MAGYC

Migration Governance and Asylum Crises

Influence of Long-Term Demographic Trends on Migration Dynamics

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MAGYC: The MAGYC (**M**igr**A**tion **G**overnance and As**Y**lum **C**rises) project seeks to assess how migration governance has responded to the recent "refugee crises" and has since been influenced by it, and how crises at large shape policy responses to migration. This four-year research project (2018–2022) brings together twelve international partners: the Hugo Observatory from the University of Liège (Coordinator), Sciences Po, the University of Economics in Bratislava, the GIGA institute of Global and Area Studies, Lund University, the IDMC, SOAS University of London, the University of Milan, the Lebanese American University, the University of Macedonia, Sabanci University, IfPO/CNRS.

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MAGYC WORKING PAPER

ABSTRACT

This deliverable aims to lay out the impact of demographic drivers on migratory movements, and in particular on critical increases in flows of migration. To do so, this working paper first quantifies crisis in terms of numbers of rapid increases of outflows from countries of origin for a time period of 1960-2015. Having laid out the specific operationalizations of the independent variables that are proxies of demographic drivers and the control variables, it presents the flows and crisis level flows of migration cross sectionally and across time. Having considered the crisis from the perspective of countries of origin, it then incorporates the recipient countries via exploring the main corridors with the help of dyadic data, which takes relationality of the country pairs into consideration. The results contribute to the discussion on the role of urbanization, labor market characteristics and human development indicators in important ways. Consistently, many demographic drivers showed statistically significant impact especially through being pull factors in destination countries. The results further underline the value added of this crisis approach to the conventinal flow conceptualization and directions for further research.

Introduction:

This workpackage of the MAGYC aims to quantify the concept of crisis migration and explores its economic, demographic and environmental drivers in an attempt to then predict future crisis based on maximalist and minimalist scenarios. D.1.1. of this workpackage has presented a thorough debate of the ethical and securitized meanings attached to this concept and positioned itself critically vis a vis 'crisis' in quantifying migratory flows. In doing this, the importance of having an objective criteria across time and space has been underlined as the necessary condition for labeling a given flow a crisis. As a result, in addition to all flows of immigration, this study focuses on large migrations taken in relative terms, large enough for the origin country relative to their populations and historical trends and defines "crisis migration" as such. Based on this definition, the earlier deliverable, D.1.3, of this workpackage explored the long term trends of crisis and estimated the socioeconomic determinants of crisis level migratory flows. As a follow up to the previous deliverables, the main goal of this working paper is assessing the demographic determinants of this mobility across time and space aroung the globe.

The current working paper contributes to the existing literature in a multitude of ways. First, it expands the temporal and spacial dimension of the analysis by exploring the role of demographic drivers on migration for a time period of 1960 to 2015 with no assumptions on the potential destination countries. In other words, all countries in the world are analyzed as both potentially sending and receiving immigrants. Furthermore, it investigates the role of demographic variables on all migratory flows as well as those that are critically high, or as defined in D.1.1. as crisis level flows. This provides avenues to compare the previous findings in the literature on all kinds of migratory flows. Finally, as the dyadic analysis section will further illustrate, as opposed to considering only the characteristics of destination or origin countries, this estimation approach takes the same push and pull factors in both sending and receiving countries, thereby fully utilizing the relational dimension of country dyad.

In the remainder of this working paper, the correlations between the demographic characteristics and migratory movements will be descriptively investigated across different time frames for available data resources. This is to illustrate the time effects as well as to account for issues of missing data. Consequently, the first two of the three step estimation approach identified in the methodological paper (D.1.1) will be adopted. For the first step, the goal is to estimate both the long and the short term determinants of crisis outflows, with a focus on the demographic indicators in the origin countries in relation to the migratory out flow data drived from stock data by Abel (2019) for a time period of 1960-2015. This will be followed by an investigation of migration corridors using dyadic data to understand the dynamics of movement vis-à-vis the destination of peak flows. Finally, the concluding remarks will reflect on the value added of this approach to the conventinal flow conceptualization and directions for future research.

THE ROLE OF DEMOGRAPHIC FACTORS AS DRIVERS OF MIGRATION

There is a rich discussion in the literature with regards to the the relative role of various drivers, push and pull factors leading to migration. Lately acknowledged as a multicausal phenomena, the debate on determinants of migratory flows has been heavily shaped by the role of different socio-economic factors which have been discussed and empirically examined in D.1.3. Theoretically, Fertig and Schmidt (2000) argues that research on the driving forces of international migration emphasized economic variables (e.g., income and employment) at the expense of demographic factors such as age structure, health, and life expectancy. This neglect may not only create poor model specifications but also may lead to inflated coefficients for socioeconomic variables.

With the Deliverable 1.3, the role of economic drivers such as development, income, poverty, and inequality were explored deeply, controlling for the effect of basic demographic and political control variables. Nevertheless, exploring the impact of different demgraphic factors beyond control variables deem great importance for better model specifications which would then yield to better indicators of different scenarios. In their construction of five demographic scenarios built with the participation of 550 population experts via an online survey, Samir and Lutz (2014) illustrate the important role played by age, sex, and education in projecting migration, the ultimate goal of D.1.2. At this stage, the demographic variables will be expanded upon by controlling for the impact of economic variables found to have a statistical significant effect in D 1.3 as control variables.

De Haas et al. (2019) point out to two lines of variables so far explored in relation to mobility, 'population dynamics' and 'family size and structure'. In their extensive meta analysis of different drivers, Czaika and Reinprecht (2020) show that family size and structure make up over two thirds of all demographic drivers identified by 35 empirical studies and that demographic drivers are mostly studied quantitatively at the micro level involving surveys. Regarding the demographic indicators found to have a statistically significant effect on mobility, they point out to rates of urbanization, previous flows of in and out migration, the size and growth of the population, the age structure as well as the fertility and mortality as indicators of population dynamics (Shutte et al. 2020). Regarding these population dynamics, not surpisingly, origin countries with higher populations are also countries with higher out-migration (DeWaard et al. 2012; Kim and Cohen 2010). Another consistent finding of the literature is related to population dynamics, in particular the role of the high fertility rates (Migali et al. 2018) and the size of the young population (due to their high potential gains) in resulting in higher migration (Bell et al. 2015; Hatton and Williamson 2005; Mayda 2010; Péridy 2006). One could also include age structure especially in related to the young age cohorts, gender and educational attainment as additional demographic forces that can inform migration decisions (Dao et al. 2021; Kuhnt 2019; Migali et al 2018; Bell et al. 2015; Stark and Levhari, 1982). The role of age structure, which also exerts its influence through population growth and fertility rates, is not only a function of a supply of young people from developing countries with limited opportunity structures, but also interacts with high demand for labor stemming from the aging populations in developed countries. Furthermore, hosehold size and previous or potential male migrants (as opposed to female) are found to be important demographic drivers. According to some studies, consistent with the theory on new economics of migration, household size is associated with internal and external migration of family members to sometimes different rural or urban areas and into various economic sectors to diversify risk and maximize household income (Gubhaju and De Jong 2009; VanWey 2003).

Studies exploring the impact of demographic factors also refer to the living standards as a variable with potential overlaps with socioeconomic factors. In particular, infant mortality rate and life expectancy at birth are demographic indices of quality of life for whole populations (Reidpath and Allotey, 2003). Hence, differences between two countries standards of living are also examined as a driver of migration (Kim and Cohen, 2010). Furthermore, education is another important driver with education opportunities for oneself or one's children in receiving countries and lack thereof in sending countries also drive migration internationally (Timmerman et al. 2016).

As argued and illustrated by De Haas et al. (2019), human development, similar to economic development, tends to correlate with increasing emigration, due to its enabling role to the access to resources and increase in the awareness of economic opportunities and lifestyles elsewhere. Finally, Bell et al. (2015) demonstrate that the more highly urbanized the country, the higher female participation in the labor force, life expectancy, and education, and hence the greater the intensity of migration is. Expanding into the role of urbanization, individuals residing in urban areas are more likely to migrate, which has also been empirically supported by Kim and Cohen (2010) in their exploration of non economic drivers of migration. This could be due to their easier access to information on methods of migration Neumayer (2005) or their existing job skills which may increase their employability in a more developed country. With a panel analysis of EU and ENC countries, Royuela (2015) shows that urbanization is not only a push factor in the countries of origin but can also be a pull factor in a destination country, as large and growing urban areas indicate better job opportunities and higher salaries.Based on the aforementioned findings in the literature regarding the role of demographic factors in driving migration, proxies for these theoretical constructs will be investigated within existing data sources.

DATA AND METHODOLOGY

Measurement of the Demographic Determinants

The belowmentioned descriptions relate to the basic measurement of the demographic relationships outlined above and will be recoded for country level and dyadic data differently according to the various stages of estimation. Deliverable 1.1 illustrated the theoretical literature behind these variables and how they have been planned to be measured. Due to some restrictions on the data and high missing values some of these needed to be slightly altered. The following section will summarize the measurement of these different set of variables that are included in the final models.

In line with the aforesaid findings in the literature, country level data on fertility rates, population growth, population sizes, as well as rates of enrollment in secondary schools across the years have been compiled for the period from 1960 to 2015 from World Development Indicators[1]. Unfortunately, data on some of these indicators are not available for the entire time period under investigation and a considerable part of the demographic variables are only available as of 1990. To account for this, at the modeling stage, separate estimations were made for demographic drivers that are available for the entire time period first, so as to not lose the information from the earlier time periods and these will be replicated with the addition of demographic

[1] https://databank.worldbank.org/source/world-development-indicators

variables only available for the later periods.

With regards to the measurements and data sources of these demographic drivers, the majority are taken from the World Development Indicators and coded replicating common ways used by aforesaid literature. In particular, basic demographic indicators such as population statistics and their breakdown based on gender and age are acquired from the UN Population statistics. The source for the data on labor market participation and employment is the International Labor Organization ILOSTAT. Urbanization, defined as the percentage of urban population, constructed by dividing the urban population in the given year by the total population of that year and multiplying by 100 is also obtained from UN Population Statistics.

