations datasets. This is certainly a significant limitation to this empirical approach, since policy cannot be observed fully and may have an important effect on migrant stocks. Besides, the effect of democracy may be closely related to policy, since democratic countries might tend to establish restrictive migration policy.

The effect of economic freedom proves to be important for the models, as significance is kept as well as its sign. Due to what is argued by Holcombe and Boudreaux (2015), it is important to keep this covariate included in the model. They find that corruption is associated with the amount of regulation in the country; if this is so, I correct possible biases related to control of corruption when accounting for the days to start a business. Roughly, if more economic freedom implies less corruption, by leaving out the days required to start a business, an upward bias may arise on the control of corruption coefficient. This would overestimate the effect that higher government integrity has on migrant stocks. Including both these variables might also be important to estimate the effect of democracy more accurately, according to Prada (2020).

## Exploring the democracy variable

**Figure 2**

*Political Regime (Democracy Score) Choropleth Map*



*Note:* Data from the PolityIV Project and Wimmer and Min (2006) compiled by Our World in Data (2015). In countries where no data was available, this graph set a democracy score based on political regime scores included in the V-Dem Dataset, also compiled by Our World in Data (2015); see Appendix A for the countries that used this source as a base value. Elaborated by the Author.

As observed in the previous models, the degree in which a regime is democratic keeps a negative relationship with migrant stocks, which does not make sense with the literature or with common intuition. It would be expected that a more democratic regime also entails better insti-

tutions, easier transitions to labor markets, among others, thus more desirability as a long-term destination. Besides, Beine et al. (2008) suggest democratic countries are more desirable for migrants, since they are more likely to respect property rights.

However, democracy and migrant stocks are negatively related in the sample, even when accounting for the high migration in the MENA region, as well as desires to influence migrant stocks through policy. This counterintuitive sign may still happen since statistical relationships there seem to work in a different way. Refugee crises, which by construction cause higher migrant stocks, combined with autocratic regimes may be causing this sign. Figure 1 shows that there are higher migrant stocks here and Figure 2 shows that this region also presents low levels of democracy. This could be a significant limitation for this empirical approach since the different statistical relationships between regions confound the estimation process. In this section, I further explore this limitation with the models in Table 2.

The model in the first column of Table 2 features an interaction between democracy and the MENA dummy, as specified in Equation 2. Now the  $x_j$  include the  $k$  covariates in the model in column 6 of Table 1, except unemployment and the policy dummies.

$$IMS = \beta_0 + \beta_1(\text{democracy}) + \beta_2(MENA) + \beta_3(\text{democracy} \cdot MENA) + \sum_{j=1}^k \beta_j x_j + u \quad (2)$$

This would imply that the effect of democracy is different for countries inside MENA. The results show that more democratic regimes for countries *not* in this region still are supposed to have lower levels of migration. However, the magnitude of the democracy coefficient in the model in column 1 of Table 2 is smaller than all democracy coefficients in Table 1, which shows that its effect is less negative outside MENA. The negative sign on the interaction term implies that more democratic regimes inside this region face even lower levels of migrants. The model increased its explanatory power, which means that allowing for a special effect of democracy inside MENA is a better fit to the data.

**Table 2***Models exploring the democracy coefficient*

	International Migrant Stock (% of population)					
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	−28.390*** (9.389)	−43.822*** (12.776)	−22.132** (10.067)	−24.621*** (9.207)	−17.862* (9.137)	43.719* (22.926)
Democracy	−0.655*** (0.169)	4.377** (1.723)	1.330 (1.460)	0.834 (1.425)	0.394 (1.522)	−8.437*** (2.763)
MENA	13.209*** (4.652)	9.769** (4.645)	−158.652*** (59.490)			
Ln GDP per Capita	3.808*** (0.943)	5.712*** (1.394)	3.266*** (1.137)	3.608*** (1.054)	2.779** (1.116)	−3.620 (2.379)
ROEC				−186.801** (77.493)		
Days to Start a Business	−0.067** (0.030)	−0.054** (0.027)	−0.053*** (0.019)	−0.053*** (0.017)	−0.041*** (0.014)	−0.090*** (0.032)
Control of Corruption	3.825*** (1.006)	5.129*** (0.986)	4.368*** (1.135)	3.478*** (1.347)	4.068*** (1.108)	2.916*** (1.125)
Ethnic Diversity	0.096*** (0.034)	0.078** (0.032)	0.062** (0.029)	0.052 (0.032)	0.052*** (0.017)	0.046 (0.030)
Democracy and MENA Int.	−1.292* (0.670)	−0.507 (0.704)	0.235 (0.795)			
Ln GDPPC and Democracy Int.		−0.547*** (0.192)	−0.204 (0.170)	−0.148 (0.169)	−0.099 (0.181)	0.823*** (0.284)
Ln GDPPC and MENA Int.			17.721*** (6.240)			
Democracy and ROEC Int.				−1.630*** (0.562)		
Ln GDPPC and ROEC Int.				18.984** (7.373)		
Observations	137	137	137	137	120	59
Adjusted R <sup>2</sup>	0.648	0.686	0.758	0.737	0.555	0.601

Note: Heteroskedasticity robust standard errors with sample correction reported in parentheses. \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

In the model in the second column of Table 2, I account for another interaction of the democracy variable, this time with income per capita, besides from the interaction seen in Equation 2.

$$IMS = \beta_0 + \beta_1(\text{democracy}) + \beta_2(MENA) + \beta_3(\text{democracy} \cdot MENA) + \beta_4 \ln(GDP_{PC}) + \beta_5[\ln(GDP_{PC}) \cdot \text{democracy}] + \sum_{j=1}^k \beta_j x_j + u \quad (3)$$

