

International
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Understanding the Global Patterns of Venezuelan Migration: Determinants of an Expanding Diaspora

M.A. Research Paper

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Master of Arts in Development Studies
Major Economics of Development
International Institute of Social Studies (ISS)
Erasmus University Rotterdam

The Hague, The Netherlands
December 2019

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List of Acronyms

BBC	British Broadcasting Company
CIA	Central Intelligence Agency
FE	Fixed Effects
GDP	Gross Domestic Product
i.a.	inter alia
IMF	International Monetary Fund
IOM	International Organization for Migration
IRC	International Rescue Committee
ISS	International Institute of Social Studies
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OLS	Ordinary Least Squares
OPEC	Organization of the Petroleum Exporting Countries
PPP	Purchasing Power Parity
PPML	Poisson Pseudo-Maximum Likelihood
RTA	Regional Trade Agreements
UN	United Nations
UN DESA	United Nations Department of Economic and Social Affairs
UNHCR	United Nations High Commissioner for Refugees
UNODC	United Nations Office on Drugs and Crime
VEN	Venezuela
WGI	Worldwide Governance Indicators
WTO	World Trade Organization

Acknowledgments

“Alone we can do so little, together we can do so much.”

– Helen Keller

I am sincerely grateful to Elissaios Papyrakis for his continuous support in my application to this master’s programme, over the course of my studies at ISS and in his role as supervisor of this thesis. As for the latter, I highly appreciated his guidance, encouragement and insightful advices. I would also like to thank my second reader, Peter van Bergeijk, who’s challenging questions helped me to deepen my analysis and argumentation.

Further, I gratefully acknowledge the funding received towards my master’s studies from the Swiss Study Foundation, the Hans and Wilma Stutz foundation and the Knechtli-Kradolfer foundation.

Last but not least, I would like to express my heartfelt thanks to my girlfriend, family and friends for their support during my academic career and in life in general.

In remembrance and dedicated to my friend Gian Luca Barandun.

Abstract

The economic, political and humanitarian crisis in Venezuela intensified in the last few years and has led to the largest migration crisis in the region's modern history. Since 2015, the number of migrants from Venezuela has increased strikingly and the composition of the major destination countries has changed fundamentally. This paper investigates what factors determined the choice of destination country of Venezuelan migrants in the pre- and post-2015 period. Exploiting United Nations migration data for 230 countries from 1990 to 2017, this paper applies a Poisson Pseudo-Maximum Likelihood (PPML) estimator to a modified gravity model of migration. The results suggest that Venezuelans were generally choosing a certain destination country due to its high economic standard of living in times of relative stability (1990 to 2015). However, this determinant loses its importance during times of crisis (2015 to 2017), when Venezuelans were primarily immigrating to geographically close countries.

Relevance to Development Studies

Development and migration are closely related. On the one hand, development of some or underdevelopment of other countries can cause migration flows to emerge. On the other hand, migration can, e.g. through increasing the labour force or remittances, be an important factor for the development of both origin and destination country. The importance of this relationship is widely recognized, for example in the United Nations 2030 Agenda for Sustainable Development, and extensively studied by development researchers. A major part of the existing literature thereby focuses on different determinants of migration, whose relevance have been empirically tested in many contexts. There is, however, no such study for the recent Venezuelan migration of historic dimensions. This paper contributes to the literature by addressing this gap. It examines which economic, geographical, social and political factors determined why Venezuelans migrated to some and not to other destination countries. Thereby, it focuses on assessing potential differences in Venezuelan migration patterns between times of relative stability and times of crisis.

Keywords

Migration, Venezuela, Determinants, Panel data, PPML, Destination, Crisis

1 Introduction

Relevance and background

The current humanitarian crisis in the Bolivarian Republic of Venezuela caused an unprecedented outward migration. The Joint Special Representative of the United Nations High Commissioner for Refugees (UNHCR) and the International Organization for Migration (IOM) for Venezuelan refugees and migrants declared the “population outflow” to be “of unparalleled magnitude in the region’s modern history” (UN 2019a). In 2018, a net average of 5,000 Venezuelans left their country each day (UN 2019b; UNHCR 2018a). By the end of the year, the global migrant stock of Venezuelan origin exceeded the threshold of three million (UNHCR 2018b).

Historically, however, Venezuela has been a country of destination for migrants throughout the 19th and 20th centuries (Crasto and Álvarez 2017: 134). With the discovery of the world’s largest oil reserves in the 1920s, Venezuela experienced the highest growth rates in Latin America until the 1970s and was by then among the world’s richest twenty countries (Alvarez and Fiorito 2005: 5; Di John 2014: 1; Hausmann and Rodriguez 2014: 1). To satisfy the need for workers of the booming economy, there was an open-door policy under the dictatorship of General Pérez Jiménez from 1948 to 1958 (Torrealba et al. 1983: 379). The strong economic performance and the 10-year open immigration were two main contributors to high migration inflows for most of the 20th century. However, Venezuela started losing its attractiveness as country of destination in the 1980s and 1990s due to several political and economic incidents. Crasto and Álvarez (2017: 141–142) identify four key causes: the devaluation of the bolivar on ‘Black Friday’ in 1983, the ‘Caracazo’-uprising against neoliberal economic reforms in 1989, the 1994 Venezuelan banking crisis and the rise to power of Hugo Chávez in 1999. Under the socialist administration of Chávez, the net migration rate¹ turned negative around 2010 (Gomez Ramírez 2018: 2).

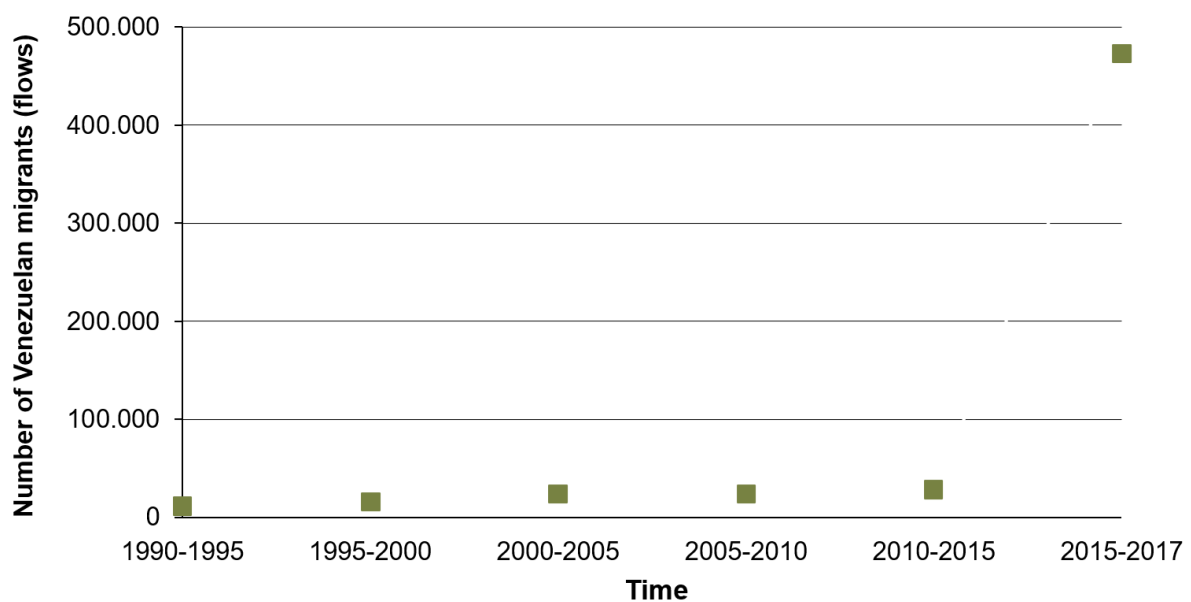
This trend intensified shortly after Chávez’ successor, Nicolás Maduro, assumed office in 2013 (see Figure 1). The root for this development lays in the economic, political and humanitarian crisis that followed. The highly oil-dependent economy contracted as oil prices fell (e.g. from an annual average of 104 \$/barrel in 2013 to 43 \$/barrel in 2016). Hyperinflation (the International Monetary Fund expects the Venezuelan inflation rate to reach 10 million percent by the end of 2019, see IMF 2019a: 166) erodes the income of the average Venezuelan household. On the supply side, price controls and foreign currency withholdings by the government are two of the factors behind the shortage of food and medicine (Doocy et al. 2019: 64; Zerpa 2017). In 2017, the Venezuelan Pharmaceutical Federation reported an 85% shortage of medicine and 6 in 10

¹ The net migration rate is the difference between the number of immigrants and the number of emigrants.

Venezuelans interviewed in a university study stated a body weight loss of 11 kgs in the previous year on average (Gilbert 2018; Human Rights Watch 2018; Landaeta-Jiménez 2017: 18). These circumstances, combined with one of the world’s highest crime rates (e.g. 56 homicide victims per 100,000 inhabitants in 2016, see UNODC n.d.) and accusations of corruption and mismanagement in public companies, have triggered persistent protests. In the course of these demonstrations hundreds of civilians died and many prominent opposition leaders were incarcerated (e.g. see BBC 2017 or Foro Penal 2017). At the national political level, the opposition-controlled parliament was disempowered by a government-loyal Constituent Assembly in 2017 (European Parliament 2018: 3). Moreover, the presidential elections 2018 were domestically and internationally disputed, which resulted in a divide of the international community’s support for Maduro or parliament leader Juan Guaidó.

As a consequence of different aspects of the crisis, the number of migrants from Venezuela increased by around 950,000 between 2015 and 2017 – almost twice the amount (around 510,000) of the twenty-five-year preceding period (see Figure 1). According to estimates by the UNHCR and IOM another 3.3 million are expected to have emigrated up to the end of 2019 leading up to a total of 5 million² Venezuelan living abroad (UN 2019b).³

Figure 1 – Flows of Venezuelan migrants from 1990 to 2017



Notes: Yearly average flows per period (own representation. Sources: IOM 2018a; UN DESA 2017a)

² The total Venezuelan population living in their home country and abroad was around 31 million in the years since 2015 (World Bank 2019; IOM 2018a). Thereby, the number of 5 million Venezuelan migrants accounts for a bit more than 16 percent of the Venezuelan population.

³As official data was not yet available at the beginning of this research thesis, this paper analysis Venezuelan migration flows from 1990 to 2017.