A multidimensional measurement for human capital is the United Nations developed Human Development Index[2], which is composed of several principal areas of interest: literact, mean years of schooling, expected years of schooling, life expectancy at birth and gross national income per capita. Nevertheless, it is only available since 1990, albeit with interrupted waves of measurement and the income dimension is likely to overlap with the separate income measures to be used in the estimation. Due to these restrictions, to operationalize human development, data on life expectancy, infant mortality and education measurements are collected separately. To complement these measures with a nuanced measure of educational attainment in each country, the Barro and Lee (2013) estimates were utilized. These estimates measure average years of education completed by different age groups throughforward and backward extrapolation of the census/survey observations on attainment. The estimation procedure extrapolates the census/survey observations on attainment by 5-year age groups at five-year intervals fill in missing observations with an appropriate time lag. With the assumption that an individual's educational attainment remains unchanged from age 25 to 64 and that mortality is uniform across all individuals, regardless

[2] http://hdr.undp.org/en/content/human-development-index-hdi

of educational attainment, yielding to a data for years of eduction for each country between the years 1950 and 2010[3]. A summary of the descriptions and sources or demographic data ara provided in Table 1 below.

Table 1: Variable descriptions for Demographic Drivers

Variable	**Measurement**	**Source**
Fertility rate	The number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year in each country	UN Population Division, World Population Prospects: 2019 Revision
Population Growth	Annual population growth rate for year t is the exponential rate of growth of midyear population from year t-1 to t, expressed as a percentage . Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship.	UN Population Division. Census reports and other statistical publications from national statistical offices, UN Statistical Division. Population and Vital Statistics Reprot (various years), U.S. Census Bureau: International Database
Young Cohort	Population below the age 15	UN Population Division
Youth Employment	Proportion of a country's population ages 15-24 that is employed. Employment is defined as persons of working age who, during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit, whether at work during the reference period.	International Labor Organization, ILOSTAT Database
Labor force Participation	The proportion of the population ages 15 and older that is economically active: all people who supply labor for the production of goods and services during a	International Labor Organization, ILOSTAT Database

[3] Due to some slight differences across the cross countries compulsory education years, cross comparison at especially higher values of the years of educational attainment may be misleading. Nevertheless, this should not create much inefficiency in modeling as the large standard deviations in the world data is expected to yield to sufficient variation between sending and receiving countries.

	specified period	
Educational Attainment	Average Years of Schooling Attained	Barro and Lee Dataset[4]
Life Expectancy	The number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life	UN Population Division
Infant mortality rate	Number of Infants dying before reaching one year of age, per 1,000 live births in a given year	UN Inter-agency Group for Child Mortality Estimation
Urbanization	People living in urban areas as defined by national statistical offices.	UN Population Division
Youth Dependency	The population ages 0-15 divided by the population ages 16-64	Worlbank Estimates on UN Population Division Data

As the migration flow data is available for five year intervals, the aforesaid data on demographic indicators are also averaged for the five years overlapping with the flows variable.

Measurement of the Economic Drivers

There is a range of economic drivers that relate to both origin and destination factors being important drivers of migration. Labor market and employment conditions (Migali et al. 2018) along with wages (Beine et al. 2014), levels of economic development as measured by GDP growth rates, per capita income (Bell et al 2015) and fluctuations are influential in individuals' migration decisions at different rates and mostly in non-linear patterns. Studies repeatedly underlined the inverse U-shaped effect of economic development on migration decisions (Dao et al 2018, De Haas et al. 2019). In particular, for low income countries, development is shown to increase migration in the short run until the purchasing parity adjusted per income GDP rates of 7,000- 8,000

[4] For more information about the methodology http://www.barrolee.com/

USD, after which migration rates start to decrease (Carling and Talleraas 2016). While with mixed evidence, poverty and inequality are also concluded to be important drivers of migratory flows.

In order to measure economic development levels, GDP per capita data from World Development Indicators has been collected. GDP per capita is gross domestic product divided by midyear population and GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars. Unfortunately, purchasing povery parity adjusted versions of this data is only available since 1995, hence simple per capita measurement was preferred due to data availability issues. In order to account for the potential non-linearity regarding this driver, a GDP per capita squared variable is created, whose statistical significance would attest to that effect.

Poverty and inequality are measured by the share of the lowest 10 percent's share of income or consumption and ıt is the share that accrues to subgroups of population indicated by deciles or quintiles as well as labor force participation and rates of unemployment. These data are compiled from the Worldbank database on Poverty and Equity and are based on primary household survey data obtained from government statistical agencies and World Bank country departments[5]. Data for high-income economies are from the Luxembourg Income Study database.

Dependent Variables and Estimation Approach:

As demonstrated in the previous working papers (D1.1 and D1.3), Abel's estimations of flow data derivied from bilateral flow tables estimates from sequential bilateral stock data via birthplace specific flow tables (Abel 2017:

[5] For more information on the methodology http://iresearch.worldbank.org/PovcalNet/index.htm

817) will be used for the dependent variables of this study. This dataset is particularly fit to the purposes of this deliverable due to its large time span, starting with years 1960-65, and its geographical bradth as it covers global flows. This allows for operationalization of the main assumption and one of the important contributions of this study, namely developing countries being both origins and destinations for migratory flows.

These flow estimations utilize the changes over time in bilateral migrant stock sizes for estimations of flows. Abel's log linear models, a form of Poisson regression model used to predict or explain count variables, in this case number of flows, where each of the parameter values are obtained using the known marginal sums and diagonal cells in stock tables with iterative proportional fitting. These parameters for Abel (2017)'s method of imputation along with his use of three versions of UN stock data along with Özden et al.(2011)'s World Bank data enable a sensitive and comprehensive approach both geographically and temporally in estimating the missing values/gaps of flows. At a two-stage estimation, first flows over 10 year periods with alternative combinations of gender, demographic and stock data are predicted followed by an estimation of 5 year period flows between 1960 and 2015.

To construct the dependent variables of this study, Abel's flow data is first accumulated for each sending country based on outflows in gross numbers from an origin country, by summing up flows to all destinations from a given origin country. Two different dependent variables are constructed with this data, with the first one capturing all flows from the country (all flows one to the other for the dyadic version) and and binary crisis/critical level migration variable, which is discussed thoroughly in the following section.

Regarding the crisis level migration, conceptually, it is defined as ' very high flows from a country which could potentially cause a governance crisis in the origin as well as the recipient country as a result of their critically high number'. As it has been argued in D.1.3, this critical size is either as a high portion of the origin country population (determined as five percent), or as a nominally high number to create a sizable impact on the recipient country.[6] Finally, in order not to exclude similarly sized flows from countries with a high population, their flows were included even though this number was below the 5 percent of their large populations as in the cases of China and India. The flows to be included were determined based on the mean rate of the 5 percent group, which was about 200 thousand people per give year intervals . All outflows from countries exceeding this number were included in the crisis variable as well.

In terms of estimation, following the standard diagnostics such as multi collinearity, hetroscedascity and unit roots, as well as hausmann tests for the choice of random or fixed effects, the model specification is determined as fixed effects models with robust standard error, clustered at the country level, that allow for intra-group correlation. The first step aims to reveal the origin specific dynamics with cross sectional panel models estimated for all three dependent variables. The second relies on the bilateral flows as the dependent variable to also focus on recipient countries. This time, Abel's flow data will be utilized as consisting of country dyads. This is important in creating a base gravity model to identify the main destinations of the flows which are outlined in detail in the previous section.

Based on the results of the estimates from the previous model, peak predictions of migratory flows will be matched with medium and high outflow countries. As a contribution to the literature, a new dataset will then be compiled with dyadic data, enabling us to identify where this migration influx is likely to be destined, which countries are likely to be hit by these crisis level flows and if certain countries would be easier destinations due to factors such as colonial history, network effects, trade relations, financial flows, political affinity or other

[6] As countries with very small populations could also end up in this new variable which would not really have a 'crisis' effect, flows below 100 thousand people were excluded from each five year interval, which were a very small share of the 5 % group (i.e for one of the highest flow years, 1995-2000, these constituted 0,036 percent of the group total of over 11 million migrants).

cultural ties. This would also have implications on the potentialrelative impact of these crisis flows on different destination countries.

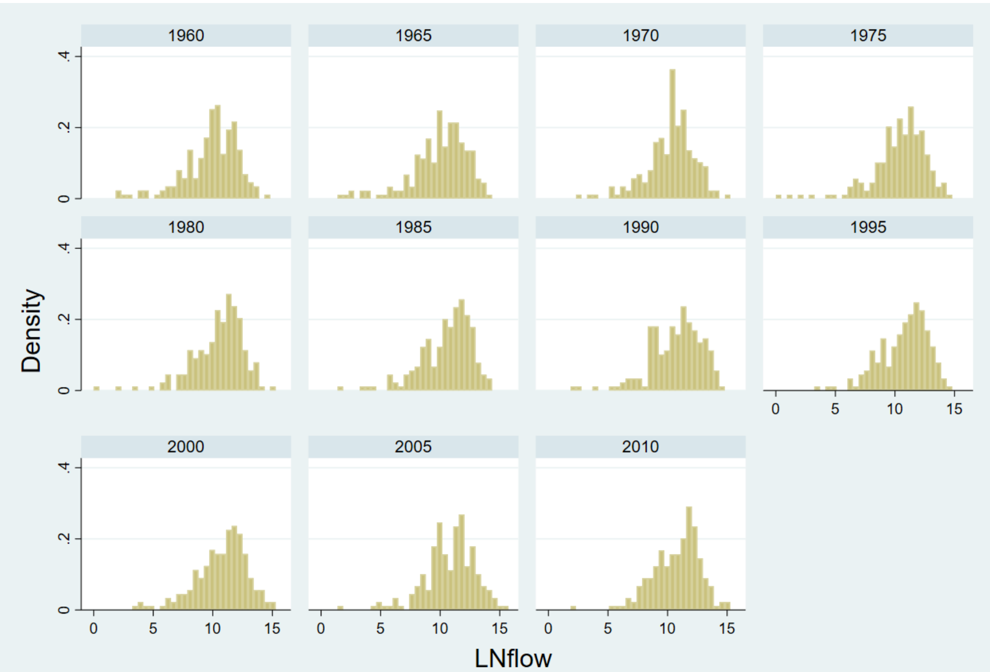
DESCRIPTIVE STATISTICS:

Before estimating crisis flows, a descriptive investigation of the dependent variables and explanatory demographic variables will be provided as a first step into understanding the data to explore the distribution of the variables, and the temporal dimension. There is reason to expect time effects, such as differences in relationships for different snapshots in time. These could be due to global economic trends, leading to stronger links through multiplied channels among the states or global structural changes, and migration governance.