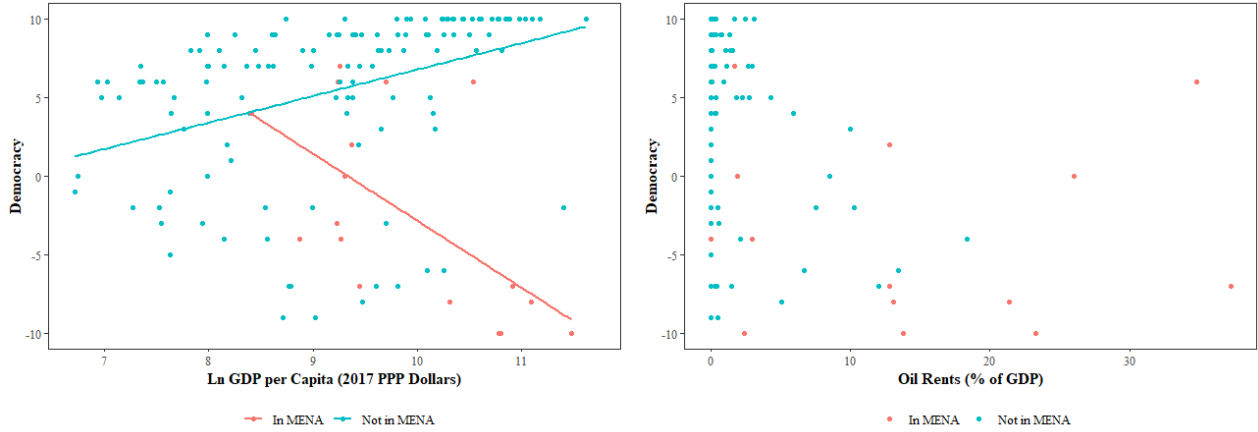
Having both MENA and income interactions would imply that the partial effect of democracy is now more complex, as shown below.

$$\frac{\partial IMS}{\partial \text{democracy}} = \beta_1 + \beta_3 MENA + \beta_5 \ln(GDP_{PC}) \quad (4)$$

The first interaction is no longer significant, which suggests that there is not a special effect of democracy for MENA countries, once accounting for the income interaction. Now, the counterintuitive relationship has to do with income and democracy: supposedly more democratic and richer countries are associated with reductions in migrant stocks. These variables are jointly significant, and at the median level of income in the dataset, the partial effect of democracy on migrant stocks is still practically significant.

Once again, the circumstances in MENA might still be an important limitation for an unbiased estimation of partial effects. In this region, but mostly in the Middle East, there are rich oil-exporting countries, which tend to have low democracy scores and very high-income per capita. As all countries in MENA, they have high migrant stocks, and the estimation process may confound these as causality relationships.

Income and democracy inside countries that do not belong to MENA are positively related, whereas the same relationship is negative inside MENA, as seen in Figure 3, panel 3a. This could partly explain the sign on the second interaction term seen in the model in column 2 of Table 2. Furthermore, inside MENA, richer countries are mostly petroleum exporters, as seen in panel 3b of Figure 3: a country that has higher oil rents tends to be less democratic.

**Figure 3***Democracy scores by income per capita and oil rents*(a) *Democracy by GDPPC, in and out of MENA*(b) *Democracy by oil rents, in and out of MENA*

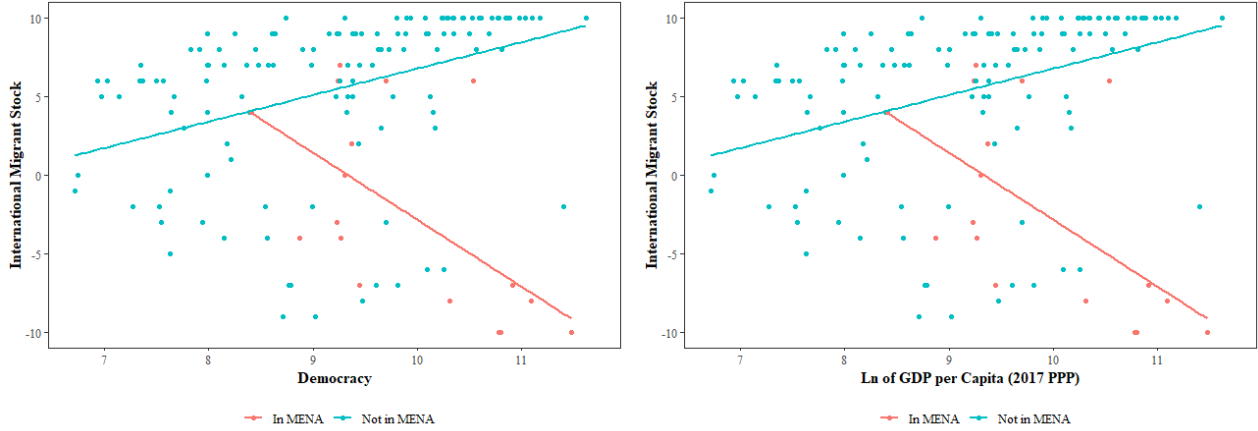
*Note:* Political stability and absence of violence data from the World Governance Indicators of the World Bank. Covariate data from the World Bank and Our World in Data (2015). Not all points in the graphs are used in the samples for regressions, as some countries have missing data on other covariates. Elaborated by the Author.

High migration stocks in this region due to instability are likely to bias the estimation of coefficients, especially those involving democracy scores; this limits the identification strategy. The limitation may be born from the counterintuitive statistical relationships in some countries, which probably arise from events that do not happen elsewhere. Very high migration stocks are seen in authoritarian and high-income per capita nations, which gives the sense that these are desirable qualities for a migrant, when it should be the contrary, at least according to the literature. This can also be seen in Figure 4. Outside MENA, the democracy variable is positively correlated with migrant stocks, which is coherent, but the correlation is small which may signal little importance of democracy on migrant stocks. Panel 4b of Figure 4 shows that the relationship with income per capita is much stronger in MENA, suggesting the variable plays a more important role here in determining migrant stocks, relative to the rest of the world.

The model in column 3 of Table 2, now includes an interaction term between the MENA dummy and income per capita, as represented in Equation 5, to evaluate the fit of the data on a model based on the points made before.