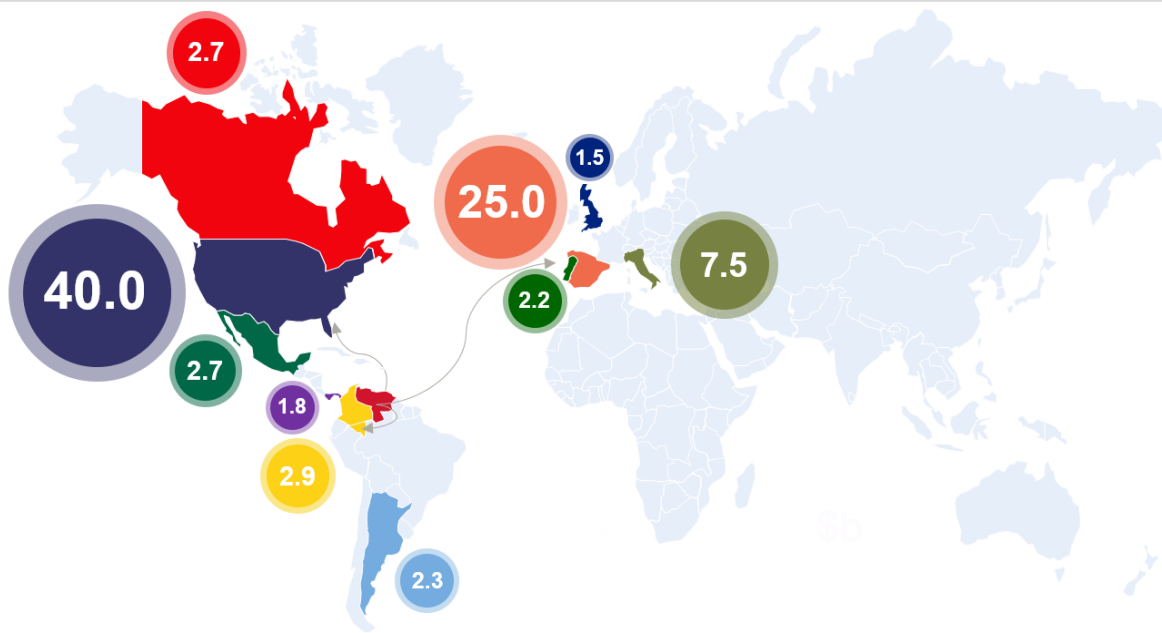
As one of Latin America's largest-ever exodus seems to intensify even further, it becomes crucial to understand the drivers behind these migration flows. In this respect, the attention has so far either been on individual experiences and motives or on descriptive statistics. On the one hand, several multilateral- or non-governmental organizations have conducted surveys with Venezuelan migrants questioning their reasons for leaving their home country (see e.g. IOM 2018b or International Rescue Committee (IRC) 2019). In a UNHCR survey in three Colombian border departments for example, the interviewees listed the difficulty to find food (90%), work (82%) or medicine (54%) as well as the increase in crime and violence (49%) as main triggers for migration (OCHA⁴ 2018). There has also been an increasing coverage on personal stories of Venezuelans, for example of them crossing the borders (see e.g. Al Jazeera 2019 or UNHCR 2018a). On the other hand, the UN and national official statistics have collected data and published reports on Venezuelan migration routes and migrant stocks (see e.g. IOM 2018a). According to these sources, Colombia (inter alia (i.a.) Spanish-speaking neighbouring country), the United States (i.a. wealthiest country in the Americas) and Spain (i.a. former colonizer) received the highest number of Venezuelan migrants from 1990 to 2017.⁵ In these countries large networks of Venezuelans have been formed as these destinations were consistently among the ten major recipient countries of Venezuelan migrants. However, there are striking differences in the composition of the other destinations before and after the described intensification of the migration crisis around 2015⁶ (see Figure 1). This becomes evident when comparing Figures 2 and 3. As the world maps show, the major destinations of Venezuelan migrants mainly consisted of North American and European countries before 2015, while they were almost exclusively South American countries afterwards.

⁴ United Nations Office for the Coordination of Humanitarian Affairs (OCHA)

⁵ See also Table 2 in section 3.3 for a list of the destinations that received the highest number of Venezuelan migrants over this period

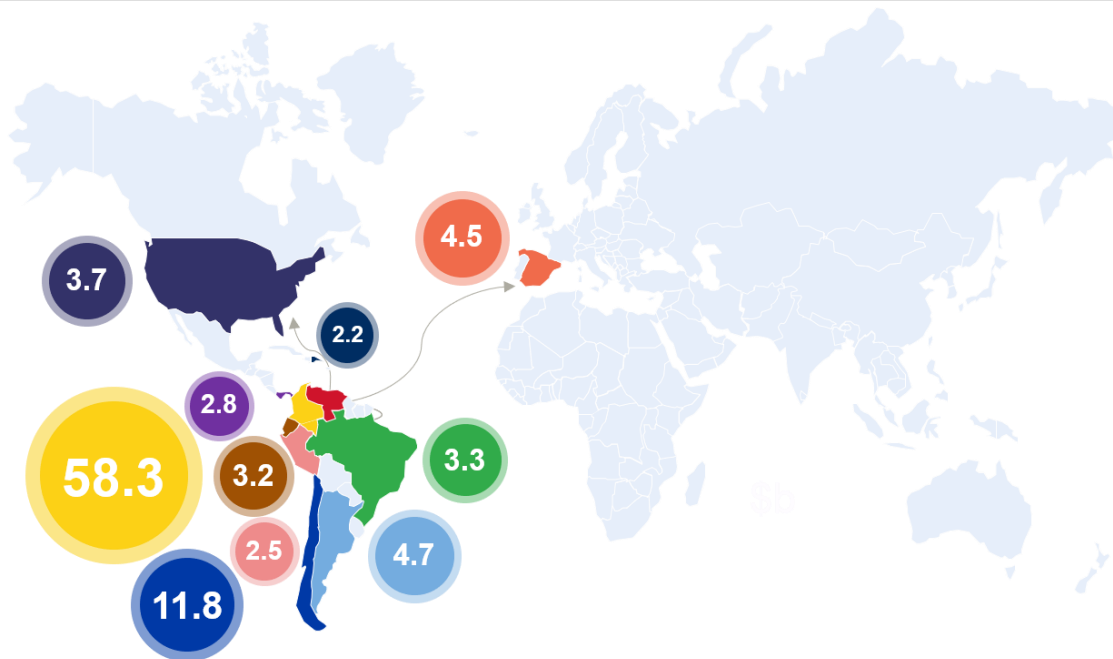
⁶ There is a clear change in the data in 2015 (shown in Figure 1). Before that year, the yearly average migration flows from Venezuela grew in a one- to two-digit percentage range. After 2015, they increased by over 1600 percent; from almost 27,800 Venezuelans leaving their home country on a yearly basis between 2010 and 2015 to around 473,000 in the years afterwards.

Figure 2 – Flows of Venezuelan migrants to ten major destination countries pre-2015



Notes: As percentage share of total Venezuelan migration flows from 1990 to 2015 (own representation. Sources: IOM 2018a; UN DESA 2017a)

Figure 3 – Flows of Venezuelan migrants to ten major destination countries post-2015



Notes: As percentage share of total Venezuelan migration flows from 2015 to 2017 (own representation. Sources: IOM 2018a; UN DESA 2017a)

Research gap, question and methodology

As outlined, there is extensive information about why the current Venezuelan migration flows emerged, which routes migrants take and in which countries they end up. However, the information is presented in a rather unsystematic manner without reflection of the broader underlying drivers. To the best of the author's knowledge, there is no paper that systematically studies why Venezuelans migrated more to some and not to other countries. This significant knowledge gap motivated the present research paper to pursue the following research question:

What are the factors that determined the choice of destination countries of Venezuelan migrants from 1990 to 2017?

There are many different methods to study migration and to tackle this subject, which can be categorized into qualitative and quantitative approaches. As mentioned, there are already many qualitative accounts and background reports of Venezuelan migrants but no empirical study that quantitatively examines the effect of different factors on the overall Venezuelan migration flows in that period. For quantitative research, there is macro but not micro data available (e.g. because countries just publish general information on the number of migrants received per country of origin but no standardized details on their characteristics).

In this respect, this paper exploits very recent UN and IOM migration data from 1990 until 2017 accounting for migration flows from Venezuela to 230 destinations. It specifically focuses on analysing this flows pre- and post-2015, because around that time the number of Venezuelan migrants started to explode (see Figure 1) and the patterns of migration changed substantially (see Figure 2 and 3). There seems to be a tendency of richer countries receiving more Venezuelan migrants in the period before 2015 and of closer countries in the period afterwards. Due to the potential importance of economic and geographical factors, the quantitative macro-model to be used needs to be able to test for their influence on Venezuelan migration. This is one of the reasons why this paper applies a gravity model of migration. This method is well suited for this purpose of analysis as in its core it models migration flows as dependent of the economic sizes of origin and destination countries, as well as the geographical distance between them. Over time, findings of different migration studies have been incorporated into the model and extended it to control for further, e.g. social, historical or political, determinants of migration. For these reasons, the gravity model is recognized as one of the most prominent and robust method to study patterns of trade or migration flows (e.g. Head and Mayer 2014 or Leamer and Levinsohn 1995: 1384). Poot et al. (2016: 1) summarize the frequently mentioned reasons for the gravity model's success and popular use with "firstly, its intuitive consistency with migration theories; secondly, ease of estimation; and, thirdly, goodness of fit in most applications."

Contribution and structure

This paper contributes to the literature by systematically studying, for the first time, the patterns of Venezuelan migration during times of crisis (2015-2017) and comparing them with the ones in times of relative stability (1990-2015). The core finding is that Venezuelans were in both times migrating more to destinations which had already a large network of compatriots, but they were immigrating more to countries with a high economic standard of living before 2015 and to geographically closer ones afterwards.

The remainder of the paper is structured as follows. Section 2 provides a review of the empirical literature on determinants of migration. Section 3 lays out the analytical framework by describing methodology and data. Section 4 presents and discusses the empirical results and robustness checks. Section 5 concludes with some final remarks.

2 Literature Review

The aim of this paper is to examine which underlying factors influenced the choice of destination country for Venezuelan migrants. For that purpose, the analysis of this paper is based on relevant determinants of international migration identified and described in the existing literature. The review of this literature will guide the choice of determinants for the empirical model.