Figure 1 illustrates the distribution of migratory flows derived from stock data across time. As described earlier, this data is derived from the migrant stock data countries hold across 5 years, hence available for five year slots. This data indicates the logarithm of all flows from countries of origin for a given year, not corrected for migrant arrivals. As seen, overall, the data is normally distributed making it fit for a panel estimation. For the years 1990-5, the distribution is distribution is somewhat dispersed, indicating higher out-migration for some countries for these years stemming from various factors. This period also illustrates, both in terms of diversity of origin and magnitude, the influx of Syrians after 2015 is not unprecedented. In the 1990s, initially, the number of asylum seekers soared due to the influx of Bosnians and Croats fleeing the war in Yugoslavia but they were soon numerically superseded by refugees escaping war in the Middle East, notably Iraq, Iran, and Afghanistan as well as Somalia. Therefore this period is expected to show itself as a significant year dummy in them models estimated. For the years 2005-2010 and especially for 2010-2015, the mean and mode has fully shifted to the right, indicating higher numbers of outflows from many countries on average for these years. This is no doubt the source of the 'refugee crisis' discourse with the very high number of intenational forced migration displacing over 5.6 million people internationally[7], due to Syrian civil war. Finally, it is evident that overall the number of migratory outflows have increased over time but as shown repeatedly in the literature its ratio to the world population remained rather stable. For the entire time period the countries which have experienced the highest number of out migration are India, Bangladesh, Mexico and China, followed by Pakistan, Russia, Afghanistan, Great Britain, and Philiphines and many OECD countries such as Germany, France, USA are also in this list as high number of their citizens chose to live elsewhere[8].

Due to Abel's (2017) estimation technique, there are rather very low number of missing values for this variable also evident in the figures especially for earlier years.

Figure 1: Distribution of migration out-flows across time

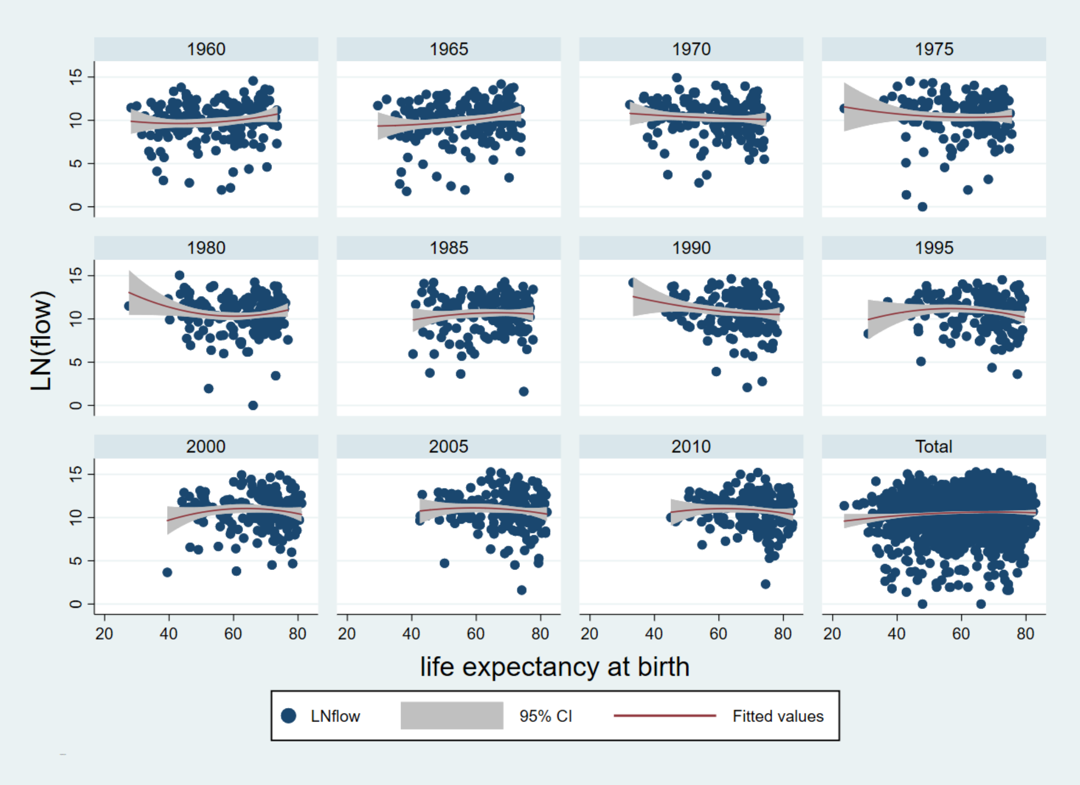


[7] UNHCR data https://www.unhcr.org/syria-emergency.html#:~:text=Over%205.6%20million%20people%20have,continues%2C%20hope%20is%20fading%20fast.

[8] A detailed comparison of these are provided in D 1.3

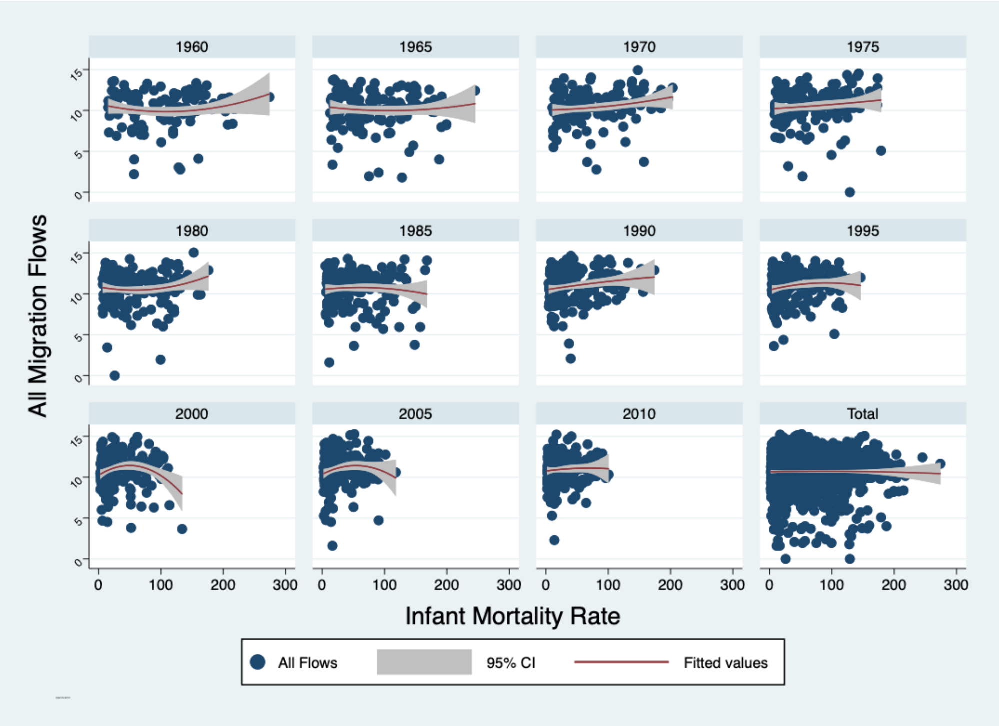
When the relationships between the flow variables and different explanatory variables at the country of origin are considered, a correlational plotting across the years is useful to see the varying impact of drivers across time. The following set of graphs in Figure 2 illustrates these relationships for various demographic variables for the available 5 year time slots. As for the first figure, consistent with the expectation in the literature countries with higher population are also the ones with high outflows and this is quite consistent across time. The relationship is less clear when it comes to life expectancy. As an important indicator of human development, a negative or a non-linear relationship is to be expected with outflows, however, as illustrated, the relationship is inconsistent across years. This is also due to global trends with improved living standards and healthcare, resulting in higher levels of life expectancy (over the age of 40) for all countries in the sampe. This changing dynamic across the years may result in a weak or no relationship in the statistical models, therefore potential time differences should be considered.

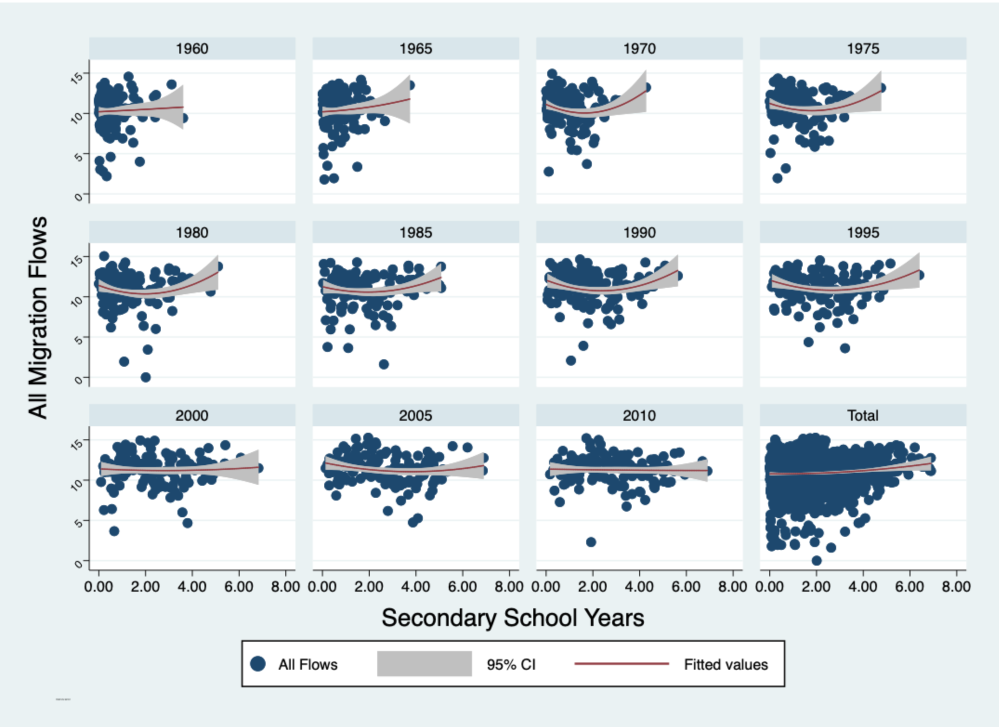
Figure 2: Migration flows vs Population and life expectancy



When other demographic indicators of human development considered similar developmental trends can be observed. As indicated in Figure 3, figures for both infant mortality and educational attainment improve significantly for all countries in the sample across time. Based on the figure, there does not seem to be a very consistent and stable correlation between migratory flows and infant mortality. Still, the inverse U shaped relationship between economic development and migration seems to also reflect on infant mortality and migration for the time period of 2000-2010. Regarding the impact of education, the years spend in secondary education seem slightly positively correlated with out-migration, yet the line for fitted values gets flatter in time indicating less impact for the later years.