**Figure 4**

*International migrant stock (% of total population) by democracy score and income per capita*



(a) *IMS by democracy score, in and out of MENA*

(b) *IMS by income per capita, in and out of MENA*

*Note:* Data from the World Bank and Our World in Data (2015). Not all points in the graphs are included in the samples for regressions, as some countries have missing data on the other covariates. Elaborated by the Author.

$$\begin{aligned}
 IMS = & \beta_0 + \beta_1(\text{democracy}) + \beta_2(MENA) + \beta_3(\text{democracy} \cdot MENA) + \beta_4 \ln(GDP_{PC}) + \\
 & \beta_5[\ln(GDP_{PC}) \cdot \text{democracy}] + \beta_6[\ln(GDP_{PC}) \cdot MENA] + \sum_{j=1}^k \beta_j x_j + u
 \end{aligned} \tag{5}$$

The results show that the terms involving democracy are not individually significant, however, all the democracy terms are jointly significant at the 99% level. The interaction between income and democracy still has a counterintuitive sign, as it suggests that richer, more democratic countries see reductions in migrant stocks, as shown in the previous models. However, more democratic countries inside MENA, other things equal, see higher migrant stocks, which is intuitive. At



the median level of income, the partial effect of democracy on migrant stocks is negative for countries both in and out of MENA, as the magnitude in the MENA dummy and democracy is not large enough to offset the negative coefficient on the income and democracy interaction. This partial effect will become more negative for richer countries, as seen by the sign on the income and MENA interaction term.

The results also show a stronger relationship of income per capita within MENA, represented by the new interaction term. A 1% increase in income per capita has a positive effect on migrant stocks around the world, as seen in all previous models. The model in the third column of Table 2 shows that the same 1% increase in income per capita is related with a much bigger increase in migrant stocks inside MENA. This is consistent with Figure 4, panel 4b, where the slope in the relationship of income per capita and migrant stocks is higher for MENA countries. All the terms involving the income variable are jointly significant, and their inclusion seems to eliminate the significance of democracy in the model. This could be seen as more consistent than the previous relationships found between democracy and migration, however, the literature has not found a higher income effect on migration found only in MENA countries.

In the model in column 4 of Table 2, I replace the MENA region by another dummy variable, which equals 1 for rich oil exporting countries<sup>2</sup> (ROEC). The model is specified below:

$$\begin{aligned}
 IMS = & \beta_0 + \beta_1(\text{democracy}) + \beta_2(ROEC) + \beta_3(\text{democracy} \cdot ROEC) + \beta_4 \ln(GDP_{PC}) + \\
 & \beta_5[\ln(GDP_{PC}) \cdot \text{democracy}] + \beta_6[\ln(GDP_{PC}) \cdot ROEC] + \sum_{j=1}^k \beta_j x_j + u
 \end{aligned} \tag{6}$$

The rich oil exporting countries dummy along with its interaction terms is jointly significant as a replacement for the MENA dummy seen in the model in column 3 of Table 2. Terms including democracy are jointly significant to this model, although most are not so in their own. A rich oil exporting country that is more democratic sees reductions in its migrant stock. Besides, a more democratic and higher income country features a relatively small decrease in its migrant stock.

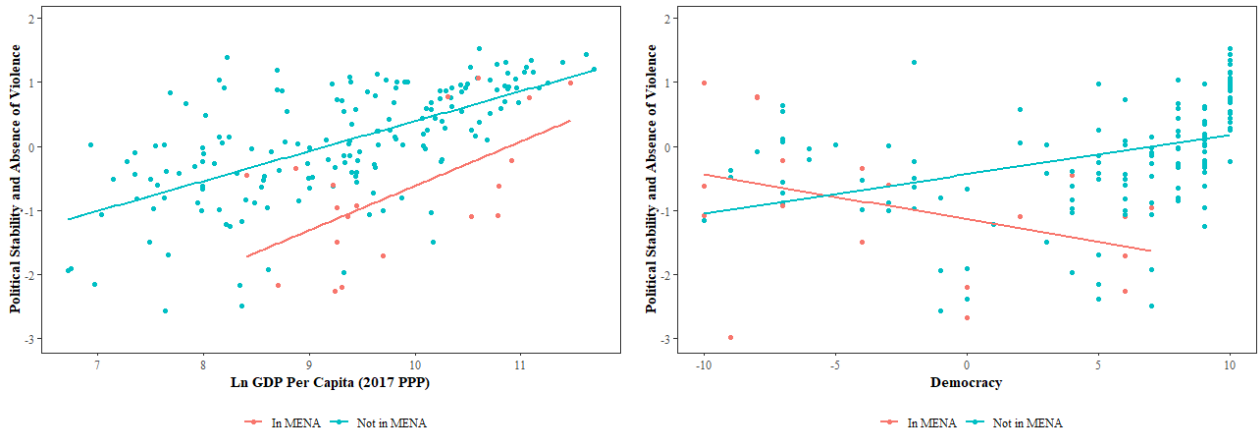
---

<sup>2</sup> See Appendix A for details on the conditions for a country to be considered as a “rich oil exporting country” in this dataset.

A rich oil exporting country with higher income per capita is associated with higher levels for the response variable. Still, the limitation is still present in the empirical method, but it directs attention toward rich oil exporters, which are mostly located in the MENA region. The ethnic diversity variable loses significance when considering this new dummy.

**Figure 5**

*Political stability and absence of violence (PSA) by income per capita and democracy score*



(a) PSA by income per capita, in and out of MENA      (b) PSA by democracy score, in and out of MENA

*Note:* Political stability and absence of violence data from the World Governance Indicators of the World Bank. Covariate data from the World Bank and Our World in Data (2015). Not all points in the graphs are used in the samples for regressions, as some countries have missing data on other covariates. Elaborated by the Author.

It would seem that migrants in MENA are concentrated on the higher income per capita countries, and not in the more democratic ones. Migrants here could be looking for economic stability and peacefulness as a priority. Using the World Bank's political stability and absence of violence indicator, panel 5a in Figure 5 shows that in all the world, more stable and peaceful countries are also richer. On the other hand, panel 5b shows that democracy inside MENA is fragile. Democratic regimes here are mostly correlated with more instability and violence. This could be the reason why the interaction terms in the model in column 4 of Table 2 have these signs:

more democratic countries inside MENA see less stability and consequently less migration.

Yet, this is still no definitive justification on democracy being a repellent of migration, or a source for instability. It is difficult to infer causality for all these relationships due to the possibility of endogeneity or misspecification in the models. This further supports the idea that this empirical method may be limited, partly because of the relationships inside the MENA region, especially those surrounding democracy. In order to acquire an intuitive coefficient, which captures the benefits of democracy such as stability, peace, freedom of speech, participation in government, there might be a need for variables which are unobservable, such as the ‘true’ policy motivation of governments, the relative ‘fragility’ of democracy rather than the type of regime, among others.