Economic standard of living and geographical distance

One of the earliest empirical researches were conducted by Ravenstein (1885, 1889), who pioneered in the field of migration studies with two papers, which were both prominently entitled “The Laws of Migration”. Based on his analysis on migration flows or “currents of migration” in Great Britain, his first law indicated the important role of geographical and economic factors by stating that “migrants only proceed a short distance [...] in the direction of great centres of commerce and industry” (Ravenstein 1885: 198). In 1962, Tinbergen introduced the gravity equation for the context of trade, which was later adopted to study population migration (e.g. Flowerdew and Salt 1979). In analogy with Newton’s law of universal gravitation, trade or migration flows are positively related to the masses of two countries and negatively to the distance between them (Anderson 2011: 134–135; Tinbergen 1962: 65). The literature of gravity models of migration uses different proxies for the countries’ relative masses: gross domestic product (GDP) (see e.g. Karemera et al. 2010 or Dedeoğlu and Genç 2017), GDP per capita (see e.g. Bang and MacDermott 2019 or Mayda 2010) or population size (see e.g. Lewer and Van den Berg 2008 or Ramos and Suriñach 2017). Despite different definitions of the masses, the results are consistent across different studies (as also reflected in Head and Mayer’s (2014) meta-analysis for example). Wealthier and more populous countries generally attract more migrants than their counterparts, while distance acts as constraint. As repeatedly described in the literature (e.g. Poprawe 2015 or Ruysen and Rayp 2014), distance has a significant negative effect on migration flows. It discourages migration as larger distances are generally associated with higher transportation and psychological costs (as it involves travelling to less familiar places; see Greenwood 1975). This literature strand has different theoretical microeconomic foundations. One prominent theory explaining migration flows is the random utility maximization model⁷ for example. It states that individuals compare their current utility with the potential benefit of migrating to and living in a certain area considering the associated costs of doing so (Ramos 2015: 2). Another theory, the labour market model, provides an example for such a benefit and a reason to migrate with the higher wage a worker expects to earn in a destination country (see e.g. Lewer and Van den Berg 2008 or Todaro 1969). Overall, based on

⁷ For more detailed information see for example Beine et al 2015 or Ortega and Peri 2013

theoretical frameworks and empirical findings, migrants are generally expected to immigrate more to wealthier, more populous and closer destination countries.

Shared border, colonial relationship and language

There is a large set of bilateral commonalities and differences, the effects of which have been assessed by numerous studies. A consistent pattern is the positive and significant effect of two countries sharing a common border, colonial relationship or language, as Hatton (2009: 203–204) or Brekke et al. (2017: 2) identified in their literature reviews. This finding has been supported by evidence from several empirical studies (e.g. Echevarria and Gardeazabal 2016; Kim and Cohen 2010; Poprawe 2015). As a consequence of the argumentation for the fundamental factor distance (see above), it can generally be expected that countries that have a common border have more migration flows between them (Mayda 2005: 13; Ruysen and Rayp 2014). Besides geographic distance, linguistic proximity also plays a role in a migrant's decision for a destination country. As Chiswick and Miller (2015: 237–240) explain in their 'economics of language' theory or Adserà and Pytliková (2015: 51) show in their utility-maximising model, immigrants speaking the local language can generally expect better employment opportunities and higher earnings. Lastly, not only a shared border or language but also common colonial ties might lead to more migration flows between two countries. Bilateral variables indicating if origin and destination country where in a colonial relationship or had a common colonizer, tested for example by Ramos and Suriñach (2017), capture a series of possible effects. One of them is the increased probability of having the same language, with the causal chain on migration flows explained above. Another is that through a shared colonial history, the culture, political and legal system of two countries tend to be similar, which also reduces a migrant's cost of adaptation (Mayda 2010: 1261). To sum up, destination countries that share a common border, colonial relationship or language with an origin country are generally expected to receive higher migration flows from that origin country.

Migrant networks

Communities of migrants living in a certain destination country also play an important role determining migration flows. Research generally controls for such migrant networks separately or as Simpson (2017: 4) puts it: "nearly every contemporary study of determinants of migrations considers the importance of migrant networks in host country." Due to the role of social capital, the stock of migrants with a citizenship different than the one of the host country is a strong and positive predictor of migrant flows (Beine and Parsons 2015: 727; McKenzie and Rapoport 2007; Simpson 2017: 4). There are different reasons and explanations for this effect of networks lowering the cost of migration. One line of argumentation is linked to the decision of migrating to a certain destination country. As Neumayer (2005: 393) highlights, such networks can

demonstrate to other fellow countrymen that immigration to a specific country is generally possible. In this way, psychological costs of migration can be reduced as Ruysen and Rayp (2014: 428) argue and show in a human capital model of migration in the context of Sub-Saharan Africa between 1980 and 2000. Another explanatory approach is related to the local support of compatriots that migrants can expect at arrival and during their stay in a foreign country. By providing assistance and information, these networks generally lower uncertainties of new migrants (Barthel and Neumayer 2015: 1131). They might support newly arrived migrants to find housing and work (Simpson 2017: 4; Pederson et al. 2008: 1161). As Massey et al. (1993: 448) summarize in their network theory, migrant networks “increase the likelihood of international movement because they lower the costs and risks of movement and increase the expected net returns to migration.” With regard to the measurable effect of networks on migration, Beine et al. (2015: 508) identify a common range in several studies⁸: a one percent larger migrant stock is expected to result in a 0.4 to 1 percent higher migration flow in the decade that follows. Again, having a large network of migrants from an origin country living in a destination country is expected to positively affect migration flows from the former to the latter.

Poverty & trade

Poverty also affects migration flows. Although often analysed as factor forcing migration, an area's poverty level can also be a relevant factor encouraging people to migrate to a more prosperous destination. This effect can partially be captured by considering countries' GDP per capita in a model. However, as GDP per capita is just an average for a country's standards of living, income and wealth could be distributed unequally⁹. For that reason, people might not only choose to migrate to countries with high economic standards of living but also to destinations with low poverty rates. As Castelli (2018: 3) describes, poverty is among the main triggers as well as determinant in migrants' “search of a better life”. This has been confirmed in various studies. Parkins (2010) found, for example, that it is one of the determinants most commonly mentioned by Jamaican migrants surveyed. Another economic factor that might affect migration between two countries or regions is their trade relationship. Due to close business ties between an origin and a destination country, migrants might choose to immigrate to a certain destination as they have a personal connection to it or more information about its living conditions. Figueiredo et al. (2016) for example investigate the impact of trade agreements on international migration for 200 countries over a period from 1960 to 2010. Their findings suggest a stimulating role of regional trade agreements (RTAs) or membership in the World Trade Organization (WTO) on bilateral

⁸ Beine et al. 2011; Bertoli and Moraga 2013; Beine and Parsons 2015; Pedersen et al. 2008; Dreher and Poutvaara 2011

⁹ For more information see e.g. Milanovic's (2013) or Piketty's (2014) work

migration flows (Figueiredo et al. 2016: 99, 110). Campaniello (2014) shows a positive and significant effect of trade on migration for countries of the Eurozone. With respect to the impact of trade relationships on migration, this paper will specifically examine whether or not countries importing Venezuelan oil are among the preferred destination countries of Venezuelan migrants. Herewith it proxies Venezuela's trade volume as the commodity almost exclusively accounts for all Venezuelan exports according to OPEC¹⁰ statistics. So, in a nutshell, migrants are generally expected to immigrate more to destination countries that have low poverty rates and a shared trade relationship with their origin country.

Political factors

Further determinants of international migration are political factors. They can be largely categorized in conditions of both a country's political situation and its migration policy. One example for the first category is Poprawe's (2015: 345) paper, which found a significant estimate for the political stability of the destination country. This indicates that migrants generally choose politically stable countries as their destination (also described by Ramos 2015). The other category, migration policy, also plays an important role on migration flows. In this regard, Beine et al. (2019) examined the impact of the Schengen Agreement, a policy allowing the free movement of persons within the majority of European countries. Following the introduction of the Schengen Agreement, they observed a clear increase in bilateral migration flows among member countries (Beine et al. 2019: 148). However, migration policy can also be more restrictive and thereby limiting migration to a certain destination. Barthel and Neumayer (2015: 1131) explain this with the operation of a deflection effect: With the tightening of the immigration policy of a country or cluster of countries, migrants are deflected to other, mostly neighbouring, destinations. Studying migration to Europe over three decades from 1980 to 2010, Brekke et al. (2017) found strong evidence for this effect as asylum requests to a country significantly increased with the surrounding destinations adopting to stricter migration policies. So, whether more open or more restrictive, migration policies play an important role on migration flows. Overall, a politically stable situation in and an open migration policy of a destination country are generally expected to foster migration flows from an origin country to that destination country.

The presented determinants of migration have extensively been described in the literature and assessed in different contexts. However, there is no study that empirically examines the recent Venezuelan migration with focus on underlying factors determining their choice of destination country. This paper will address this gap and thereby contribute to the growing literature on migration.

¹⁰ See e.g. Organization of the Petroleum Exporting Countries' (OPEC) facts and figures about Venezuela: www.opec.org/opec_web/en/about_us/171.htm

Table 1 - Explanatory variables and characteristics of key papers

Determinant	Paper				Finding: <i>Migrants are generally immigrating more to destination countries that ...</i>
	Author(s)	Type of analysis	Method	Context of analysis	
<i>Economic standard of living</i>	Anderson (2011) Mayda (2010)	Qualitative Quantitative	Review of theoretical and empirical studies Econometric analysis	multiple countries and years 79 countries: 1980-1995	<i>... have a higher economic standard of living.</i>
<i>Distance</i>	Head and Mayer (2014) Greenwood (1975)	Quantitative Qualitative	Meta-Analysis Review of empirical studies	159 papers multiple countries and years	<i>... are geographically closer located.</i>
<i>Contiguity</i>	Echevarria and Gardeazabal (2016) Ruysen and Rayp (2014)	Quantitative Quantitative	Econometric analysis Econometric analysis	210 countries: 1990-2013 42 countries: 1980-2000	<i>... are contiguous.</i>
<i>Colonial relationship</i>	Ramos and Suriñach (2017) Kim and Cohen (2010)	Quantitative Quantitative	Econometric analysis Econometric analysis	200 countries: 1960-2010 210 countries: 1950-2007	<i>... have a shared colonial relationship.</i>
<i>Language</i>	Chiswick and Miller (2015) Adserà and Pytliková (2015)	Qualitative Quantitative	Review of research on economics of language Econometric analysis	multiple countries and years 223 countries: 1980-2010	<i>... speak a common language.</i>
<i>Migrant networks</i>	Beine, Docquier and Özden (2011) Massey et al. (1993)	Quantitative Qualitative	Econometric analysis Review of contemporary theories of international migration	195 countries: 1990-2000 multiple countries and years	<i>... already have a network of fellow countrymen living there.</i>
<i>Poverty</i>	Castelli (2018) Parkins (2010)	Qualitative Qualitative	Review of macro-, meso- and micro-drivers of migration Interviews	multiple countries and years multiple countries and years	<i>... have low poverty rates.</i>
<i>Trade</i>	Figueiredo, Lima and Orefice (2016) Campaniello (2014)	Quantitative Quantitative	Econometric analysis Econometric analysis	200 countries; 1960-2010 27 countries: 1970-2000	<i>... are close trading partners.</i>
<i>Political situation (e.g. stability)</i>	Poprawe (2015) Ramos (2015)	Quantitative Qualitative	Econometric analysis Review of tools and findings in migration studies	230 countries: 2000 multiple countries and years	<i>... are politically stable.</i>
<i>Migration policy</i>	Beine, Bourgeon and Bricongne (2019) Brekke, Røed and Schøne (2017)	Quantitative Quantitative	Econometric analysis Econometric analysis	54* countries: 1980-2010 54* countries: 1980-2010	<i>... have an open migration policy.</i>

Notes: * While both papers (Beine et al.; Brekke et al.) investigate a total of 54 countries, their composition is different (30 origin and 24 destination countries; 45 origin and 9 destination).