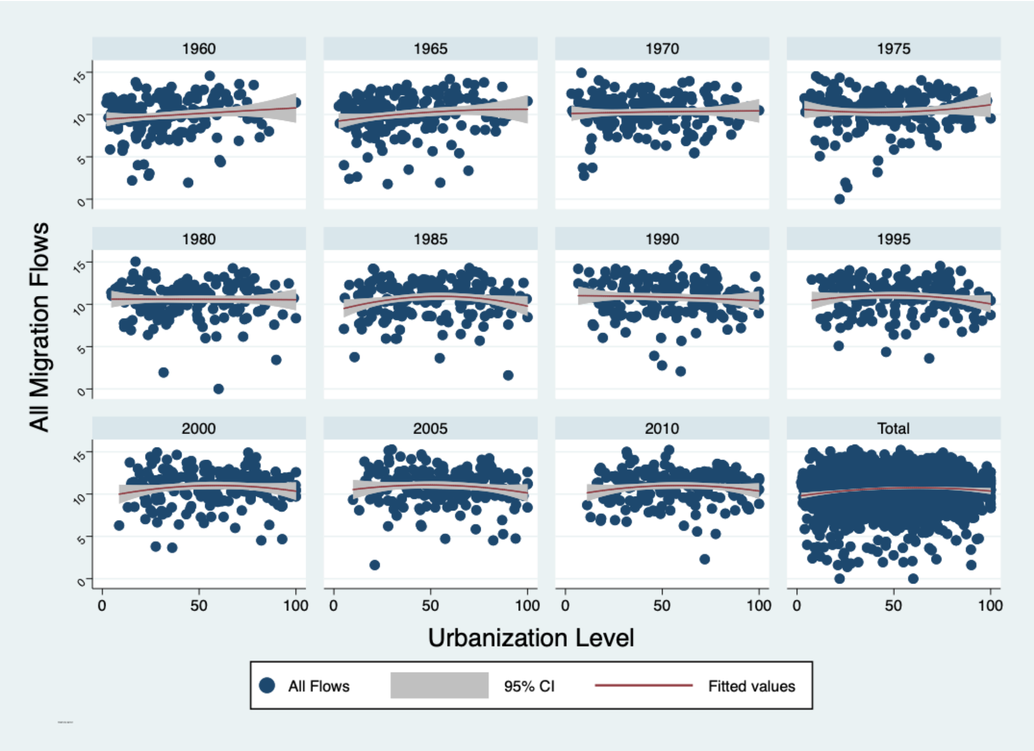
Figure 3: Migratory Flows vs. Infant Mortality and Education





Finally, the relation between urbanization and migration is plotted in Figure 4. Despite the trend for more organization over time, the relationship stays similar across time indicating a slight positive correlation between levels of urbanization and flows. Still, urbanization levels in an origin and destination may play out differently, an issue the dyadic models will explore in greater detail.

Figure 4: Urbanization Levels and Migratory Flows



The descriptive discussion in this part has aimed at addressing the time effects, global trends, and missing data. Different measurements of migratory flows has first been explored across the years and countries, and then compared to the trends in different structural drivers. Having shown the potential for correlational relationships, the next section tests them through multivariate models in a rigorous way.

ESTIMATIONS OF MIGRATORY FLOWS AND 'CRISIS' LEVEL FLOWS

In order to statistically test the role of the demographic drivers on migration flows and crisis level flows different fixed effects time series models are estimated with robust standard errors are clustered at the country level, that allow for intra-group correlation. The first set of these models focuses on flows from the origin countries with the aforesaid two dependent variables, namely flows and crisis flows. Due to the missing values in some of the independent variables, first a base model is estimated with the better available ones, and others are added as different models. Nevertheless, it is the only way to explore the impact of different structural drivers. For ease in presentation, each dependent variable two models are estimated, with the first one exploring labor market dimension of demographic factors and the second one incorporating all the remaining ones. Following the origin country models, estimations based on the dyadic dataset were peformed with the usual controls of the gravity models such as distance between the countries in the dyad, colonial links, common languages etc. The equations for these models are as follows:

EQUATION for FLOW MODELS (both flow & crisis):

$$Y_{it} = \alpha + \beta X_{it} + D_t + u_i + \varepsilon_{it}$$

where:

Y_{it}= dependent variable (LNflow or Crisis_Dummy)

α = constant

X_{it} = vector of (the model specific set) explanatory variables

β = coefficients vector

D_t = year dummies

ε_{it}= error term

EQUATION for DYAD MODELS (both flow & crisis):

$$Y_{ijt} = \alpha + \beta X_{ijt} + D_t + u_{ij} + \varepsilon_{ijt}$$

where:

Y_{ijt}= dependent variable (LNflow or Crisis_Dummy)

α = constant

X_{ijt} = vector of (the model specific set) explanatory variables

β = coefficients vector

D_t = year dummies

ε_{it}= error term

Origin Country Focused Models

Table 2 below illustrates the role of the first set of demographic drivers on migratory flows from origin countries. No multicollinearity is detected among the variables. Still for most estimations, variables with many missing values were added one by one so as to avoid degress of freedom issues. As expected, population size has a statistically significant positive impact on flows, as well as population growth. In terms of the main control variable for economic drivers, GDP's non linear effect as tapped by the squared per capita variable is statistically signigicant for some of the models in an expected direction. Urbanization and education also seem to have statistically significant impact on outflows from countries of origin. In particular, countries with higher urbanization rates are also the ones that give high migration, supporting the arguments regarding the continuious nature of mobility which starts with rural to urban mobiliy and continues with international migration. Similarly, countries with more secondary school education averages are also ones with highest out-flows. Considering the impact of some labor market dynamics are controlled for in these models, destination country factors may play a larger role on this finding. There could be different explanations for this as explored in case studies on the topic. This could be explained with lack of availability of employment opportunities for these educated populations at home or education making them more able to compete for jobs elsewhere. Some more light on the issue will be shed with dyadic models exploring some of these separate dynamics. None of the other variables in the estimation have a statistically significant impact in any direction.

When it comes to the temporal effects, as also illustrated in the descriptive section, the years 1990-95, 1995-2000, and 2010-2015 exert a separate effect in some models, when controlling for the drivers and as compared to the base year/reference category, -here 1960-65 for models 1 through 3, 1975-80 for model 4, and 1990-95 for models 5 through 7. The similarity of the size of the statistically significant coefficients of 1990 and 1995 also illustrate that there is not a visible difference between them. As elaborated in the descriptive part of this paper, this was expected in relation to these high influx years for the first two of these time slots, indicating there remains sill some mechanisms yet to be explored about these time periods. When the final five year period 2010-to 2015 is considered, as the point of comparison is 1990, another high migration year, the coefficient is negative, indicating there is a negative impact of this time period on flows as compared to 1990 and controlling for other variables. This actually reiterates the high level of flows in 1990, which have not really been considered as 'crisis' by policy makers, as also argued by Lucassen (2018) and may also have. Furthermore, with the inclusion of the labor market mechanisms into the picture, the declining migration from traditional corridors such as Mexico-US could be the reason for the negative statistically significant coefficient for 2010 or some of the Syrian migration into Europe may not yet registered by that time. Finally, as to the overall explanatory powers of the estimations, the model fits as illustrated by R-Squared valueas are above .38 and are comparable across the models.

Table 2: Demographic drivers W/Labor market of migratory flows

VARIABLES	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7
LnPopulation	0.6580***	0.6353***	0.6336***	0.6663***	0.7001***	0.7057***	0.7038***
	(0.0358)	(0.0376)	(0.0506)	(0.0490)	(0.0450)	(0.0448)	(0.0445)
Landlocked	0.0631	0.1142	-0.0504	0.2171	-0.0135	-0.0074	-0.0010
	(0.1740)	(0.1769)	(0.1960)	(0.2110)	(0.1865)	(0.1869)	(0.1875)
LnGDPpc	0.5617	0.3472	0.6847	1.0953	0.3203	-0.0305	0.0352
	(0.4235)	(0.4604)	(0.4445)	(0.7196)	(0.6726)	(0.7015)	(0.6794)
LnGDPpcSquared	-0.0391	-0.0344	-0.0515*	-0.0701*	-0.0249	-0.0050	-0.0086
	(0.0250)	(0.0263)	(0.0265)	(0.0414)	(0.0386)	(0.0404)	(0.0392)
Urbanization		0.0111**					
		(0.0049)					
SecondSchoolYears			0.1369**				
			(0.0641)				
Incomeshare L10%				-0.0313			
				(0.0795)			
Labor Force Part					-0.0005		
					(0.0089)		
Youth Employment						-0.0074	
						(0.0055)	
Y Female Labor FP							-0.0076
							(0.0058)
1965.period	-0.0537	-0.0581	-0.0990				
	(0.1815)	(0.1817)	(0.2017)				
1970.period	0.2347	0.2179	0.1647				
	(0.2032)	(0.2024)	(0.2211)				
1975.period	0.2851	0.2556	0.2543				
	(0.2326)	(0.2306)	(0.2549)				
1980.period	0.2019	0.1533	0.0500	0.2352			
	(0.2380)	(0.2345)	(0.2691)	(0.4961)			
1985.period	0.1499	0.0838	-0.0458	0.0080			
	(0.2308)	(0.2294)	(0.2691)	(0.4807)			
1990.period	0.4052*	0.3227	0.2817	0.0429			
	(0.2083)	(0.2082)	(0.2411)	(0.5011)			
1995.period	0.4148**	0.3259	0.2682	0.4058	-0.0352	-0.0503	-0.0494
	(0.2051)	(0.2086)	(0.2394)	(0.4964)	(0.1307)	(0.1326)	(0.1315)
2000.period	0.2995	0.2086	0.2781	0.3958	-0.1572	-0.1830	-0.1856
	(0.2051)	(0.2044)	(0.2532)	(0.4808)	(0.1619)	(0.1649)	(0.1639)
2005.period	0.3207	0.2354	0.3225	0.3566	-0.1344	-0.1616	-0.1709
	(0.2006)	(0.2007)	(0.2402)	(0.4846)	(0.1473)	(0.1535)	(0.1557)
2010.period	0.2470	0.1583	0.1374	0.2985	-0.2306	-0.2720*	-0.2798*
	(0.2024)	(0.2033)	(0.2685)	(0.4873)	(0.1527)	(0.1569)	(0.1572)
Constant	-1.6168	-0.3323	-1.4685	-3.9839	-0.7783	0.9266	0.7328
	(1.9682)	(2.1569)	(2.1253)	(3.3687)	(3.3128)	(3.2078)	(3.1498)
Observations	1,545	1,545	1,268	598	815	815	815
R-squared	0.389	0.392	0.345	0.369	0.424	0.425	0.426
Number of ISOnum	178	178	139	151	171	171	171