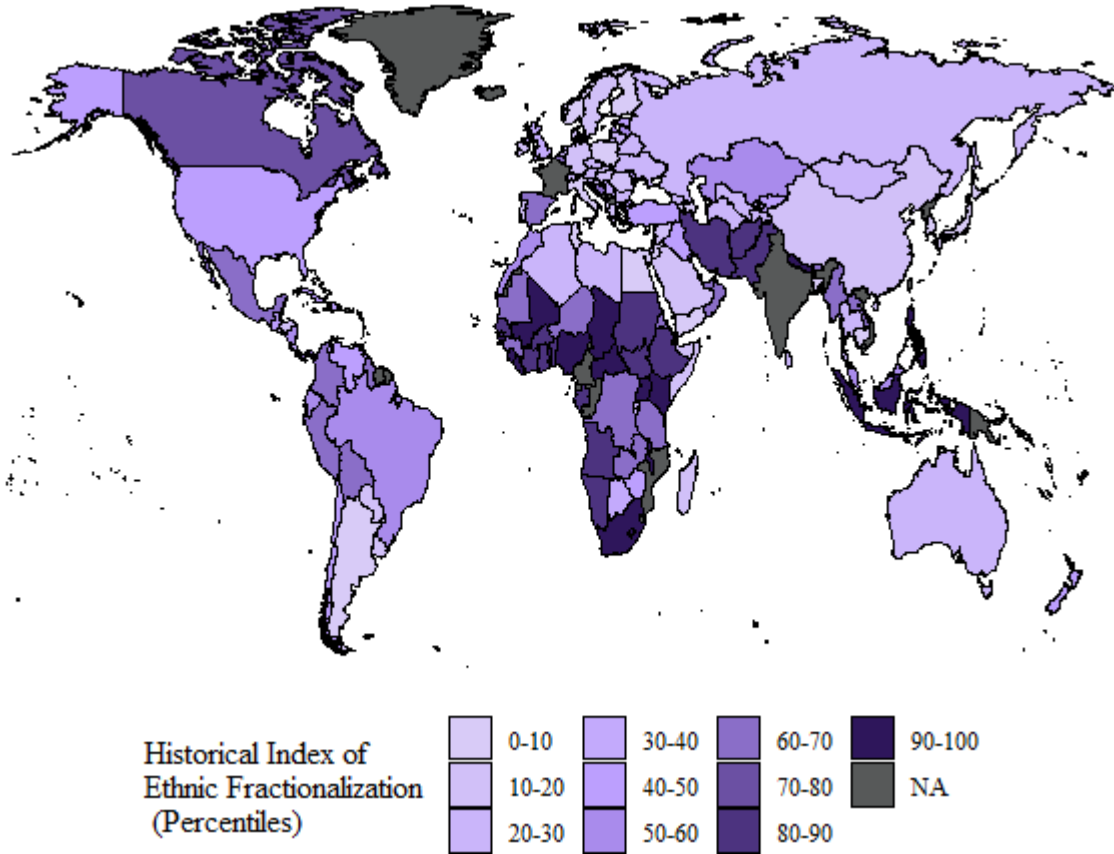
The model in the fifth column of Table 2 further shows this by repeating the model in column 3 of Table 2, but now eliminating the countries inside the MENA region, and its dummy. This model is specified as follows:

$$IMS = \beta_0 + \beta_1(\text{democracy}) + \beta_2 \ln(GDP_{PC}) + \beta_3[\ln(GDP_{PC}) \cdot \text{democracy}] + \sum_{j=1}^k \beta_j x_j + u \quad (7)$$

Here, the partial effect of democracy depends only on the value of income per capita, unlike the more complex effect in Equation 4, as follows:

$$\frac{\partial IMS}{\partial \text{democracy}} = \beta_1 + \beta_3 \ln(GDP_{PC}) \quad (8)$$

The democracy terms, are jointly significant even if not individually so, and hold the same signs as before. However, the magnitude of the partial effect of democracy, at the median level of income is smaller than in the models that were shown before. This suggests that democracy causes a smaller negative effect on migrant stocks when leaving out the MENA countries, as I had hypothesized before. The signs on the control variables are similar, and ethnic diversity sees significance again.

**Figure 6***Historical Index of Ethnic Fractionalization Choropleth Map*

*Note:* Data from the Harvard Dataverse. See Appendix A for information on units of measurement for this variable. Elaborated by the Author.

Figure 6 shows how some MENA countries have 'medium' values of ethnic diversity and, as seen in Figure 1, also have very high migrant stocks. The returning significance that ethnic diversity presents in the model in the fifth column of Table 2 would be expected when dropping MENA countries, as now migrants are concentrated more in countries that are more ethnically diverse, as both the literature and the models in Table 1 show. The estimation process is somewhat less limited, at least for the ethnic diversity index, when leaving out MENA countries.

The model in column 6 of Table 2, also repeats the model in column 5 of Table 2 but now

only considers countries in the western hemisphere<sup>3</sup>. In this new sample, there are some particular details about the effect of income and democracy on migrant stocks; the other variables, except ethnic diversity, keep their sign and significance. The standard error on the ethnic diversity coefficient increases for this reduced sample, which would be expected as it is more difficult to estimate partial effects with low variability in the regressors; Figure 6 shows that in western countries there is less variability of ethnic diversity.

All terms involving income are jointly significant, yet its partial effect is increasing in democracy, as it can be seen in Equation 9.

$$\frac{\partial IMS}{\partial \ln(GDP_{PC})} = \beta_2 + \beta_3 \text{democracy} \quad (9)$$

Results for this model in Table 2 show that there are positive effects of income per capita on migrant stocks *only* for some kinds of anocracies. Anocracies, while not exactly a fully autocratic regime, do show instability: “characterized by institutions and political elites that are far less capable of performing fundamental tasks and ensuring their own continuity [...] a middling category rather than a distinct form of governance” (Marshall & Elzinga-Marshall, 2017, p.30). Only some anocracies have positive partial effects for income per capita, as the scores for anocracies range from -5 to 5, and the cutoff value for positive partial effect is about 4.40. Richer countries, but at lower values of democracy, actually see reductions of migrant stocks. This could suggest consistency with the literature on democracy: institutions, freedom of speech and participation in the political processes are important too; a migrant does not only decide on destination based on relative richness of countries.