3 Empirical Strategy

3.1 Model

This research paper studies migration flows from Venezuela between 1990 and 2017. Building on the descriptive information with respect to which countries Venezuelans migrate to (see Figures 2 and 3), it deals with the question of what factors have driven them to certain destinations. This paper applies a gravity model for that purpose (see introduction). As described in the literature review, the gravity equation was introduced by Tinbergen in 1962 to study trade flows. With roots in Ravenstein's work (1885, 1889) for example, it was later adopted to the field of migration studies (e.g. by Flowerdew and Salt 1979). In resemblance to Newton's law of universal gravitation, the attraction (in this case trade or migration) between two countries (origin and destination) is proportional to the product of their relative masses (e.g. size of the economies or populations) and inversely proportional to the distance¹¹, see Figure 4:

$$Y_{odt} = \beta_0 \frac{(\text{Mass}_{ot})^{\beta_1} (\text{Mass}_{dt})^{\beta_2}}{(\text{Distance}_{od})^{\beta_3}}$$

Y = trade or migration flows
 $Mass$ = GDP, GDP per capita or population
 $Distance$ = distance
 β = elasticities
 o, d, t = origin or destination country at time t

Figure 4 – Gravity equation of trade or migration (own representation based on Chaney 2018)

The gravity equation can easily be transformed for the purpose of econometric analysis by taking the natural logarithm. This leads, applied to the context of this research, to the following empirical specification:

$$\ln Y_{odt} = \beta_0 + \beta_1 \ln GDPpc_{ot} + \beta_2 \ln GDPpc_{dt} - \beta_3 \ln D_{od} + \beta_4 Z_{dt} + \tau + \mu_{odt} \quad (1)$$

where the subscripts o and d refer to the origin and destination country, respectively. As this paper aims to analyse the historic Venezuelan exodus, Venezuela is the only country of origin and Y represents its migration outflows to 230 destination countries. Subscript t stands for the periods 1990-1995, 1995-2000, 2000-2005, 2005-2010, 2010-2015 and 2015-2017. $GDPpc$ is the average GDP per capita at purchasing power parity (PPP) and indicates the respective mass of Venezuela and of the destination countries in this research. D is the population weighted

¹¹ In contrast to Newton's law of gravitation, distance is not square in gravity models of trade or migration. In addition, distance may not just represent geographical distance between origin and destination countries but also other, e.g. linguistic, cultural or historical, distances (Rojas-Romagosa and Bollen 2018: 15).

geographical distance. The vector Z contains further explanatory factors¹². The coefficients can be interpreted as elasticities (e.g. in the case of β_1) or semi-elasticities (e.g. in case of β_4 for certain variables of Z ¹³) of the dependent variable Y . Finally, τ is the time fixed effect and μ is the unobserved error term.

3.2 Estimation technique

This paper applies a Poisson pseudo-maximum likelihood (PPML) method to estimate equation (1). This is due to two main econometric issues, which were both described in Santos Silva and Tenreyro's (2006) influential paper and caused a paradigm shift in gravity model studies. The authors proved both theoretically and empirically that estimating the transformed gravity equation explained above with traditional methods (e.g. pooled ordinary least squares (OLS), fixed effects (FE) or Tobit) leads to inconsistent estimates. The reason lies in the occurring heteroskedasticity of such log-linear regressions. Based on Jensen's inequality, Santos Silva and Tenreyro (2006: 653) demonstrate that "this is because the expected value of the logarithm of a random variable depends on higher-order moments of its distribution. Therefore, if the errors are heteroskedastic, the [log-linear] transformed errors will be generally correlated with the covariates." This violates the OLS assumption of homoskedasticity resulting in inconsistent estimates of the analysed elasticities (see Wooldridge 2015: 45). For this reason, the authors proposed to use PPML instead of log-linear regressions as it is robust to different degrees of heteroskedasticity.¹⁴

In addition, PPML also deals with a second econometric issue, namely the existence of zero values. Trade and migration data often have zero flows for certain country-pairs. This is also the case in the longitudinal data used in this paper. As mentioned above, the analysis is based on Venezuelan migration flows to 230 destination countries over six time periods, which results in a dataset consisting of 1,380 observations. Of these, 396 observations contain information on such flows, out of which 85 observations or 21% correspond to zero immigration flow. Table 1 shows the frequency distribution of the dependent variable. As the logarithm of zero is not defined, traditional log-linear methods mitigated this issue either by omitting zero values or by adding a small number (e.g. $Y+1$) to it (Santos Silva and Tenreyro 2006). In any case, these methods result

¹² $GDPpc$, D and other explanatory variables are explained in detail in section 3.3

¹³ The coefficients are semi-elasticities in the case of variables representing a proportion (e.g. *poverty*, indicating the share of the population living below the poverty threshold in the destination country) or dummy variables (e.g. *contiguity*, indicating if the destination country shares a border with Venezuela). For more information on the variables see section 3.3.

¹⁴ Santos Silva and Tenreyro (2006: 648) used Monte Carlo simulations with several cases of heteroskedasticity to compare different estimators. Thereby, PPML consistently provided consistent estimates.

in inconsistent estimates, as explained above. PPML, however, is a method, which allows to include zero values of the dependent variable (Beine and Parsons 2015: 734).

Due to Santos Silva and Tenreyro's contribution highlighting these issues of earlier gravity studies of trade or migration and providing an adequate response in form of the PPML estimator, it has become the standard in the field (Arvis and Shepherd 2013: 515; Figueiredo et al. 2006: 105; Correira et al. 2009: 2). For these reasons the PPML method is also applied in the analysis of this paper.

3.3 Data

Migration flows

The dependent variable (*flows*) captures the inflows of Venezuelan migrants to destination countries worldwide over the period from 1990 to 2017. International migrants are thereby generally defined as individuals who are born in a country different than the ones where they currently reside (UN DESA 2017b: 3). With the intensifying migration crisis, the UN Migration Agency IOM began to publish a series of official reports about trends in migration from Venezuela. This paper relies on the April 2018 release of data by the International Organisation of Migration (IOM 2018a), figures of which are until 2017 and are based on national sources and the United Nations Department of Economic and Social Affairs (UN DESA 2017a). The dataset used from these sources contains information on migrant stock of Venezuelan origin for 230 destination countries from 1990-2017. On this basis, migration flows were proxied by taking the differences between the initial and end values of the stock per country for the analysed periods. Applying this commonly used approach in the absence of flow data, inevitably results in obtaining negative migration flows when migrant stocks declined over a period of time (Beine and Parsons 2015: 736). In the context of this research, such declines can happen for example when Venezuelan migrants return home, migrate to another country, acquire the destination country's citizenship or die. As negative migration flows cannot be used by the proposed estimation technique, the literature describes different approaches of dealing with this issue. Rojas-Romagosa and Bollen (2018: 16) categorize them as follows: "taking only non-negative values, set the negative values to zero or add the negative values as an increase in the inverse flows." As this paper, given its research question, is primarily interested in unilateral migration from Venezuela to different destination countries and as it chooses not to omit negative values, it sets them to zero (following e.g. Beine et al. (2011)'s approach).

Further, it is generally important to note that both migration stocks and flows are aggregates that consider the total number of Venezuelan migrants. This means that these values include

economic migrants as well as refugees, asylum-seekers and other registered persons from Venezuela. However, they do not account for non-registered illegal migration.

Tables 2 and 3 present descriptive information on the dependent variable. Table 2 shows the distribution of the 64 to 68 countries that reported information on Venezuelan migrants per world region. Thereby it is noticeable that European, Caribbean, South, Central and North American countries are over- and African or Asian countries are under-represented in the dataset. This outcome could have been expected based on the gravity model, which predict that international migrants generally migrate to wealthier and geographically close destinations. Table 3 reports the twenty countries that received most Venezuelans in the periods from 1990 to 2017 in descending order.

Table 2
Countries per region reporting data on inflows of Venezuelan migrants

Period	Region								Total
	Europe	Caribbean*	South Am.	Central Am.	Asia	North Am.	Africa	Pacific	
90-95	27	12	9	6	4	3	2	1	64
95-00	28	12	9	6	4	3	2	1	65
00-05	28	12	9	6	4	3	2	1	65
05-10	28	13	9	6	4	3	2	1	66
10-15	29	14	9	6	4	3	2	1	68
15-17	29	14	9	6	4	3	2	1	68

*Notes: Caribbean includes Aruba (1990-2017), Bonaire, Saint Eustatius and Saba (1990-2017), Curacao (2010-2017) and Sint Maarten (2005-2017). Bonaire, Saint Eustatius and Saba are combinedly captured as one observation.

Table 3
Net inflows of Venezuelan migrants by destination country

Country	Periods						Total
	90-95	95-00	00-05	05-10	10-15	15-17	
Colombia	2,039	2,038	0	6,374	5,203	551,286	566,940
United States	33,453	34,176	32,958	38,199	74,615	34,704	248,105
Spain	6,235	22,883	47,120	39,440	17,748	42,438	175,864
Chile	799	896	0	0	5,487	111,050	118,232
Argentina	309	310	0	0	11,620	44,271	56,510
Italy	0	0	20,055	20,159	8	861	41,083
Ecuador	571	571	666	1,763	2,814	30,585	36,970
Panama	228	274	3,603	3,823	1,468	26,482	35,878
Brazil	474	473	357	320	581	31,575	33,780
Mexico	734	830	3,502	4,260	5,173	16,623	31,122
Peru	0	341	401	232	0	23,888	24,862
Dominican Republic	1,576	1,575	0	0	285	20,455	23,891
Canada	2,243	2,376	4,476	3,571	1,893	710	15,269
Portugal	3,261	4,002	1,522	0	2,851	429	12,065
Great Britain	1,627	1,664	2,207	2,701	0	392	8,591
Costa Rica	0	220	0	670	5,077	2,455	8,422
Germany	644	644	2,412	2,000	309	1,215	7,224
Uruguay	0	0	0	0	1,290	4,178	5,468
Australia	309	255	430	1,760	1,535	237	4,526
France	105	105	2,030	365	588	0	3,193

Notes: Twenty major recipient countries listed.