Robust standard errors, adjusted for country clusters, in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In addition to these first set of drivers, other demographic factors such as such population growth or human development indicatiors as mortality and life expectancy also be important drivers of migration. To account for their effect, while also having models with an acceptable sample size across the years, they are estimated separately. As shown, population growth has a statistically significant negative impact on migration outflows with countries with higher population growth being the ones with less outflows, and this relation is robust even when controlling for all other drivers. It may seem counterintutitive at first but in fact may be related to cultural or economic characteristics of these countries. Those countries with highest population growth rates are also the ones with the least development and individual's lack of resources to migrate in these countries may account for this finding.

On the other hand, when controlled for all other demographic factors, countries with larger cohorts of youth (people of ages 0-15) tend to have higher migratory outflows and this effect is statistically significant as expected. Finally, life expextancy has the opposite effect than the one expected in that life expectancy in the origin has a positive effect on flows. This could be because most countries have reached similar high life expectancies during this period, not providing us with the desired variation, but it still deems further investigation.

When it comes to the temporal effects, the decade of 90's continue to have a separate positive effect on flows for the models were the point of reference is 1960, yet, the separate effect of the 2010-2015 period has disappeared. This could imply, these particular set of variables do a better job in explaining the variation added by migrations in this period, as compared to the previous model. When it comes to model fits, all models explain above 38 percent of the variation in the dependent variable. The last model incorporating all potential demographic drivers yields to a better model fit but unfortunately, the shrinking numbers of observations due to the missing values in the explanatory variables leads to a much smaller sample size for this estimation. As a result it is not entirely possible to pinpoint one model in being better at estimating the flows, neither it is possible to make sure about the reliability of the coefficient estimates and their levels of significance for the same reason.

Table 3: All demographic drivers of all migratory flows

VARIABLES	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7
LnPopulation	0.6363***	0.6488***	0.6477***	0.6557***	0.6592***	0.6574***	0.7471***
	(0.0368)	(0.0368)	(0.0358)	(0.0360)	(0.0375)	(0.0375)	(0.0586)
Landlocked	-0.0495	0.0550	0.1300	0.0774	0.0645	0.0625	0.0557
	(0.1703)	(0.1736)	(0.1669)	(0.1751)	(0.1744)	(0.1742)	(0.2035)
LnGDPpc	-0.2429	0.3610	0.1778	0.3357	0.5635	0.5582	1.0314
	(0.4612)	(0.4711)	(0.4844)	(0.5326)	(0.4239)	(0.4289)	(1.0808)
LnGDPpcSquared	0.0040	-0.0303	-0.0245	-0.0279	-0.0387	-0.0392	-0.0475
	(0.0281)	(0.0269)	(0.0271)	(0.0300)	(0.0250)	(0.0250)	(0.0598)
Population Growth	-0.3814***						-1.1331***
	(0.0923)						(0.2080)
Fertility Rate		-0.0639					0.5832**
		(0.0565)					(0.2725)
Life Expectancy			0.0290**				0.1014***
			(0.0123)				(0.0253)
Mortality				-0.0022			0.0109
				(0.0027)			(0.0097)
Youth Rate					0.0016		0.2694***
					(0.0116)		(0.0784)
Youth Pop Depend						-0.0003	-0.0700
						(0.0048)	(0.0432)
Urbanization							-0.0077
							(0.0076)
SecondSchooYrs							0.1778**
							(0.0800)
Labor Force P							0.0255
							(0.0158)
Youth Employment							-0.0064
							(0.0157)
Female Labor F P							-0.0046
							(0.0183)
1965.period	-0.0676	-0.0557	-0.0767	-0.0086	-0.0553	-0.0527	
	(0.1740)	(0.1832)	(0.1839)	(0.1902)	(0.1808)	(0.1810)	
1970.period	0.2109	0.2239	0.1725	0.1992	0.2323	0.2359	
	(0.1977)	(0.2045)	(0.1953)	(0.2189)	(0.2022)	(0.2021)	
1975.period	0.2611	0.2579	0.1745	0.2353	0.2831	0.2860	
	(0.2260)	(0.2322)	(0.2179)	(0.2411)	(0.2323)	(0.2324)	
1980.period	0.1691	0.1598	0.0331	0.1477	0.2015	0.2019	
	(0.2343)	(0.2356)	(0.2283)	(0.2576)	(0.2381)	(0.2381)	
1985.period	0.1018	0.0915	-0.0557	0.0735	0.1506	0.1495	
	(0.2208)	(0.2377)	(0.2230)	(0.2488)	(0.2315)	(0.2317)	
1990.period	0.2724	0.3223	0.1702	0.3717*	0.4074*	0.4037*	
	(0.2033)	(0.2141)	(0.1912)	(0.2216)	(0.2093)	(0.2095)	
1995.period	0.2084	0.3120	0.1678	0.3421	0.4186**	0.4125**	0.1594
	(0.2058)	(0.2234)	(0.1944)	(0.2223)	(0.2095)	(0.2103)	(0.2036)
2000.period	0.0792	0.1860	0.0306	0.2033	0.3053	0.2961	0.3594*
	(0.2111)	(0.2249)	(0.1984)	(0.2357)	(0.2139)	(0.2146)	(0.2079)
2005.period	0.1616	0.2065	0.0263	0.2210	0.3281	0.3166	0.4156**
	(0.2040)	(0.2180)	(0.2006)	(0.2388)	(0.2081)	(0.2095)	(0.1994)
2010.period	0.0591	0.1301	-0.0848	0.1476	0.2556	0.2422	0.2338
	(0.2068)	(0.2205)	(0.1943)	(0.2266)	(0.2147)	(0.2145)	(0.2517)
Constant	3.1297	-0.1211	-1.0104	-0.3513	-1.7340	-1.5536	-19.8238***
	(2.0719)	(2.4034)	(2.0187)	(2.5206)	(2.1835)	(2.2020)	(6.1939)
Observations	1,545	1,542	1,541	1,483	1,545	1,545	456
R-squared	0.399	0.386	0.393	0.393	0.389	0.389	0.530
Number of ISOnum	178	178	178	174	178	178	123

Robust standard errors, adjusted for country clusters, in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Finally, the very same models have been estimated for the crisis level migratory outflows, the calculation of which has been laid out earlier in the deliverable. As the dependent variable is a binary one indicating whether or not there is a crisis level flow, the estimation methos is a fixed effects logit model, therefore, the sizes of the coefficients cannot be interpreted in a straightforward way. Accordingly, as in the previous estimation, population size has a stiatistically significant effect on crisis level outflows. Similarly, regarding the first and third models, the nonlinear GDP impact is confirmed for the first two models while the population effect is visible for all. In addition, when controlling for the impact of population size and GDP per capita, years of education is also a statistically significant predictor of crisis level migration. In this model, urbanization is no longer statistically significant. This may indicate that while it has a stable and slow paced impact on flows in general, urbanization does not trigger crisis level flows. None of the other variables exert a statistically significant effect on crisis level flows from an origin country, possibly because only the driving factors in the origin are taken into consideration.

The years 1980, 1995, 2000, and 2010 also statistically significant negative time effect on migratory flows. In Models 5,6,7 the omitted year, hence the reference category is 1990, so the additional impact of year dummies should be interpreted as compared to 1990. As 1990 is also a high migration year also shown in Figure 1, it is not suprising to find these negative signs in relation to these years. In other words, there is a negative impact of these years on migratory flows as compared to 1990, that the variables in our models cannot explain. Once again the similarity in the sizes of the coefficients for the year dummies indicate they also do not differ much from each other in impacting crisis level flows.