Terms involving democracy are also jointly significant; I keep the interaction term seen in Equation 7. Other things equal, countries which are richer and more democratic have higher migrant stocks, however, the partial effect of democracy, also represented through Equation 8, does not turn positive until income per capita reaches its 58<sup>th</sup> percentile (about 28 thousand 2017 PPP

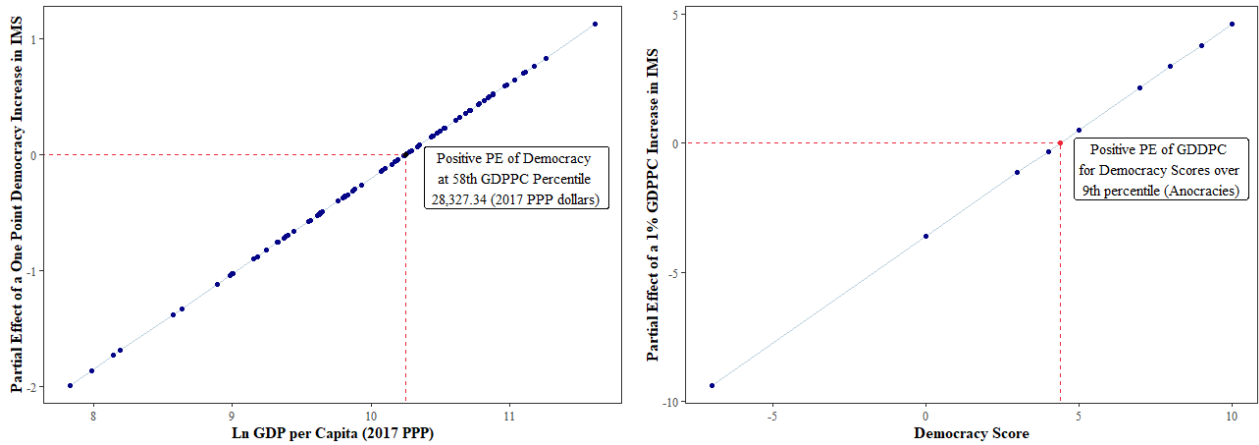
---

<sup>3</sup> See Appendix C for a list of countries included in this restricted model.

dollars), as seen in Figure 7, panel 7a below. Democratic countries only see high migrant stocks when they have high values of income per capita, otherwise, they see reductions in the response variable. This supports the idea of a possible ‘balance’ that migrants look for between income per capita and democracy. Figure 7 shows the partial effects of democracy and income per capita for different values of income per capita and democracy, respectively. The x-axis intercepts for each straight line represent the cutoff values for which the partial effects start to turn positive.

**Figure 7**

*Partial Effects (PE) of Democracy and Income Per Capita on International Migrant Stocks in the Western Hemisphere*



(a) Partial effect of democracy by  $\ln(GDP_{PC})$  value    (b) Partial effect of  $\ln(GDP_{PC})$  by democracy score

*Note:* The vertical axis shows the change in international migrant stock due to a 1% or point increase of income per capita or democracy, respectively. Since there are interaction terms between these variables, these partial effects depend on the values of income per capita and democracy, respectively. These partial effects values  $\partial IMS / \partial \text{democracy}$  and  $\partial IMS / \partial \ln(GDP_{PC})$ , plotted in the y-axes, are derived from Equation 7, and represented in Equations 8 and 9. These are estimated through the model in column 6 of Table 2. The x-axis values for each graph are those found in the sample for the Western Hemisphere. Elaborated by the Author.

## CONCLUSIONS

The empirical models featured in this work show that, overall, income per capita is a very important determinant for migrant stocks around the world. A 1% increase in income per capita is mostly related to percentage point increases in migrant stocks, except when considering only the western hemisphere of the world. Here, income only causes increases in migrants with more democratic countries, and with autocratic regimes it actually causes decreases in migration. This signals the importance democracy has in determining migration flows around the world.

Economic freedom is also important and consistently positive for migrant stocks. A country that imposes less regulation to its new businesses usually also has high migrant stocks. This could be due to an easier introduction into labor markets for migrants, as businesses have relaxed recruitment procedures. I follow the literature and allow the perceptions of corruption control to affect democracy, and find also that it is a consistently positive factor for migration, meaning that countries with ‘cleaner’ governments have high migrant inflow. It is important to consider that corruption is closely related with economic freedom, according to the literature. Both should be kept together in all models to ensure the zero conditional mean assumption for the corruption coefficient estimation.

I also find that there is very high migration in the Middle East and North Africa (MENA), which is difficult to explain with other covariates. This might be due to the critical humanitarian situations in the region, which cause heavy migration between neighboring countries. A dummy variable for rich oil exporting countries is significant too as a replacement for this region dummy. This suggests that the mechanics of migration in oil exporting countries work differently than those in the rest of the world. Income still proves to be a positive effect on migrant stocks, as inside MENA and for rich oil exporters, income is associated with a greater increase of migrant stocks, relative to countries outside these groups.

I implemented culture in the estimation process by using the Historical Index of Ethnic Fractionalization, and it proved to be significant in most models with a positive sign. This also

supports the determinations made by other researchers regarding migration determinants: a more diverse country is attractive to migrants since it will ease their economic and social transition in the foreign country. It is not significant, however, when I consider a model using a reduced sample with the western hemisphere and with a model considering the rich oil exporters dummy, probably due to multicollinearity or low variance.

Immigration policy variables as well as government expenditure did not keep their significance in the models, probably since other political variables as democracy may contain the information they include. The policy dummies, however, suffer from a lack of robustness in the sample, as not enough governments publicly announce their motivation to affect migrant levels.