The factors determining why Venezuelan migrants have immigrated to these destination countries are the research focus of this paper. To find possible explanations to answer this research question, this paper uses a broad set of independent variables, which are based on theoretical foundations and empirical findings in migration studies presented in the literature review. It tests this knowledge in the context of the Venezuelan migration flows to different destination countries.

GDP per capita and distance

The core of the explanatory variables thereby consists of the three fundamental factors of the gravity model, the respective mass of the origin and destination country as well as the geographical distance between them. This paper selects GDP per capita as measure for the countries' masses. One reason is that it – in contrast to a measure of the population size – represents an economic incentive to migrate. Another one is that this incentive – in contrast to GDP – more accurately reflects a country's standard of living that a migrant can potentially expect. The annual data for Venezuela's and destination countries' GDP per capita (*GDPpc VEN* and

GDPpc d, respectively) are measured in PPP terms to current prices. They are sourced from the IMF World Economic Outlook for the period from 1990-2017 (IMF 2019b). As the IMF does not provide such information on Cuba, the country's GDP per capita (PPP, current prices) values are exceptionally collected from the World Bank (2019). The geographical proximity (*distance*) measures not only the distance in kilometres between the capitals of Venezuela and destination countries but also between a pair of these countries' major cities weighted by their respective population. These average values were calculated based on Mayer and Zignago's (2005, 2011) explanations and formula and obtained from the Dynamic Gravity Dataset (Gurevich and Herman 2018).

Shared border, colonial relationship and language

Two other bilateral factors are also collected from the Dynamic Gravity Dataset. The first one is a dummy variable taking the value 1 if Venezuela and the destination country share a common border (*contiguity*). A border is thereby defined as river or land, but not as lake or sea border (Gurevich and Herman 2018). The other one, also a binary variable, indicates if countries have a past colonial relationship (*colony*)¹⁵. As for the context of this paper, the country-pair Venezuela-Spain is the only one with a value of 1, as Spain was Venezuela's colonial power until 1811. Another bilateral variable, denoting if country-pairs share a common official language (*language*), is sourced from the CEPII GeoDist database (Mayer and Zignago 2011) rather than from the Dynamic Gravity Dataset. This decision has been taken, because the latter dataset accounts for any commonly language spoken in two countries according to the CIA World Factbook. However, this leads to outcomes that country-pairs such as Venezuela-Switzerland for example take the value of 1 despite just 2.4% of the Swiss population speaking Spanish (CIA 2016-17). For that reason, this paper confines itself on sharing an official language as reported in the CEPII GeoDist database.

Migrant networks, poverty rates and population

As described in the literature review, existing migrant networks and low violence can be further factors influencing a migrant's choice for a destination country. For the analysis of this paper, networks are reflected by the destination country's stock of Venezuelans in 1990 (*network*) and, as robustness check, by the stock in the period before (*network pb*). These two variables are constructed using the database for the dependent variable (IOM 2018a). In addition, migrants

¹⁵ The variable *colony* indicates a colonizer-colony relationship (e.g. Spain-Venezuela) and not a shared-colonizer relationship (e.g. also Colombia-Venezuela), as commonly used in other contexts (see e.g. Kim and Cohen 2010). This is due to the fact that the latter captures information that is already mostly captured by the variable *language*. The colonizer-colony relationship, as measured in this paper, is of interest for this context in order to understand if Venezuelans choose Spain as destination country after controlling for other factors.

might not just be attracted to a certain destination with a large migrant network but also to one with low poverty rates. This paper controls for that with the use of the World Development Indicators (World Bank 2019) representing the share of a country's population living below the poverty headcount of \$1.90 a day in 2011 PPP (*poverty*). The same databank (World Bank 2019) is also used to collect data on the total population of destination countries (*population*).

Economic growth and trade

For the aim of testing other possible determinants of Venezuelan migration flows, this paper tests a set of further economic and political variables. On the economic side, it analyses the relevance of a destination country's GDP growth and its trade relationship with Venezuela. The first-mentioned, the annual real GDP growth rate (*GDP growth*) drawn from the IMF (2019b), is considered to account for the overall pace of economic development of a destination. Regarding the trade relationship of a country-pair, the analysis of this paper focuses on the commodity of oil, which accounts for almost all Venezuelan exports¹⁶. The interest lies in testing if Venezuelans migrate to countries purchasing its oil. As research indicates, migrants tend to have more information about and connection with countries that are close trading partners of their homeland. Despite this generally encouraging migration to such destinations, it could also be that Venezuelan migrants avoided certain countries (e.g. due to their similar political system). The variable constructed (*trade*) to test this relationship represents a destination's import of Venezuelan oil (in dollars) relative to its GDP. Data on the commodity are collected from the UN Comtrade Database (2019) and refer to the harmonized system code (HS code) 2710, which includes petroleum oils. The GDP values are taken from the World Bank (2019).

Political factors

Finally, this paper analyses different political factors. Despite the fact that such determinants are difficult to be captured, this paper does not want to forego testing such variables due to their potential relevance in determining migration flows. To measure the political stability of a destination country (*stability*), data is sourced from the Worldwide Governance Indicators (WGI) project. The WGI estimates, which are percentile ranks, constitute "perceptions of the likelihood of political stability and/or politically-motivated violence" (Kaufmann et al. 2010). The next variable, *government*, is included to study potential patterns of Venezuelans migrating to or avoiding countries with governments of a certain political spectrum in power. The government types are coded with the value 1 for right-wing, 2 for centre and 3 for left-wing and the information is from the Database of Political Institutions (Cruz et al. 2018). The last two variables relate to a destination country's migration policy and its people's attitude towards immigrants.

¹⁶ See e.g. OPEC's facts and figures about Venezuela: www.opec.org/opec_web/en/about_us/171.htm

Regarding the migration policy, the IOM (2018b) report on Venezuela lists countries which allow free movement to Venezuelan citizens or which have approved specific legislation in the course of the intensifying Venezuelan migration crisis. Based on this source, this paper constructed a binary variable (*legislation*) with value 1 if destination countries had such “extraordinary normative migration tools” in place in a specific year and value 0, otherwise (IOM 2018a: 3).¹⁷ A factor which might indirectly influence immigration policy¹⁸ but rather affect a destination’s attractiveness to migrants is the open and welcoming attitude of its residents. The World Values Survey proxies this by asking participants in up to 60 countries to choose from a list which group of people they would prefer not have as neighbours (Inglehart et al. 2014). The percentage of people per country mentioning immigrants is used as proxy for residence’s attitude towards Venezuelan migrants (*attitude*).

The summary statistics of all variables are presented in Table 4 below, the correlation table can be found in Appendix A1. Time-variant explanatory variables¹⁹ represent the average value per five- or two-year period. Based on the gravity model set-up and transformation, this paper takes logs of the following continuous variables: namely the migration flows, GDP per capita values, distance, migrant networks and homicides. The log values are displayed in brackets. Taking the natural logarithm for these variables is due to the gravity model set-up and transformation²⁰. In the discussion of the results, the coefficients of these variables can be interpreted as elasticities. A list of the variables described in this section and used in the following regressions can be found in Appendix A2

¹⁷ Countries with value 1: Argentina 2009-2017 (Law No. 25,871/2004); Ecuador 2011-2017 (Ecuador-Venezuela Migration Statute and UNASUR VISA; Uruguay 2014-2017 (Law No. 19,254/2014); Peru 2016-2017 (Supreme Decrees No. 002-17, 023-17); Colombia: 2017 (Resolution No. 5797/2017) and Brazil (CNIg Resolution No. 126/2017) (IOM 2018a: 3)

¹⁸ For example, the European refugee crisis in 2015 influenced people’s attitude toward migrants in destination countries such as Austria in a way that resulted in stricter national immigration policies.

¹⁹ *GDP pc VEN, GDP pc d, homicides, GDP growth, poverty, share VENoil, stability, government, legislation and attitude*

²⁰ For more information see section 3.1

Table 4
Summary statistics

Variables	Observations	Mean	SD	Minimum	Maximum
<i>flows</i>	396	3,734.95	29,164.97	0	551,286
<i>GDP pc VEN</i>	396	13,729.75	2,499.46	10,877.78	17,601.45
<i>(ln GDP pc VEN)</i>	(396)	(9.51)	(0.18)	(9.29)	(9.78)
<i>GDP pc d</i>	384	18,422.64	19,190.37	167.90	111,447.60
<i>(ln GDP pc d)</i>	(384)	(9.21)	(1.23)	(5.12)	(11.62)
<i>distance</i>	396	5,736.25	3,728.08	383.78	15,674.95
<i>(ln distance)</i>	(396)	(8.31)	(0.96)	(5.95)	(9.66)
<i>contiguity</i>	396	0.05	0.21	0	1
<i>colony</i>	396	0.02	0.12	0	1
<i>language</i>	396	0.32	0.47	0	1
<i>network</i>	384	2,904.33	7,894.35	1	42,119.00
<i>(ln network)</i>	(384)	(5.57)	(2.48)	(0)	(10.65)
<i>population</i>	390	26,400,000	48,200,000	33,754	323,000,000
<i>(ln population)</i>	(390)	(15.75)	(1.98)	(10.42)	(19.59)
<i>poverty</i>	265	4.60	7.73	0	36.30
<i>GDP growth</i>	376	2.82	2.17	-9.00	12.37
<i>share VEN oil</i>	317	0.00	0.01	0.00	0.06
<i>stability</i>	321	59.65	25.51	3.49	100.00
<i>government</i>	341	1.68	0.96	0	3
<i>legislation</i>	396	0.03	0.16	0	1
<i>attitude</i>	105	0.15	0.13	0.02	0.66

Notes: Summary statistics are only for countries that report data on inflows of Venezuelan migrants (max. 396, see section 3.2). The ln-variables in brackets are listed as they are used to calculate the results of this paper.