Table 4: Basic demographic (w/Labor marked) drivers of migratory crisis

VARIABLES	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7

Ln Population	1.1603***	1.1542***	1.2134***	1.5689***	1.3669***	1.4094***	1.3964***
	(0.1375)	(0.1380)	(0.1726)	(0.2824)	(0.1951)	(0.2044)	(0.1999)
Landlocked	-0.4985	-0.4203	-0.5823	-0.5400	-0.4655	-0.4473	-0.4347
	(0.4669)	(0.4759)	(0.4873)	(0.7626)	(0.5990)	(0.5951)	(0.5992)
LnGDPpc	1.9638	1.7261	2.4392*	1.2764	-0.8372	-1.4616	-1.1552
	(1.2650)	(1.3645)	(1.3914)	(1.9096)	(1.7354)	(1.8496)	(1.8057)
LnGDPpcSquared	-0.1369*	-0.1316	-0.1723**	-0.0982	0.0282	0.0639	0.0470
	(0.0779)	(0.0808)	(0.0868)	(0.1147)	(0.1034)	(0.1100)	(0.1081)
Urbanization		0.0124					
		(0.0150)					
SecondSchYears			0.2742*				
			(0.1587)				
Incomeshare L10%				0.3804			
				(0.3070)			
Labor Force Part					-0.0175		
					(0.0217)		
Youth Employment						-0.0235	
						(0.0165)	
Y Female Labor FP							-0.0216
							(0.0172)
1965.period	0.2711	0.2740	0.3516				
	(0.4216)	(0.4269)	(0.4580)				
1970.period	0.0595	0.0527	0.1055				
	(0.4839)	(0.4872)	(0.4854)				
1975.period	0.0499	0.0368	0.0607				
	(0.5458)	(0.5479)	(0.5594)				
1980.period	-0.3125	-0.3435	-0.4906	-2.7483*			
	(0.5734)	(0.5734)	(0.5915)	(1.6396)			
1985.period	0.1341	0.0802	-0.0517	-2.1617			
	(0.5119)	(0.5074)	(0.5430)	(1.5333)			
1990.period	0.9082*	0.8266	0.6503	-0.9862			
	(0.5180)	(0.5140)	(0.5452)	(1.8029)			
1995.period	0.4320	0.3391	0.0295	-0.8499	-0.5763	-0.6324*	-0.6167*
	(0.5175)	(0.5212)	(0.5694)	(1.8239)	(0.3560)	(0.3662)	(0.3621)
2000.period	0.2297	0.1358	-0.1147	-1.0390	-0.8107*	-0.8942**	-0.8852**
	(0.5400)	(0.5312)	(0.6074)	(1.7953)	(0.4268)	(0.4396)	(0.4384)
2005.period	0.5396	0.4484	0.2149	-0.8154	-0.4364	-0.5262	-0.5387
	(0.5401)	(0.5308)	(0.5955)	(1.7803)	(0.3718)	(0.3847)	(0.3887)
2010.period	-0.1269	-0.2187	-0.6157	-1.5406	-1.1904***	-1.3239***	-1.3301***
	(0.5422)	(0.5425)	(0.6329)	(1.7131)	(0.4520)	(0.4643)	(0.4695)
Constant	-27.4709***	-26.3900***	-30.0838***	-31.4609***	-17.4518**	-15.5760*	-16.6311*
	(6.0881)	(6.4443)	(6.9959)	(9.9742)	(8.6935)	(8.8176)	(8.7582)
lnsig2u	0.9989***	0.9906***	0.9624***	1.6491***	1.4089***	1.4295***	1.4182***
	(0.2464)	(0.2457)	(0.2797)	(0.3506)	(0.3035)	(0.2998)	(0.3000)
Observations	1,574	1,574	1,282	608	837	837	837
Number of ISOnum	178	178	139	152	172	172	172

Robust standard errors, adjusted for country clusters, in parentheses *** p<0.01, ** p<0.05, * p<0.1

Finally, the results for the models with demographic drivers beyond the labor market dynamics are shown in Table 5. The results are quite comparable to the ones with the flows. The one visible difference is the now statistically significant effect of youth employment on migration. In particular, the significant value for this variable indicates countries where the youth cohorts are better integrated into the labor market are less likely to be origins of crisis level migratory flows. However considering this effect is not significant on its own when the model can be estimated for a larger time span indicates that this finding holds for the period after 1990. Regarding the temporal effects, only the time period between 1990-1995 seems to exert a separate effect resulting in higher likelihood of crisis level migrations and once again the latest period of 2010-2015 does not have a statistically significant effect on crisis level flows. This is also partly because the dataset includes not only forced migration statistics but all migratory movements and still the variation in the majority of these voluntary flows can be explained by the variables in the models.

Table 5: All demographic drivers of migratory crisis

VARIABLES	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7
LnPopulation	1.2636***	1.1155***	1.0996***	1.1347***	1.1468***	1.1442***	2.3253***
	(0.1791)	(0.1366)	(0.1330)	(0.1386)	(0.1395)	(0.1400)	(0.4142)
Landlocked	-0.7257	-0.4911	-0.3569	-0.4610	-0.5012	-0.4946	-1.1004
	(0.4748)	(0.4492)	(0.4368)	(0.4616)	(0.4587)	(0.4577)	(0.9572)
LnGDPpc	1.3860	1.4150	1.0298	0.9107	1.9742	1.9039	-0.3266
	(1.5322)	(1.3085)	(1.3449)	(1.5214)	(1.2711)	(1.2769)	(2.6839)
LnGDPpcSquared	-0.1230	-0.1119	-0.0977	-0.0804	-0.1428*	-0.1379*	0.0052
	(0.0982)	(0.0791)	(0.0796)	(0.0892)	(0.0789)	(0.0780)	(0.1620)
Population Growth	-1.0202***						-3.3956**
	(0.2370)						(1.4702)
Fertility Rate		-0.1785					2.9811**
		(0.1100)					(1.4948)
Life Expectancy			0.0631**				0.3279***
			(0.0314)				(0.1148)
Mortality				-0.0073			0.0135
				(0.0071)			(0.0269)
Youth Rate					-0.0165		0.8146**
					(0.0258)		(0.3818)
Youth Pop Depend						-0.0066	-0.3140*
						(0.0105)	(0.1908)
Urbanization							-0.0407
							(0.0355)
SecondSchoolYrs							0.6277*
							(0.3379)
IncShare L 10%							0.5827
							(0.3948)
Labor Force P							-0.0072
							(0.0612)
Youth Employment							-0.1182*
							(0.0617)
Female Labor P							0.1182
							(0.0744)
1965.period	0.2682	0.2685	0.2116	0.1897	0.2882	0.2915	
	(0.4199)	(0.4168)	(0.4157)	(0.4864)	(0.4200)	(0.4207)	
1970.period	0.0374	0.0216	-0.0778	0.0951	0.0838	0.0847	
	(0.4999)	(0.4812)	(0.4796)	(0.5225)	(0.4828)	(0.4831)	
1975.period	-0.0289	-0.0308	-0.1711	-0.0241	0.0667	0.0675	
	(0.5631)	(0.5448)	(0.5348)	(0.5968)	(0.5461)	(0.5469)	

1980.period	-0.4055	-0.4427	-0.6364	-0.3542	-0.3132	-0.3124	
	(0.6049)	(0.5649)	(0.5687)	(0.6459)	(0.5723)	(0.5727)	
1985.period	-0.0462	-0.0423	-0.2851	0.0412	0.1202	0.1212	
	(0.5366)	(0.5041)	(0.5010)	(0.5810)	(0.5096)	(0.5093)	
1990.period	0.5039	0.6658	0.4229	0.7796	0.8738*	0.8752*	
	(0.5544)	(0.5099)	(0.5385)	(0.6263)	(0.5036)	(0.5030)	
1995.period	-0.2258	0.1287	-0.0925	0.2582	0.3778	0.3797	-0.6265
	(0.5513)	(0.5310)	(0.5370)	(0.6413)	(0.5100)	(0.5079)	(0.6302)
2000.period	-0.4298	-0.0969	-0.3435	-0.0441	0.1561	0.1589	-0.4443
	(0.5801)	(0.5304)	(0.5747)	(0.6512)	(0.5251)	(0.5193)	(0.6081)
2005.period	-0.0059	0.2142	-0.0917	0.2494	0.4524	0.4565	0.1504
	(0.5674)	(0.5211)	(0.5788)	(0.6758)	(0.5148)	(0.5092)	(0.5186)
2010.period	-0.6705	-0.4490	-0.8332	-0.3808	-0.2211	-0.2149	-1.0490
	(0.5978)	(0.5459)	(0.5818)	(0.6945)	(0.5255)	(0.5206)	(0.7863)
Constant	-23.5016***	-23.0785***	-25.1985***	-21.8744***	-26.3308***	-26.2102***	-75.1526***
	(7.2095)	(6.5186)	(6.0922)	(7.6837)	(6.4073)	(6.4938)	(21.5609)
lnsig2u	1.3330***	0.9362***	0.8217***	0.9469***	0.9775***	0.9719***	1.5275***
	(0.3001)	(0.2469)	(0.2592)	(0.2458)	(0.2462)	(0.2481)	(0.4333)
Observations	1,574	1,571	1,570	1,510	1,574	1,574	461
Number of ISOnum	178	178	178	174	178	178	123

Robust standard errors, adjusted for country clusters, in parentheses
*** p<0.01, ** p<0.05, * p<0.1

COUNTRY DYAD FOCUSED MODELS

Having illustrated the demographic determinants of migratory flows from the perspective of origin countries, it is important to explore them more relationally, by looking at the interactions between country dyads. The presentation of the following models will be similar to the previous section. To this end, a dyadic dataset is constructed, consisting of country dyads for the five year intervals between 1960 and 2015. The independent variables refer to indicators in origin and destination countries separately[9]. With this data, fixed effect models with clustered robust standard errors were estimated first for overeall flows and then for crisis flows.

Table 7 below illustrates the role of several structural drivers in explaining migratory flows between dyads of countries feom 1960 to 2015. One striking result is the high number of variables that have a statistically significant impact on flows, indicating a better model specification as compared to models based on outflows from origins only. Accordingly, consistent with the previous

[9] Alternative models were also estimated with a relational definition of these independent variables by subtracting the origin values from the destination values but the results remained similar. The variables are incorporated into the models separately to make better use of the full variation of the data as well as considering potential inconsistencies of data in low income countries making comparisons with higher income countries difficult.

findings in the literature, being contiguous, sharing a common language, being a colony of the destination or having colonized the destination all have statistically significant positive impact on migration. Similarly, an increase in the distance between country dyads as well as being from a landlocked country results in lower levels of migratory flows indicating the importance of geographical location and sea borders. In their analysis of migration patterns between 1960-2000 also based on census data, Czaika and Haas(2014) have argued decreasing significance of post-colonial migration patterns and distances, nevertheless, these findings illustrate that they still exert and important influence on people's ability to migrate internationally, even more so for crisis level migrations, which will be discussed below. The difference between the GDP per capitas is also statistically significant for all the estimated models with higher difference between the dyad countries results in higher flows. The variable capturing inequality thorugh the income share of the lowest 10 percent does not seem to have a statistically significant effect, however its inclusion into the model also leads the significance loss of the temporal effect for 2010. This would suggest some of the mobility in 2010 can actually be explained by inequality in the origin factors.

In terms of the demographics, as the population of the country origin as well as the country of destination increase, so does the magnitude of migration flows. The next set of variables are included one by one, to show their sole impact to the base models as well as to make sure not to lose much data due to missing cases. Higher urbanization rates at both origin and destination result in higher migration in a statistically significant way. This finding suggests, from the perspective of the origin, a continuance of mobility that starts with urbanization -potentially an unplanned one, reducing habitability. From the perspective of the destination, it is consistent with the literature which posits that potentially multicultural urban centers are more attractive destinations for migrants due to the ease in social and economic cohesion than other areas. Average secondary education attainment is also both a push and a pull factor, with higher values at the origin leading to more migration but high values at the destination serve as an even higher attraction for people globally as indicated by the high and statistically significant coefficient of the variable.