The political regime score, or degree of democracy, as reported by Our World In Data (2015), constantly proves significance, yet yields a counterintuitive sign. Supposedly, a more democratic country sees reductions in its migrant stock. This effect is reduced when partialling out the high average migration in special groups of countries: MENA and rich oil exporters. However, the partial effect of democracy is still negative and significant, either jointly or individually, when specifying it through variable interactions. Interacting democracy with special group dummies and income per capita uncovers the apparent inconsistencies with the sign, showing that, other things equal, with higher income, more democratic countries face reductions in migrant stocks. Further, more democratic rich oil exporters see reductions in their migrant stocks. Removing MENA countries does not fully eliminate the negative sign on the coefficient, yet it does reduce its magnitude. It is likely that this is due to the fact that democratic regimes inside MENA are also regimes that face greater political instability and violence, suggesting that migrants there might look for stability in autocratic regimes. However, it is not clear if this is an unbiased estimation of the effect of democracy on migrant stocks. Considering the western hemisphere on its own, democracy is positively related with migrant stocks only for relatively high income countries, signalling that democracy depends on the relative richness of a country for it to be a positive effect on migration. Migrants in the western hemisphere may try to ‘balance’ democracy and income per capita, and they seem to prefer higher values of both.



The conclusions drawn here regarding democracy are fragile, as all points to this variable being endogenous. Multiple variables correlated with democracy may still be inside the error term, as they are unobservable. A true policy motivation of regimes is important, as it might be that democratic regimes are more likely to have been attractive destinations in the past, thus in the present have adopted restrictive immigration policies. Nevertheless, they do not reveal political purposes, as democratic regimes can be subject to more criticism for controversial positions than autocratic regimes. Immigration dummies also seem to fail to account for time trends on policy. Distance is also a variable that cannot satisfactorily be included in an empirical strategy of this kind; thus, these effects are left in the error term. However, switching to another strategy to use distance does have a cost, as distance measures require strong statistical capabilities of governments, which is not true for many underdeveloped nations, which are the ones that produce the most emigration.

To overcome this limitation, the use of proxies for the omitted variables may be satisfactory, however, the availability of data must also be considered for producing research. Many underdeveloped countries do not account with these variables and thus models are not representative enough to produce externally valid results. An instrument for democracy may also be used to cover the possibility of simultaneity between democracy and migrant stocks. Alternatively, an analysis with different dependent variables might uncover different relationships with democracy. This could show that perhaps only certain types of migration are affected negatively by democracy whereas other kinds of migration are not. Trying to separate migration based on the age of migrants could be very useful, as literature consistently points to its significance; however, once again availability of data becomes an issue. It must also be considered that the international migrant stock has potential to be an intensively short-term variable, whereas other ones, as the share of working age migrants can measure a long-term migration, i.e. migrants that left their country a long time before the statistic was reported. These kinds of migration may work through different mechanisms. In order to account for time trends on migration, and perhaps take advantage of exogenous shocks to it, as the COVID-19 pandemic most likely has caused, a panel-data approach can be valuable.

Ultimately, I identify important opportunities for progress in the literature but also interest-

ing relationships between migration and economic statistics, one being the possibility of a desire of 'equilibrium' between income per capita and democracy. The importance of the determinants of migration cannot be ignored, not only for countries already taking in high levels of migrants, but also for policymaking on countries that desire to stop the levels of emigration. In order to stop citizens from leaving countries, governments should ideally make policy to help the country resemble nations that are net migrant intakers. The perceptions of the political processes are also important for both migration and economic growth: certainly reducing corruption helps the efficiency and institutionality of the public sector, but also gives the image of a stable country in which its citizens would rather remain. In the road to exhaustive economic wellness and the reduction of income disparity, migration proves to be an important factor, thus it is crucial to continue researching about this topic.

## REFERENCES

- Abel, A. B., Bernanke, B. S., & Croushore, D. (2014). *Macroeconomics* (8th ed.). Pearson.
- Amrith, M. (2014). Why migration matters. <https://unu.edu/publications/articles/why-migration-matters.html>
- Azad, K. (2020). The effect of democracy on migration: A panel data approach, 1–44.
- Beine, M., Docquier, F., & Schiff, M. (2008). Brain drain and its determinants: A major issue for small states. (3398), 1–13.
- Cameron, L. A., Erkal, N., Gangadharan, L., & Zhang, M. (2012). Cultural integration: Experimental evidence of changes in immigrants' preferences, 1–25. <http://ftp.iza.org/dp6467.pdf>
- Caragliu, A., Del Bo, C., De Groot, H. L. F., & Linders, G.-J. M. (2012). Cultural determinants of migration, 7–32. <https://link.springer.com/article/10.1007/s00168-012-0531-3>
- Dimant, E., Krieger, T., & Meierrieks, D. (2013). The effect of corruption on migration, 1985–2000, 1270–1274. <https://www.tandfonline.com/doi/abs/10.1080/13504851.2013.806776>
- Drazanova, L. (2019). *Historical index of ethnic fractionalization dataset (hief)* (V2). Harvard Dataverse. <https://doi.org/10.7910/DVN/4JQRCL>
- Encyclopaedia Britannica. (2021). Human migration. In Encyclopaedia Britannica (Ed.), *Encyclopaedia britannica online*. <https://www.britannica.com/topic/human-migration>
- Fafchamps, M., & Shilpi, F. (2012). Determinants of the choice of migration destination, 1–22. <https://openknowledge.worldbank.org/handle/10986/6949>
- Holcombe, R. G., & Boudreaux, C. J. (2015). Regulation and corruption. *Public Choice*, 164(1-2), 75–85. <https://doi.org/10.1007/s11127-015-0263-x>
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010). The worldwide governance indicators: Methodology and analytical issues: World bank policy research working paper no. 5430. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1682130](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1682130)
- Marshall, M. G., & Elzinga-Marshall, G. (2017). Global report 2017: Conflict, governance, and state fragility (1st ed.). <http://www.systemicpeace.org/vlibrary/GlobalReport2017.pdf>