4 Results

4.1 Main results

The results of estimating equation (1) are reported in Table 5 (for the time from 1990 to 2015) and Table 6 (for the time from 2015 to 2017). As described in the introduction, some economic, political and social circumstances are fundamentally different in Venezuela in the time before and after the intensification of the crisis around 2015. In the context of the Venezuelan migration, this is evident for example in the strongly growing population outflows from Venezuela (see Figure 1) or the change in the composition of the major destination countries (see Figures 2 and 3). For that reason, this paper divides the time from 1990 to 2017 into two subperiods, a pre-2015 period (with 63 destination countries and 314 observations) and a post-2015 period (with 63 destination countries and observations). The aim is to analyse both parts separately and then compare them to identify patterns and differences in Venezuelan migration.

In Tables 5 and 6, the base variables *GDP per capita of Venezuela*, *GDP per capita of destinations* and *distance* (column 1) are extended by controlling for *migrant networks* in destination countries (column 2) as well as for dummy-variables indicating if the country-pairs' share a common *colonial past* (column 3), *border* (column 4) or *language* (column 5). For the purpose of comparison, the specifications are kept unchanged across tables and the sample sizes are kept the same within tables. The focus is first on this set of variables as they are most frequently described and estimated in the literature on migration. Building on these core specifications, this paper later additionally tests the relevance of other economic, social and political determinants of Venezuelan migration flows.

Table 5

Estimation results core determinants, pre-2015 period (1990-2015)

Dependent variable:	(1) flows	(2) flows	(3) flows	(4) flows	(5) flows
<i>In GDP pc VEN</i>	0.220 (1.583)	0.920 (0.790)	0.747 (0.876)	0.930 (0.868)	0.476 (0.863)
<i>In GDP pc d</i>	0.928*** (0.200)	0.592*** (0.150)	0.700*** (0.151)	0.586*** (0.151)	0.871*** (0.223)
<i>In distance</i>	-0.310** (0.158)	0.137 (0.180)	-0.0360 (0.183)	-0.102 (0.179)	0.229 (0.286)
<i>In network</i>		0.981*** (0.0604)	0.930*** (0.0611)	0.955*** (0.0598)	1.024*** (0.0711)
<i>colony</i>			0.384 (0.281)	0.334 (0.280)	-0.860 (0.793)
<i>contiguity</i>				-0.848** (0.363)	-0.852** (0.382)
<i>language</i>					1.196* (0.726)
<i>N</i>	314	314	314	314	314
<i>Countries</i>	63	63	63	63	63
<i>pseudo R2</i>	0.169	0.829	0.833	0.837	0.842

Notes: Robust standard errors of coefficients in parenthesis. All specifications control for time effects, which are - same as the constant - not shown in the table.

* $p < .1$, ** $p < .05$, *** $p < .01$

Beginning with the base variables of the gravity model of migration, the standard of living in destination countries and the geographical distance to them had an influence on Venezuelan migration in the time from 1990 to 2015 (column 1). In contrast to the coefficient on *Venezuela's GDP per capita*, the one on *GDP per capita of destinations* is consistently positive and highly significant across different core specifications. A one percent rise in *GDP per capita levels of destination countries* was associated with an increase in migration outflows from Venezuela between 0.6 to 0.9 percent. These outcomes indicate that Venezuelans on average did not emigrate because of domestic income levels or its changes but rather because they were attracted by higher relative incomes to be expected abroad. As predicted by the gravity model, the coefficient on *distance* is negative and significant in the base specification. Its magnitude suggests that a one percent larger distance reduces flows of Venezuelan migrants to a destination by around 0.3 percent. However, it loses its significance once controlling for *migrant networks*

(column 2). This factor, which is proxied by the number of Venezuelans that already lived in the destination country in 1990²¹, had a highly significant, positive effect on migration flows from Venezuela. A one percent higher number of compatriots in a certain destination was expected to equivalently increase the number of additional Venezuelan migrants to this country in the pre-2015 period. A shared *colonial relationship* between two countries is frequently described as another important determinant of migration flows. In this analysis, however, it enters insignificant (column 3). One explanation comes from the fact that *colony* captures similar information than the other core variables. For example, one possible link could be between *colony* and *migrant networks* as Venezuela's colonizer Spain had the third highest number of Venezuelans living in the country in 1990 among all destinations (UN DESA 2017a).²² An interesting outcome is shown by the variable *contiguity*, which captures if a destination shares a river or land border with Venezuela (columns 4 and 5). Different than in contexts analysed in the literature, such countries had an 85% lower inflow of Venezuelan migrants between 1990 and 2015. However, this reflects descriptive findings from Figure 2 showing major destination countries in that period. As indicated in this Figure, Venezuelans were generally not just migrating less to neighbouring countries but more to those with Spanish as a common official *language* (column 5). To sum up, the results suggest that Venezuelan migrants were generally attracted to immigrate to non-neighbouring, Spanish-speaking countries with a high GDP per capita and existing migrant networks from 1990 to 2015.

²¹ The results are consistent to defining migrant networks as number of Venezuelans that lived in a destination country in the period before (*network pb*). See Appendix A3 for the respective robustness check.

²² In 1990, the stock of Venezuelan migrants was 42,119 in the United States of America, 33,123 in Colombia and 32,469 in Spain (UN DESA 2017a).

Table 6

Estimation results core determinants, post-2015 period (2015-2017)

Dependent variable:	(1) flows	(2) flows	(3) flows	(4) flows	(5) flows
<i>In GDP pc d</i>	-0.266 (0.254)	-0.464 (0.289)	-0.492 (0.304)	-0.388 (0.286)	0.362 (0.440)
<i>In distance</i>	-0.929** (0.452)	-0.510 (0.365)	-0.399 (0.446)	0.0512 (0.401)	1.284** (0.533)
<i>In network</i>		0.969*** (0.166)	1.000*** (0.167)	0.764*** (0.124)	0.765*** (0.243)
<i>colony</i>			-0.622 (0.606)	-0.255 (0.622)	-3.064*** (1.045)
<i>contiguity</i>				1.761*** (0.384)	2.653*** (0.608)
<i>language</i>					3.855*** (0.930)
<i>N (= countries)</i>	63	63	63	63	63
<i>pseudo R2</i>	0.194	0.737	0.740	0.811	0.929

Notes: Robust standard errors of coefficients in parenthesis. Constant not shown in the table.

* $p < .1$, ** $p < .05$, *** $p < .01$

The picture changes substantially when the period from 2015 to 2017 becomes the focus of analysis (Table 6). During this time, in which the intensification of the Venezuelan migration crisis falls, different migration patterns occur. The *GDP per capita of destination countries* is not a significant determinant anymore. Instead, variables capturing geographical factors become more important. In the base specification (column 1), the effect of *distance* on migration flows is still significant and in the expected direction but is now three times larger than in the period from 1990 to 2015. After 2015, destinations with a one percent larger geographical distance to Venezuela experienced an almost equivalently lower number of Venezuelan migrants on average during that time. The coefficient of *distance* changes over the course of adding other core variables to the PPML regression (columns 2 to 5). This is initiated by the variable *migrant networks*, which itself is consistently significant and positive to a similar extent as before 2015. More importantly, however, the coefficient of *distance* becomes statistically positive when controlling for further, strongly related factors. In column (5), this positive coefficient may mainly be explained by the variables *contiguity* and *language*. While the first one captures Venezuela's neighbouring countries, the second one represents countries with Spanish as official language,

out of which – with exception of Spain²³ – all are located in South or Central America. Thus, after controlling for many close destinations through these two variables, the coefficient of *distance* becomes positive. The coefficients of the last two core variables, *contiguity* and *language*, are themselves quite different to the period before 2015. *Contiguity* changed sign and is now positive, indicating that 1.8 to 2.7 times more Venezuelans migrated to contiguous countries than to non-neighbouring countries in times of the Venezuelan migration crisis. *Language* still moves in the same positive direction as before 2015 but with higher magnitude and significance. Spanish-speaking destinations received almost four times as many migrants from Venezuela between 2015 and 2017 as countries with different official languages. After controlling for the above-mentioned factors, the variable proxying the colonial relationship with Spain, *colony*, becomes significantly negative.

Comparing the two periods, pre- and post-2015, there are some striking differences and commonalities. From 1990 to 2015, *GDP per capita of the destination countries* significantly determined Venezuelan migration flows. This suggests that in times of relatively stable conditions in Venezuela, the population outflows were driven by the economic incentive of high potential incomes in other countries. However, with the deteriorating situation in Venezuela, GDP per capita was no longer a relevant determinant and geographical factors gained in importance. The strongly growing number of Venezuelans leaving their country were generally migrating to geographically close destinations. This is indicated in Table 5 by the *distance* variable in the base specification and by the variables *language* and *contiguity* in the extensive core specification. Despite this shift in important determinants of the Venezuelan migration from economic factors in times of relative stability to geographical factors in times of crisis, there are also some commonalities. The *origin's GDP per capita* and its *colonial* relationship (with one exception, as discussed above) were generally not significant in the context of the analysed Venezuelan migration. However, Venezuelans on average immigrated significantly more to countries with an existing *network* of compatriots. The effect lies within the consensual range identified by Beine et al. (2015)²⁴ in both periods.

²³ The other exception, Equatorial Guinea, does not report information on Venezuelan migrants. As the observation is a missing value, it is not considered in the analysis.

²⁴ See section 2 for more information

4.2 Robustness checks

The core variables tested in the section before are amongst the most frequently described and standardly tested determinants in migration studies. However, there are further social, economic and political factors that could have determined Venezuelan migration flows. By considering them in the analysis, this section pursues a twofold purpose: It aims to assess both the relevance of these further determinants as well as the consistency of the core findings. The results are presented in Table 7 (pre-2015 period) and Table 8 (post-2015 period). They are structured in such a way that the base specification (1) is expended by each further factor first estimated individually (columns (2)-(5) and (7)-(10)) and then combined with other core and further factors (columns (6), (11) and (12)).