Regarding the labor market related components of demographic drivers, both overall labor force participation and youth employment in the destination are pull factors migration. However, the origin dimensions of these variables do not seem to have a sizable negative impact in pushing people to move, at least not in a statisticall significant way. Finally, women's labor force participation in the destination has a curious statistically significant negative impact on migration. In terms of the time effects, many of the year dummies have a statistically significant negative effect on dyadic flows. In terms of their model fit, the models explain at least 25 percent of the variance in the dyadic flows.

For the models 1 through 3, illustrate increasing temporal effects as of 1980 when compared to the migration levels of 1960. The effect is negative indicating that there is a negative impact exerted by events during these years as compared to 1960, which cannot be accounted for by the models estimated.

Table 6: Basic demographic (w/Labor market) drivers of all flows based on country dyads

VARIABLES	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7
Contiguity	2.8190***	2.8660***	2.4838***	2.8562***	2.8397***	2.8304***	2.8291***
	(0.1793)	(0.1768)	(0.2035)	(0.2529)	(0.2083)	(0.2070)	(0.2066)
Common Language	0.6189***	0.7604***	0.9251***	0.6066***	0.5973***	0.5711***	0.5610***
	(0.0563)	(0.0580)	(0.0712)	(0.0885)	(0.0752)	(0.0751)	(0.0750)
Colony of Destination	3.5783***	3.2612***	2.8685***	3.6104***	3.8996***	3.9406***	3.9308***
	(0.1569)	(0.1501)	(0.1554)	(0.2081)	(0.1870)	(0.1874)	(0.1874)
Colonizer of Dest.	1.0276***	0.7703**	0.5690	1.0919**	1.1034***	1.1193***	1.1273***
	(0.3510)	(0.3451)	(0.3923)	(0.5190)	(0.4223)	(0.4170)	(0.4141)
Distance (1,000km)	-0.0914***	-0.0812***	-0.1033***	-0.0996***	-0.0929***	-0.0961***	-0.0972***
	(0.0066)	(0.0055)	(0.0071)	(0.0116)	(0.0086)	(0.0086)	(0.0086)
Origin Population (Ln)	0.2600***	0.2537***	0.3296***	0.3258***	0.3150***	0.3162***	0.3156***
	(0.0241)	(0.0236)	(0.0335)	(0.0393)	(0.0325)	(0.0327)	(0.0321)
Dest Population (Ln)	0.2508***	0.2403***	0.3300***	0.2454***	0.2476***	0.2401***	0.2376***
	(0.0085)	(0.0079)	(0.0105)	(0.0117)	(0.0096)	(0.0097)	(0.0096)
Diff GDP pc	0.0191***	0.0181***	0.0177***	0.0269***	0.0212***	0.0209***	0.0208***
	(0.0028)	(0.0027)	(0.0028)	(0.0043)	(0.0030)	(0.0030)	(0.0030)
Landlocked (O)	-0.4819***	-0.2577***	-0.5121***	-0.5379***	-0.5431***	-0.5532***	-0.5531***
	(0.1124)	(0.0992)	(0.1237)	(0.1642)	(0.1473)	(0.1417)	(0.1430)

Landlocked (D)	-0.3715***	-0.0824***	-0.2791***	-0.4108***	-0.3566***	-0.4227***	-0.4446***
	(0.0263)	(0.0245)	(0.0315)	(0.0326)	(0.0336)	(0.0330)	(0.0334)
Urbanization (O)		0.0119***					
		(0.0018)					
Urbanization (D)		0.0162***					
		(0.0012)					
Secondary Sch Yrs (O)			0.2051***				
			(0.0419)				
Secondary Sch Yrs (D)			0.4221***				
			(0.0206)				
Inc Share L 10% (O)				0.0919			
				(0.0633)			
Inc Share L 10% (D)				0.0295			
				(0.0241)			
Female Labor F Part (O)					-0.0035		
					(0.0055)		
Female Labor F Part (D)					-0.0066***		
					(0.0011)		
Youth Employment (O)						-0.0019	
						(0.0037)	
Youth Employment (D)						0.0035***	
						(0.0006)	
Labor Force Part (O)							-0.0022
							(0.0041)
Labor Force Part (D)							0.0071***
							(0.0006)
1965.period	-0.0461	-0.1065	-0.1284				
	(0.0871)	(0.0878)	(0.0986)				
1970.period	-0.0094	-0.1677	-0.1981*				
	(0.1030)	(0.1059)	(0.1175)				
1975.period	0.0151	-0.2216*	-0.2965**				
	(0.1131)	(0.1146)	(0.1342)				
1980.period	0.0301	-0.2589**	-0.4609***	0.0146			
	(0.1200)	(0.1236)	(0.1384)	(0.6353)			
1985.period	0.0260	-0.3336***	-0.6497***	-0.1232			
	(0.1175)	(0.1242)	(0.1435)	(0.4392)			
1990.period	-0.2786***	-0.6973***	-1.0607***	-0.5517			
	(0.1017)	(0.1060)	(0.1349)	(0.4864)			
1995.period	-0.2958***	-0.7568***	-1.2792***	-0.4919	-0.0243	-0.0191	-0.0133
	(0.1055)	(0.1129)	(0.1462)	(0.4838)	(0.0683)	(0.0695)	(0.0689)
2000.period	-0.3286***	-0.8299***	-1.4654***	-0.4752	-0.0570	-0.0468	-0.0341
	(0.1005)	(0.1070)	(0.1404)	(0.4671)	(0.0636)	(0.0653)	(0.0655)
2005.period	-0.3003***	-0.8454***	-1.5492***	-0.4483	-0.0256	-0.0154	0.0034
	(0.1044)	(0.1115)	(0.1436)	(0.4701)	(0.0645)	(0.0677)	(0.0707)
2010.period	-0.4656***	-1.0540***	-1.9043***	-0.6555	-0.2013***	-0.1866**	-0.1617**
	(0.1001)	(0.1111)	(0.1526)	(0.4652)	(0.0684)	(0.0739)	(0.0756)
Constant	-5.6004***	-6.5482***	-8.1438***	-6.5186***	-6.0478***	-6.6088***	-6.7279***
	(0.4175)	(0.4248)	(0.5772)	(0.7970)	(0.6110)	(0.5478)	(0.5708)
Observations	234,055	234,055	152,169	61,806	138,552	138,552	138,552
R-squared	0.267	0.315	0.336	0.271	0.249	0.246	0.247
Number of DYADs	31,329	31,329	19,044	22,012	29,241	29,241	29,241

Robust standard errors, adjusted for country clusters, in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Following the initial exploration of the effects of first set of variables on dyadic flows, a second set of models are estimated with all demographic indicators as it was done with the origin country based models and the results are illustrated in Table 7. Accordingly, higher levels of population growth and fertility in the origin predicts lower levels of migration. The combination of a positive sign for population growth and negative one for fertility indicates that the demographic characteristic of the destinations that drive more migration is their growth in population due to past migration. Increases in life expectancy and decreases in infant mobility result in more migration indicating that the assumption that people simply run away from negative human development conditions are not entirely the case, it may be that those people living in the lowest levels of these indicators are not actually capable to migrate (Haas 2010).

Furthermore, basic demographic and economic variables continue to exert their statistically significant effect. In addition, the difference between the share of the lowest 10 percent from the national income also an important driver in that as it increases, so do the flows. For all models except the first one, whether or not the destination country is landlocked has now have a statistically significant effect, which was not the case for the previous, indicating the role played by ease of access through waterways. The impact of GINI is counter intuitive and neither internal, nor external conflict seems to have any statistically significant contribution to the models. The model fits are also slightly improved but deem careful comparison due to the different samples from which the models are estimated as a result of the missing values on these variables. Finally regarding the share of youth cohorts and youth dependency, they have a negative impact on dyadic flows both in the origin and destination. This finding makes better sense for the destination countries. The model fits for these second sets of variables that are mostly proxies of human development are better than the ones estimated in Table 6. Almost half of the variance in the dependent variable is explained in the final full model, yet the loss of data from earlier year slots should be kept in mind in interpreting this result. As in the previous estimates, for the models 1 through 4, exhibit increasing temporal effects as of 1980 when compared to the migration levels of 1960. The effect is negative indicating that there is a negative impact exerted by events during these years as compared to 1960, which cannot be accounted for by the models estimated. Nevertheless the differences are not vast between most of these periods indicating they do not differ much from each other, or that there would not be much of a difference with a different reference year.