- Mayda, A. M. (2005). International migration: A panel data analysis of economic and non-economic determinants, 1–19.
- Murrugarra, E., Larrison, J., & Sasin, M. J. (2011). *Migration and poverty: Toward better migration opportunities for the poor*. World Bank.
- Our World In Data. (2015). Political freedom is a very recent achievement. <https://ourworldindata.org/democracy>
- Prada, E.-M. (2020). Vulnerable migration and democracy index in the european union: A panel data perspective. *20*, 473–478.
- Sjaastad, L. A. (1962). The costs and returns of human migration. *70*(5). <http://www.nber.org/chapters/c13573>
- Stark, O., & Taylor, J. E. (1991). Migration incentives, migration types: The role of relative deprivation. *101*(408), 1163–1178. <https://www.jstor.org/stable/2234433?origin=JSTOR-pdf&seq=1>
- United Nations. (2017). International migration policies. [https://www.un.org/en/development/desa/population/publications/pdf/policy/international\\_migration\\_policies\\_data\\_booklet.pdf](https://www.un.org/en/development/desa/population/publications/pdf/policy/international_migration_policies_data_booklet.pdf)
- Wang, Z., De Graaf, T., & Nijkamp, P. (2016). Cultural diversity and cultural distance as choice determinants of migration destination. *11*(1742-1780), 176–200. <https://www.tandfonline.com/doi/full/10.1080/17421772.2016.1102956>
- Wesselbaum, D. (2018). Socioeconomic driving forces of international migration, 1–16.
- World Bank Group. (2020). International migrant stock (% of population): United nations population division. world population prospects: 2019 revision. <https://data.worldbank.org/indicator/SM.POP.TOTL.ZS>

## APPENDIX A: VARIABLES USED IN THE STUDY

**Table 3**

*Variable descriptions*

Variable	Description	Source	Note
International Mi-grant Stock (% of total population)	The number of people born in a country other than that in which they live, includes refugees.	World Develop-ment Indicators (World Bank)	
Democracy	Degree of democratic regime in a country.	Our World in Data (2015)	Higher values imply more democratic regimes. For the choropleth map, the Political Regime from the V-Dem dataset was used to estimate a score for missing values on Sudan, Myanmar and Ethiopia. The measurement scale goes from -10 (full autocracy) to 10 (full democracy). Anocracies are those scoring between -5 and 5. "Colony" (coded as -20) includes not only colonies, but also countries that were not yet sovereign states.
Rich Oil Export-ing Countries	Dummy variable for coun-tries with over 26K in GDPPC, and oil rents over 0.27 (% of GDP)	Author's calcula-tions	The amounts used for the dummy where based on quartile analysis on the sample values.

Continued on next page

Table 3 – continued from previous page

Variable	Description	Source	Note
GDP per Capita (2017 PPP)	Gross domestic product converted to international dollars using purchasing power parity rates.	World Development Indicators (World Bank)	
Days required to start a business	The number of days needed to complete procedures to legally operate a business.	World Development Indicators (World Bank)	
Unemployment (modeled ILO estimate)	Share of the labor force that is without work but still seeking for it.	World Development Indicators (World Bank)	
Control of Corruption	Captures perceptions of the extent to which public power is exercised for private gain.	World Governance Indicators (World Bank)	The documentation on the World Governance Indicators (Kaufmann et al., 2010) states that higher values imply better outcomes.
Immigration Policy	Policy to maintain, raise or lower current levels of migrants.	Migration Data Portal (United Nations)	Countries not reporting a stance are taken as missing values.
Middle East and North Africa (MENA)	World region according to the World Bank.	World Development Indicators (World Bank)	See Appendix C for list of countries included in this region.
Government Final Consumption Expenditure (% of GDP)	Government current expenditure. Excludes military expenditure.	World Development Indicators (World Bank)	

Continued on next page

Table 3 – continued from previous page

Variable	Description	Source	Note
Historical Index of Ethnic Fractionalization	The probability of two randomly drawn individuals within a country are not from the same ethnic group.	Harvard Data-verse, Drazenova (2019)	For the models, this variable is coded so that a 1 unit increase means a 0.01 probability increase for this draw.
Political Stability and Absence of Violence	Measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism.	World Governance Indicators (World Bank)	The documentation on the World Governance Indicators (Kaufmann et al., 2010) states that higher values imply better outcomes.

## APPENDIX B: DESCRIPTIVE STATISTICS

**Table 4**

*Descriptive statistics for all continuous variables in the database*

Statistic	N	Mean	Min	Pctl(25)	Median	Pctl(75)	Max
International Migrant Stock (% of Population)	214	12.017	0.071	1.416	4.367	13.552	88.404
GDP per Capita (2017 PPP)	193	20,821.810	825.206	4,670.432	12,605.140	29,182.570	120,294.900
Ln GDP per Capita (2017 PPP)	193	9.375	6.716	8.449	9.442	10.281	11.698
Unemployment	187	7.900	0.170	3.742	6.357	10.471	27.694
Days Required to Start a Business	189	23.465	0.500	8.500	14.000	29.000	187.000
Control of Corruption	203	-0.030	-1.766	-0.757	-0.277	0.653	2.276
Political Regime (Democracy Score)	161	4.248	-10.000	0.000	7.000	9.000	10.000
Historical Index of Ethnic Fractionalization (2013)	149	45.915	1.900	22.900	45.300	69.500	88.900
Government Expenditure (% of GDP)	174	17.146	4.579	12.413	16.291	19.808	62.585
Political Stability and Absence of Violence	205	-0.027	-2.974	-0.618	0.038	0.855	1.943

*Note:* See Appendix A for data sources. All years 2015, except for Historical Index of Ethnic Fractionalization, which is for 2013.



## APPENDIX C: COUNTRY LISTS FOR REDUCED SAMPLES

### North Africa and Middle East countries

The model in column 5 of Table 2 estimates coefficients for a linear model with a sample that only considers countries outside of the Middle East and North Africa, a region defined in the World Bank databases. The sample takes into account all countries for which the database includes dependent and independent variables' values which are not in this region. Thus, besides from countries with missing values, the model in column 5 of Table considers all countries in the World Bank datasets, *except* the countries included in Table 5.

### Western Hemisphere countries

The model in column 6 of Table 2, also takes into account a reduced sample size, which solely considers the western hemisphere. The selection was done by the Author, and includes countries in Europe, the Americas and some countries of Oceania. Except countries with missing values on the  $k$  covariates included in the model in column 6 of Table 2, the countries which *are* included in the sample size are shown in Table 6.

**Table 5**

*Countries in the Middle East and North Africa, left out in the model of the sixth column of Table 2*

<b>ISO3 Code</b>	<b>Country Name</b>
DZA	Algeria
BHR	Bahrain
DJI	Djibouti
EGY	Egypt, Arab Rep.
IRN	Iran, Islamic Rep.
IRQ	Iraq
ISR	Israel
JOR	Jordan
KWT	Kuwait
LBN	Lebanon
LBY	Libya
MLT	Malta
MAR	Morocco
OMN	Oman
QAT	Qatar
SAU	Saudi Arabia
SYR	Syrian Arab Republic
TUN	Tunisia
ARE	United Arab Emirates
PSE	West Bank and Gaza
YEM	Yemen, Rep.