Social and economic factors (1990-2015)

This paper starts by analysing the effect of these further factors on Venezuelan migration in the time from 1990 to 2015 (Table 7). As described in the literature review, countries with a higher GDP per capita level or a larger population generally experience higher inflows of migrants. As this paper already considers the former factor in the base specification, it now controls for a destination country's *population* size. This further social factor enters highly significant and positive (column 2). Countries that were 1 percent more populous were expected to receive 0.9 percent more Venezuelan migrants in the pre-2015 period. Next, we control for three additional economic factors. First, for a destination country's *GDP growth* rate, which serves as an indication of the current state of its economy. Migrants are generally expected to immigrate to countries with a booming economy where, for example, finding a job is easier due to the high need for workers. However, after controlling for GDP per capita in the base specification, GDP growth was not a significant determinant of Venezuelan migration (column 3). The contrary is true for the second further economic factor, a destination country's *poverty* rate, which represents the share of its population living below the poverty headcount of \$1.90 a day. As expected, countries with higher poverty rates had lower inflows of Venezuelan migrants on average (column 4). The third further economic factor examines the effect of a country-pairs' *trade* relationship on Venezuelan migration. As Venezuela almost exclusively exports oil, this paper specifically assesses if Venezuelans were choosing to migrate to countries that largely purchased Venezuelan oil (relative to their GDP). As the results suggest, there is no such effect before 2015 (column 5).

Political factors (1990-2015)

Besides these further social and economic factors, there are also political factors that could have determined the direction of migration flows from Venezuela. Based on the existing literature, such determinants can largely be categorized into two groups: those concerning a destination country's political situation or its immigration policy. As described in section 3, this paper tests

two proxies per group on their influence on the Venezuelan migration. With regard to the political situation, the focus lies on the *political stability* (perception of likelihood of political stability and/or politically motivated violence) and the *type of government* (1-right, 2-centre, 3-left) in a destination country. Different than expected, Venezuelans seem to have migrated to politically less stable countries between 1990 and 2015 (column 7). The coefficient of *political stability* is significant and negative, indicating that countries with a 1-point higher percentage rank received 0.05 percentage fewer Venezuelan migrants. However, the effect is relatively small and loses its significance once controlling for other political factors (column 11) and other core factors (column 12). The *type of government* in a destination was not a relevant determinant of Venezuelan migration (column 8). The other group, a country's migration policy, was proxied directly by its *legislation* towards Venezuelans and indirectly by the general *attitude* of its population towards immigrants. *Legislation* is thereby a binary variable capturing if a destination country allowed free movement to Venezuelans or had more open, tailored policies in place for them (value 1) or not (value 0). As the results suggest, destinations that fulfilled these criteria received 1.7 times more Venezuelan migrants in the pre-2015 period than countries that had no special immigration policy for Venezuelans in place (column 9). The second proxy, *attitude*, represents the share of the population in a country covered by the World Value Survey that stated the preference to not have immigrants as neighbours. This variable aims to capture the general resistance (higher values) or 'welcoming culture' (lower values) towards immigrants, which could have indirectly influenced a country's immigration policy. As Table 6 shows, attitude did not significantly influence the choice of destination country of Venezuelan migrants (column 10). Note, however, that the number of observations in column (10) is relatively low as less than a third of all countries that reported information on inflows of Venezuelan migrants were covered by the World Value Survey. For that reason, *attitude* was not considered in other specifications of the pre- and post-2015 period.

Overall, a destination country's *population* size is the only further factor that consistently and significantly determined Venezuelan migration in the period from 1990 to 2015. After controlling for other core or further factors (columns (6) and (12)), it halves in magnitude. The factors *poverty*, *stability* and *legislation* are significant determinants when estimated individually but not when combined as in the above-mentioned specifications. Other further economic or political factors analysed seem not to have played a relevant role in the pre-2015 period.

Social and economic factors (2015-2017)

In the time after 2015, presented in Table 8, having a large *population* is still an important characteristic of major destination countries of Venezuelan migrants (column 2). After

controlling for the base variables, a 1 percent more populous country was expected to have a 1.1 percent higher inflows of such migrants. As also observed in the period before 2015, a destination country's *GDP growth* rate seems not to have significantly affected Venezuelan migration in the time from 2015 to 2017 (column 3). There are, however, two slight differences in the effect of two further economic factors. While a country's *poverty* rate is now consistently insignificant across different specifications, a destinations' *oil trade* relationship negatively affected Venezuelan migration (columns 4 and 5). Destinations with a 1 percent higher share of oil imports from Venezuela (relative to their GDP) experienced a 3.8 percent lower number of Venezuelan immigrants. This outcome suggests that Venezuelan migrants were generally avoiding close oil trading partners of their home country in times the crisis after 2015. However, this result is just significant at the 10 percent level and exceeds this critical threshold once controlling for other core and further factors (columns (6) and (12)).

Political factors (2015-2017)

As part of the three²⁵ further political factors estimated for the post-2015 period, the results for the effect of a country's *political stability* are mixed (column 7). Countries with a 1-point higher percentage rank were associated with a 0.08 percent lower inflow of Venezuelan migrants. However, this effect more than halves after controlling for other core and political factors (column (11)) and becomes positive once considering all factors (column (12)). The latter indicates that Venezuelans leaving their home country in times of crisis were migrating to politically more stable countries. The coefficient on *type of government* estimated individually suggests that countries with right-wing governments received significantly more Venezuelan migrants than those with centre or left-wing governments (column 8). However, it loses significance once controlling for other core and further factors (columns (11) and (12)). Different than in the period before 2015, the coefficient on *legislation* is now consistently highly significant. Countries with a more open immigration policy towards Venezuelan citizens received between 1.5 to 3.2 times more of their migrants during times of crisis (columns (9), (11) and (12)).

As mentioned in the beginning of this section, including further social, economic and political factors in the analysis not just allows to assess their relevance in the context of the Venezuelan migration between 1990 and 2017, but also to test the consistency of the earlier estimated core results. With regard to the latter, there are few differences. Having a shared border, for example, is not a significant determinant in the pre-2015 period when controlling for these further factors. However, the overall outcome, stating that Venezuelans generally migrated to economically prosperous countries before 2015 and to geographically close countries afterwards, still holds.

²⁵ The factor *attitude* (specification (10)) was not considered for the period from 2015 to 2017 as there was no wave of the World Values Survey conducted in that time.

Table 7 – Robustness checks, pre-2015 period (1990-2015)

Dependent variable:	(1) flows	(2) flows	(3) flows	(4) flows	(5) flows	(6) flows	(7) flows	(8) flows	(9) flows	(10) flows	(11) flows	(12) flows
<i>In GDP pc VEN</i>	0.220 (1.583)	-0.055 (0.719)	0.062 (1.598)	-1.593 (1.736)	-0.528 (1.643)	-0.473 (0.706)	-2.346 (1.752)	-0.360 (1.549)	0.0142 (1.630)	0.724 (1.788)	-0.703 (0.803)	0.453 (0.715)
<i>In GDP pc d</i>	0.928*** (0.200)	0.953*** (0.099)	0.952*** (0.219)	1.519*** (0.382)	1.016*** (0.258)	1.133*** (0.384)	1.984*** (0.372)	1.178*** (0.273)	0.969*** (0.202)	0.836*** (0.221)	1.346*** (0.324)	1.336*** (0.378)
<i>In distance</i>	-0.310** (0.158)	-0.969*** (0.217)	-0.347** (0.171)	-1.959*** (0.433)	-0.521** (0.207)	0.089 (0.625)	-0.605*** (0.218)	-0.812*** (0.268)	-0.323** (0.160)	-0.204 (0.329)	-0.0828 (0.354)	-0.085 (0.704)
<i>In population</i>		0.872*** (0.059)				0.436*** (0.120)						0.419** (0.166)
<i>GDP growth</i>			0.026 (0.069)			0.114 (0.090)						0.072 (0.089)
<i>poverty</i>				-0.084*** (0.031)		0.022 (0.041)						0.054 (0.045)
<i>trade</i>					-32.64 (27.80)	5.303 (48.00)						-23.43 (52.61)
<i>In network</i>						0.658*** (0.160)					0.846*** (0.076)	0.653*** (0.171)
<i>colony</i>						-0.350 (0.827)					-0.699 (0.592)	-0.452 (0.866)
<i>contiguity</i>						-0.755 (0.552)					-0.650 (0.521)	-0.408 (0.665)
<i>language</i>						1.611*** (0.571)					1.365** (0.589)	1.976*** (0.526)
<i>political stability</i>							-0.046*** (0.007)				-0.009 (0.007)	0.009 (0.011)
<i>government</i>								0.428 (0.326)			0.198 (0.132)	0.164 (0.106)
<i>legislation</i>									1.373** (0.667)		0.869* (0.524)	0.641 (0.521)
<i>attitude</i>										-3.273 (2.258)		
<i>N (countries)</i>	314	314	312	218	260	180	256	285	314	105	224	151
<i>pseudo R2</i>	0.169	0.633	0.168	0.370	0.181	0.876	0.350	0.239	0.177	0.280	0.862	0.876

Notes: Robust standard errors of coefficients in parenthesis. All specifications control for time-fixed effects, which are - same as the constant - not shown in the table. * $p < .1$, ** $p < .05$, *** $p < .01$

Table 8 – Robustness checks, post-2015 period (2015-2017)

Dependent variable:	(1) flows	(2) flows	(3) flows	(4) flows	(5) flows	(6) flows	(7) flows	(8) flows	(9) flows	(11) flows	(12) flows
<i>In GDP pc d</i>	-0.266 (0.254)	0.0610 (0.227)	-0.279 (0.251)	-0.295 (0.522)	-0.902 (0.563)	0.720 (0.451)	1.048*** (0.323)	-0.125 (0.314)	0.211 (0.331)	1.829*** (0.472)	1.335** (0.648)
<i>In distance</i>	-0.929** (0.452)	-2.401*** (0.539)	-0.906** (0.458)	-1.726*** (0.552)	-1.201** (0.505)	0.276 (0.705)	-1.600*** (0.356)	-1.391*** (0.349)	-1.188** (0.507)	-0.838* (0.453)	-3.733*** (0.534)
<i>In population</i>		1.112*** (0.213)				0.303 (0.261)					2.223*** (0.323)
<i>GDP growth</i>			-0.0293 (0.0865)			-0.171 (0.173)					0.0619 (0.0577)
<i>poverty</i>				-0.0627 (0.106)							
<i>trade</i>					-308.6* (162.9)	-45.77 (66.55)					32.82 (34.79)
<i>In network</i>						0.536* (0.319)				0.344** (0.160)	-0.590*** (0.191)
<i>colony</i>						-2.159* (1.140)				0.307 (0.640)	3.540*** (0.680)
<i>contiguity</i>						1.829*** (0.579)				1.188 (0.828)	0.927** (0.455)
<i>language</i>						3.936*** (0.649)				2.286*** (0.700)	3.777*** (0.644)
<i>political stability</i>							-0.0778*** (0.0156)			-0.0339*** (0.0101)	0.0649*** (0.0193)
<i>government</i>								-1.178** (0.480)		0.200 (0.245)	-0.167 (0.172)
<i>legislation</i>									3.217*** (0.826)	1.510*** (0.326)	2.274*** (0.374)
<i>N (=countries)</i>	63	63	62	47	57	55	63	56	63	54	47
<i>pseudo R2</i>	0.194	0.708	0.199	0.484	0.408	0.946	0.611	0.549	0.598	0.967	0.994

Notes: Robust standard errors of coefficients in parenthesis. Constant not shown in table. As mentioned, the factor 'attitude' was not considered for the post-2015 period, which is why specification (10) was omitted in this table. * $p < .1$, ** $p < .05$, *** $p < .01$

5 Conclusion

Motivation

The economic, political and humanitarian crisis in Venezuela of the recent years caused one of the largest exodus in the region's modern history. Previous research studied, for example, different components of the Venezuelan crisis or surveyed subsamples of migrants on their individual experiences and motives for leaving Venezuela. In addition, national statistical offices and the UN have collected data on which routes Venezuelan migrants have taken and in which countries they have arrived. So, while previous work analysed why the current Venezuelan migration flows emerged and where they were directed to, this is the first study to econometrically investigate the underlying drivers why Venezuelans migrated more to some than to other countries. Specifically, this paper examined which factors determined the choice of destination country of Venezuelan migrants from 1990 to 2017. The focus thereby lied on studying the patterns of Venezuelan migration during times of crisis (post-2015) and comparing them with the ones in times of relative stability (pre-2015).

Key results

As the empirical results suggest, Venezuelans were in both times immigrating more to destinations which had already a large network of compatriots. There are, however, some striking differences in other factors that determined Venezuelan migration. In the period from 1990 to 2015, Venezuelan migrants were generally attracted to countries with a high GDP per capita level. After 2015, however, this factor was not a significant driver of Venezuelan migration anymore. Instead, Venezuelans were then migrating disproportionately more to nearby, Spanish-speaking and – in contrast to migration before 2015 – neighbouring countries. In a nutshell, Venezuelan migrants were generally choosing destination countries with a high economic standard of living in times of relative stability and geographically closer ones in times of crisis. This core result is consistent to controlling for further social, economic and political factors which also revealed other significant determinants of Venezuelan migration (e.g. a destination countries' population size or legislation).

Policy implications

These findings serve policy makers (e.g. UN agencies, recipient countries or donor organisations) to understand the direction of migration flows from Venezuela and how these patterns are expected to evolve in case of a change in one of the analysed characteristics of a destination country. This understanding allows to allocate resources efficiently. Policy makers may, for example, want to provide support to existing migrant communities as such networks seem to be crucial in integrating future migrants. In addition, the empirical model of this paper could also be

applied to predict migration flows of future crisis in order to adequately assist probable destinations already at an early stage.

Limitations and future research

Using more recent data in future studies would allow to analyse whether or not the observed shift in Venezuelan migration since 2015 continues over several years. In addition, this paper and further macro studies treat migrants as aggregate and do not consider their heterogenous composition (e.g. in terms of gender, age, education etc.). Thus, another direction for further research would be to focus on the individual level. Based on the findings of this paper, different hypotheses could be advanced (e.g. Venezuelans migrating in times of relative stability were generally more of higher socio-economic strata than those migrating in times of crisis). They could then be tested by qualitative or quantitative micro studies.

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Appendix

A1 – Correlation of variables

Table A1 - Pairwise correlation coefficients

	<i>flows</i>	<i>ln GDP pc VEN</i>	<i>ln GDP pc d</i>	<i>ln distance</i>	<i>ln network</i>	<i>ln network pb</i>	<i>colony</i>	<i>contiguity</i>	<i>language</i>	<i>ln population</i>	<i>GDP growth</i>	<i>poverty</i>	<i>trade</i>	<i>stability</i>	<i>government</i>	<i>legislation</i>	<i>attitude</i>
<i>flows</i>	1																
<i>ln GDP pc VEN</i>	0.04	1															
<i>ln GDP pc d</i>	0.02	0.30	1														
<i>ln distance</i>	-0.07	-0.02	0.38	1													
<i>ln network</i>	0.21	0.00	0.09	-0.19	1												
<i>ln network pb</i>	0.23	0.10	0.18	-0.18	0.95	1											
<i>colony</i>	0.11	0.00	0.08	0.07	0.24	0.27	1										
<i>contiguity</i>	0.22	0.00	-0.18	-0.21	0.21	0.21	-0.03	1									
<i>language</i>	0.12	0.01	-0.38	-0.52	0.39	0.33	0.18	0.01	1								
<i>ln population</i>	0.13	0.00	-0.03	0.50	0.46	0.45	0.12	0.11	0.02	1							
<i>GDP growth</i>	-0.03	-0.11	-0.13	-0.05	-0.05	-0.06	-0.02	0.01	0.19	-0.02	1						
<i>poverty</i>	-0.04	-0.32	-0.62	-0.53	0.05	-0.04	-0.06	0.22	0.38	-0.09	0.12	1					
<i>trade</i>	-0.04	-0.02	-0.40	-0.45	0.02	-0.01	-0.05	0.32	0.19	-0.25	0.15	0.28	1				
<i>stability</i>	-0.11	-0.04	0.68	0.17	-0.16	-0.11	-0.05	-0.28	-0.35	-0.40	-0.17	-0.43	-0.18	1			
<i>government</i>	-0.07	0.03	0.17	-0.08	0.22	0.19	0.04	0.11	0.09	0.00	-0.01	0.00	0.19	0.26	1		
<i>legislation</i>	0.37	0.12	-0.01	-0.04	0.14	0.15	-0.02	0.12	0.20	0.10	-0.03	-0.06	0.00	-0.09	0.15	1	
<i>attitude</i>	-0.17	0.00	-0.33	0.34	-0.48	-0.50	-0.12	-0.20	-0.30	-0.03	0.10	0.01	-0.16	-0.28	-0.34	-0.08	1
	<i>105</i>	<i>105</i>	<i>105</i>	<i>105</i>	<i>103</i>	<i>105</i>	<i>105</i>	<i>105</i>	<i>105</i>	<i>105</i>	<i>104</i>	<i>85</i>	<i>89</i>	<i>96</i>	<i>94</i>	<i>105</i>	<i>105</i>

Notes: Number of observations displayed in italics. Pairwise correlation coefficients estimated only for countries that report data on inflows of Venezuelan migrants only (max. 396, see section 3.2)

A2 – List of variables

Table A2 - List of Variables used in the regressions

<i>flows</i>	Number of Venezuelan migrants that immigrated to a destination country. <i>Source</i> : International Organisation of Migration (IOM 2018a)
<i>GDP per capita</i>	Income per capita of Venezuela or destination countries in PPP terms at current prices. <i>Source</i> : IMF World Economic Outlook (IMF 2019b)
<i>distance</i>	Population weighed distance in kilometres between Venezuela and destination countries. <i>Source</i> : Gurevich and Herman 2018
<i>network</i> (or <i>network pb</i>)	Number of Venezuelans that lived in a destination country in 1990 (or in the period before). <i>Source</i> : International Organisation of Migration (IOM 2018a)
<i>colony</i>	0-1 dummy variable indicating if Venezuela and the destination country have a past colonial relationship. <i>Source</i> : Gurevich and Herman 2018
<i>contiguity</i>	0-1 dummy variable taking the value 1 if Venezuela and the destination country share a common border. <i>Source</i> : Gurevich and Herman 2018
<i>language</i>	0-1 dummy variable capturing if Venezuela and the destination country share a common official language. <i>Source</i> : Gurevich and Herman 2018
<i>population</i>	Total population of destination country. <i>Source</i> : World Bank (2019)
<i>GDP growth</i>	Annual real GDP growth in destination country. <i>Source</i> : IMF World Economic Outlook (IMF 2019b)
<i>poverty</i>	Share of country's population living below the poverty headcount of \$1.90 a day at international prices (in PPP terms). <i>Source</i> : World Development Indicator (World Bank 2019)
<i>trade</i>	Destination country's import of Venezuelan oil (in dollars) relative to its GDP. <i>Sources</i> : UN Comtrade Database (2019) and World Bank (2019)
<i>political stability</i>	Destination country's percentile rank in the perception of the likelihood of political instability and/or politically-motivated violence. Higher values correspond to higher levels of political stability. <i>Source</i> : WGI, Kaufmann et al. (2010)
<i>government</i>	Type of government in destination country, 1 for right-wing, 2 for centre and 3 for left-wing. <i>Source</i> : Database of Political Institutions (Cruz et al. 2018)
<i>legislation</i>	0-1 dummy variable with value 1 if destination countries had more open, tailored migration policy for Venezuelan migrants. <i>Source</i> : IOM 2018a
<i>attitude</i>	Percentage of people per destination country mentioning immigrants as group they would prefer not to have as neighbours. <i>Source</i> : World Values Survey (Inglehart et al. 2014)



A3 – Robustness check migrant networks

As mentioned in section 4, results are consistent across different definitions of migrant networks; defined either as number of Venezuelans that lived in a destination country in 1990 (variable *network*) or in the period before (variable *network pb*). In Table A1, specification (1) and (2) show the estimation results for the time from 1990 to 2015, (3) and (4) those from 2015 to 2017.

Table A3
Robustness check for main results with *network pb*

Dependent variable:	(1) flows	(2) flows	(3) flows	(4) flows
<i>In GDP pc VEN</i>	0.476 (0.863)	-1.510 (0.987)		
<i>In GDP pc d</i>	0.871*** (0.223)	0.578*** (0.195)	0.362 (0.440)	0.0341 (0.440)
<i>In distance</i>	0.229 (0.286)	0.262 (0.258)	1.284** (0.533)	0.890** (0.438)
<i>In network</i>	1.024*** (0.071)		0.765*** (0.243)	
<i>In network pb</i>		0.957*** (0.056)		0.752*** (0.156)
<i>colony</i>	-0.860 (0.793)	-0.879 (0.702)	-3.064*** (1.045)	-2.658*** (0.769)
<i>contiguity</i>	-0.852** (0.382)	-0.640* (0.372)	2.653*** (0.608)	2.704*** (0.723)
<i>language</i>	1.196* (0.726)	1.095* (0.626)	3.855*** (0.930)	3.276*** (0.887)
<i>N</i>	314	314	63	63
<i>Countries</i>	63	63	63	63
<i>pseudo R2</i>	0.842	0.844	0.929	0.935

Notes: Robust standard errors of coefficients in parenthesis. All specifications control for time-fixed effects, which are - same as the constant - not shown in the table.

* $p < .1$, ** $p < .05$, *** $p < .01$