**Table 6**

*Countries in the western hemisphere considered for the model in the sixth column of Table 2*

<b>ISO3 code</b>	<b>Country name</b>	<b>World Bank region</b>
ALB	Albania	Europe & Central Asia
ASM	American Samoa	East Asia & Pacific
AND	Andorra	Europe & Central Asia
ATG	Antigua and Barbuda	Latin America & Caribbean
ARG	Argentina	Latin America & Caribbean
ABW	Aruba	Latin America & Caribbean
AUS	Australia	East Asia & Pacific
AUT	Austria	Europe & Central Asia
BHS	Bahamas, The	Latin America & Caribbean
BRB	Barbados	Latin America & Caribbean
BLR	Belarus	Europe & Central Asia
BEL	Belgium	Europe & Central Asia
BLZ	Belize	Latin America & Caribbean
BMU	Bermuda	North America
BOL	Bolivia	Latin America & Caribbean
BIH	Bosnia and Herzegovina	Europe & Central Asia
BRA	Brazil	Latin America & Caribbean
VGB	British Virgin Islands	Latin America & Caribbean
BGR	Bulgaria	Europe & Central Asia
CAN	Canada	North America
CYM	Cayman Islands	Latin America & Caribbean
CHI	Channel Islands	Europe & Central Asia

Continued on next page

**Table 6 – continued from previous page**

<b>ISO3 code</b>	<b>Country name</b>	<b>World Bank region</b>
CHL	Chile	Latin America & Caribbean
COL	Colombia	Latin America & Caribbean
CRI	Costa Rica	Latin America & Caribbean
HRV	Croatia	Europe & Central Asia
CUB	Cuba	Latin America & Caribbean
CUW	Curacao	Latin America & Caribbean
CYP	Cyprus	Europe & Central Asia
CZE	Czech Republic	Europe & Central Asia
DNK	Denmark	Europe & Central Asia
DMA	Dominica	Latin America & Caribbean
DOM	Dominican Republic	Latin America & Caribbean
ECU	Ecuador	Latin America & Caribbean
SLV	El Salvador	Latin America & Caribbean
EST	Estonia	Europe & Central Asia
FRO	Faroe Islands	Europe & Central Asia
FIN	Finland	Europe & Central Asia
FRA	France	Europe & Central Asia
DEU	Germany	Europe & Central Asia
GIB	Gibraltar	Europe & Central Asia
GRC	Greece	Europe & Central Asia
GRL	Greenland	Europe & Central Asia
GRD	Grenada	Latin America & Caribbean
GTM	Guatemala	Latin America & Caribbean

Continued on next page

**Table 6 – continued from previous page**

<b>ISO3 code</b>	<b>Country name</b>	<b>World Bank region</b>
GUY	Guyana	Latin America & Caribbean
HTI	Haiti	Latin America & Caribbean
HND	Honduras	Latin America & Caribbean
HUN	Hungary	Europe & Central Asia
ISL	Iceland	Europe & Central Asia
IRL	Ireland	Europe & Central Asia
IMN	Isle of Man	Europe & Central Asia
ITA	Italy	Europe & Central Asia
JAM	Jamaica	Latin America & Caribbean
XKX	Kosovo	Europe & Central Asia
LVA	Latvia	Europe & Central Asia
LIE	Liechtenstein	Europe & Central Asia
LTU	Lithuania	Europe & Central Asia
LUX	Luxembourg	Europe & Central Asia
MHL	Marshall Islands	East Asia & Pacific
MEX	Mexico	Latin America & Caribbean
FSM	Micronesia, Fed. Sts.	East Asia & Pacific
MDA	Moldova	Europe & Central Asia
MCO	Monaco	Europe & Central Asia
MNE	Montenegro	Europe & Central Asia
NLD	Netherlands	Europe & Central Asia
NCL	New Caledonia	East Asia & Pacific
NZL	New Zealand	East Asia & Pacific

Continued on next page

**Table 6 – continued from previous page**

<b>ISO3 code</b>	<b>Country name</b>	<b>World Bank region</b>
NIC	Nicaragua	Latin America & Caribbean
MKD	North Macedonia	Europe & Central Asia
MNP	Northern Mariana Islands	East Asia & Pacific
NOR	Norway	Europe & Central Asia
PAN	Panama	Latin America & Caribbean
PRY	Paraguay	Latin America & Caribbean
PER	Peru	Latin America & Caribbean
POL	Poland	Europe & Central Asia
PRT	Portugal	Europe & Central Asia
PRI	Puerto Rico	Latin America & Caribbean
ROU	Romania	Europe & Central Asia
SMR	San Marino	Europe & Central Asia
SRB	Serbia	Europe & Central Asia
SXM	Sint Maarten (Dutch part)	Latin America & Caribbean
SVK	Slovak Republic	Europe & Central Asia
SVN	Slovenia	Europe & Central Asia
SLB	Solomon Islands	East Asia & Pacific
ESP	Spain	Europe & Central Asia
KNA	St. Kitts and Nevis	Latin America & Caribbean
LCA	St. Lucia	Latin America & Caribbean
MAF	St. Martin (French part)	Latin America & Caribbean
VCT	St. Vincent and the Grenadines	Latin America & Caribbean
SUR	Suriname	Latin America & Caribbean

Continued on next page

**Table 6 – continued from previous page**

<b>ISO3 code</b>	<b>Country name</b>	<b>World Bank region</b>
SWE	Sweden	Europe & Central Asia
CHE	Switzerland	Europe & Central Asia
TTO	Trinidad and Tobago	Latin America & Caribbean
TUR	Turkey	Europe & Central Asia
TCA	Turks and Caicos Islands	Latin America & Caribbean
UKR	Ukraine	Europe & Central Asia
GBR	United Kingdom	Europe & Central Asia
USA	United States	North America
URY	Uruguay	Latin America & Caribbean
VEN	Venezuela, RB	Latin America & Caribbean
VIR	Virgin Islands (U.S.)	Latin America & Caribbean