Table 7: All demographic drivers of migratory all flows based on country dyads

VARIABLES	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7
Contiguity	2.8140***	2.8317***	2.8496***	2.8060***	2.8601***	2.8449***	2.3819***
	(0.1781)	(0.1831)	(0.1799)	(0.1853)	(0.1835)	(0.1833)	(0.2542)
Common Language	0.6564***	0.7541***	0.7902***	0.7112***	0.8703***	0.8262***	1.1486***
	(0.0581)	(0.0557)	(0.0562)	(0.0562)	(0.0566)	(0.0566)	(0.0955)
Colony of Destination	3.6272***	3.2823***	3.2266***	3.3316***	3.0101***	3.1300***	2.2665***
	(0.1588)	(0.1514)	(0.1513)	(0.1567)	(0.1469)	(0.1486)	(0.1884)
Colonizer of Dest.	0.8208**	0.8451**	0.6802**	0.8863***	0.6648*	0.7442**	0.3620
	(0.3322)	(0.3516)	(0.3323)	(0.3307)	(0.3411)	(0.3449)	(0.4234)
Distance (1,000km)	-0.0913***	-0.0897***	-0.0922***	-0.0933***	-0.0782***	-0.0829***	-0.0947***
	(0.0065)	(0.0061)	(0.0058)	(0.0064)	(0.0057)	(0.0058)	(0.0113)
Origin Population (Ln)	0.2612***	0.2605***	0.2684***	0.2698***	0.2670***	0.2651***	0.4359***
	(0.0239)	(0.0226)	(0.0220)	(0.0237)	(0.0215)	(0.0217)	(0.0463)
Dest Population (Ln)	0.2514***	0.2498***	0.2629***	0.2643***	0.2521***	0.2517***	0.2598***
	(0.0084)	(0.0083)	(0.0085)	(0.0086)	(0.0083)	(0.0083)	(0.0157)
Diff GDP pc	0.0183***	0.0187***	0.0198***	0.0196***	0.0163***	0.0171***	0.0089**
	(0.0029)	(0.0028)	(0.0027)	(0.0029)	(0.0027)	(0.0027)	(0.0035)
Landlocked (O)	-0.4663***	-0.3998***	-0.2262**	-0.3792***	-0.3574***	-0.3692***	-0.2698*
	(0.1056)	(0.1051)	(0.0989)	(0.1126)	(0.0920)	(0.0956)	(0.1481)
Landlocked (D)	-0.3773***	-0.2340***	-0.1357***	-0.2262***	-0.1707***	-0.1810***	-0.0614
	(0.0278)	(0.0269)	(0.0258)	(0.0287)	(0.0242)	(0.0247)	(0.0381)
Urbanization (O)							0.0020
							(0.0044)
Urbanization (D)							0.0101***
							(0.0013)
Secondary Sch Yrs (O)							0.1009
							(0.0624)
Secondary Sch Years (D)							0.3016***
							(0.0151)
Inc Share L 10% (O)							0.0083
							(0.0731)
Inc Share L 10% (D)							-0.2006***
							(0.0213)
Female Labor F Part (O)							0.0023
							(0.0133)
Female Labor F Part (D)							-0.0286***
							(0.0026)
Youth Employment (O)							0.0033
							(0.0124)
Youth Employment (D)							-0.0202***
							(0.0034)
Labor Force Part (O)							0.0016
							(0.0153)
Labor Force Part (D)							0.0572***
							(0.0034)
Population Growth (O)	-0.1488***						-0.3372***
	(0.0395)						(0.1043)

Population Growth (D)	0.0397***						0.6064***
	(0.0076)						(0.0356)
Fertility (O)		-0.0847***					0.0361
		(0.0249)					(0.1631)
Fertility (D)		-0.1515***					-0.1315***
		(0.0127)					(0.0413)
Life Expectancy (O)			0.0331***				0.0838***
			(0.0046)				(0.0193)
Life Expectancy (D)			0.0300***				-0.0608***
			(0.0025)				(0.0057)
Infant Mortality (O)				-0.0039***			0.0104**
				(0.0013)			(0.0049)
Infant Mortality (D)				-0.0060***			-0.0109***
				(0.0006)			(0.0020)
Youth Population (O)					-0.0215***		0.0585
					(0.0050)		(0.0433)
Youth Population (D)					-0.0442***		-0.3026***
					(0.0030)		(0.0184)
Pop Depend Youth (O)						-0.0080***	-0.0062
						(0.0020)	(0.0219)
Pop Depend Youth (D)						-0.0163***	0.0920***
						(0.0011)	(0.0075)
1965.period	-0.0545	-0.0841	-0.1428	-0.1071	-0.0338	-0.0201	
	(0.0849)	(0.0893)	(0.0912)	(0.0897)	(0.0878)	(0.0878)	
1970.period	-0.0257	-0.1307	-0.2592**	-0.2071*	-0.0298	-0.0187	
	(0.1042)	(0.1074)	(0.1092)	(0.1152)	(0.1051)	(0.1050)	
1975.period	-0.0057	-0.1794	-0.3754***	-0.3008**	-0.0672	-0.0512	
	(0.1141)	(0.1191)	(0.1215)	(0.1301)	(0.1161)	(0.1160)	
1980.period	0.0100	-0.2224*	-0.4814***	-0.3497**	-0.1350	-0.1112	
	(0.1215)	(0.1281)	(0.1338)	(0.1404)	(0.1251)	(0.1251)	
1985.period	-0.0062	-0.3047**	-0.5940***	-0.4361***	-0.2069*	-0.1770	
	(0.1180)	(0.1285)	(0.1340)	(0.1434)	(0.1242)	(0.1242)	
1990.period	-0.3298***	-0.6968***	-0.9635***	-0.7884***	-0.5857***	-0.5516***	
	(0.1043)	(0.1140)	(0.1135)	(0.1346)	(0.1040)	(0.1047)	
1995.period	-0.3701***	-0.8056***	-1.0347***	-0.8661***	-0.6947***	-0.6541***	-0.0638
	(0.1113)	(0.1246)	(0.1217)	(0.1420)	(0.1143)	(0.1145)	(0.1656)
2000.period	-0.4106***	-0.8989***	-1.1443***	-0.9508***	-0.8497***	-0.7962***	-0.0847
	(0.1085)	(0.1242)	(0.1208)	(0.1391)	(0.1095)	(0.1100)	(0.1333)
2005.period	-0.3674***	-0.9078***	-1.2224***	-0.9857***	-0.9476***	-0.8730***	-0.2745*
	(0.1104)	(0.1284)	(0.1263)	(0.1466)	(0.1124)	(0.1140)	(0.1404)
2010.period	-0.5467***	-1.1043***	-1.5061***	-1.1897***	-1.1957***	-1.1046***	-0.6207***
	(0.1085)	(0.1319)	(0.1351)	(0.1535)	(0.1191)	(0.1189)	(0.1724)
Constant	-5.3936***	-4.3544***	-9.4662***	-5.0390***	-3.3272***	-4.0672***	-8.9452***
	(0.4041)	(0.3900)	(0.5496)	(0.4017)	(0.3797)	(0.3751)	(2.1164)
Observations	234,055	233,458	233,219	220,512	234,055	234,055	43,623
R-squared	0.264	0.307	0.320	0.306	0.327	0.320	0.456
Number of DYADs	31,329	31,329	31,329	30,276	31,329	31,329	14,697

Robust standard errors, adjusted for country clusters, in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Having illustrated the impact of different drivers on country dyads, similar models are estimated for origin countries with crisis level out-flows, yielding to the results in the following table. Accordingly, contiguity, distance, common language and colonization history all seem to be significantly affecting the variation in flows from crisis origin countries, much like the overall flow models. The coefficients of certain drivers are different, and overall have higher values.

For instance, the difference in GDP per capitas beween the countries is almost double of what it was for all flows. Similary, contiguity, colonization past, fertility, distance between the countries in the dyad also exert a higher influence and also continues to be statistically significant. Two differences stand out in that, poverty/inequality and youth employment. Regarding the former, higher shares of the lowest 10 percent of the population from the national income results in less migration in a statistically significant way and youth employment's effect is not longer at statistically significant levels. This result indicates inequality in addition to wealth, is an important predictor of crisis level migratory flows. For models 2 and 3, as compared to 1960 migration levels, the years after 1975 exert a statistically significant negative effect on flows when controlling for the effect of all other variables in the estimation.

Table 8: Basic demographic (w/labor market) drivers of flows based on country dyads for crisis origin

VARIABLES	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7
Contiguity	3.1674***	3.2294***	2.8595***	2.9533***	2.9643***	2.9549***	2.9408***
	(0.3056)	(0.3041)	(0.3778)	(0.4974)	(0.3508)	(0.3456)	(0.3452)
Common Language	0.8612***	1.0024***	1.2740***	0.7617***	0.8765***	0.8729***	0.8474***
	(0.1492)	(0.1374)	(0.1535)	(0.2413)	(0.1963)	(0.1940)	(0.1928)
Colony of Destination	4.3827***	3.8560***	3.4570***	4.3635***	4.5058***	4.5559***	4.5604***
	(0.2481)	(0.2395)	(0.2309)	(0.3551)	(0.3410)	(0.3431)	(0.3428)
Colonizer of Dest.	1.1476***	0.5979**	0.4879*	1.9847***	1.6164***	1.6134***	1.6182***
	(0.2675)	(0.2549)	(0.2727)	(0.5201)	(0.4565)	(0.4458)	(0.4549)
Distance (1,000km)	-0.1107***	-0.1043***	-0.1105***	-0.1072***	-0.1068***	-0.1088***	-0.1132***
	(0.0164)	(0.0131)	(0.0157)	(0.0373)	(0.0212)	(0.0204)	(0.0203)
Origin Population (Ln)	0.2459***	0.3151***	0.2817***	0.3996***	0.2860***	0.2955***	0.2951***
	(0.0803)	(0.0605)	(0.0755)	(0.1128)	(0.1033)	(0.1066)	(0.1046)
Dest Population (Ln)	0.3961***	0.3722***	0.4551***	0.3705***	0.3804***	0.3780***	0.3691***
	(0.0135)	(0.0119)	(0.0158)	(0.0240)	(0.0165)	(0.0174)	(0.0171)
Diff GDP pc	0.0383***	0.0324***	0.0313***	0.0454***	0.0377***	0.0377***	0.0373***
	(0.0062)	(0.0059)	(0.0057)	(0.0083)	(0.0064)	(0.0064)	(0.0064)
Landlocked (O)	-0.9010***	-0.2551	-0.9335***	-0.9298***	-0.9736***	-0.9436***	-0.9563***
	(0.2080)	(0.2243)	(0.3297)	(0.3129)	(0.2630)	(0.2574)	(0.2589)
Landlocked (D)	-0.6041***	-0.0898	-0.4448***	-0.6863***	-0.5817***	-0.6527***	-0.7051***
	(0.0608)	(0.0675)	(0.0680)	(0.0749)	(0.0756)	(0.0709)	(0.0699)
Urbanization (O)		0.0207***					
		(0.0040)					
Urbanization (D)		0.0301***					
		(0.0027)					
Secondary Sch Yrs (O)			0.2778***				
			(0.0815)				
Secondary Sch Yrs (D)			0.6233***				
			(0.0397)				
Inc Share L 10% (O)				-0.3656**			
				(0.1622)			

Inc Share L 10% (D)				0.0245			
				(0.0625)			
Female Labor F Part (O)					-0.0022		
					(0.0119)		
Female Labor F Part (D)					-0.0129***		
					(0.0030)		
Youth Employment (O)						-0.0037	
						(0.0077)	
Youth Employment (D)						-0.0014	
						(0.0016)	
Labor Force Part (O)							-0.0030
							(0.0085)
Labor Force Part (D)							0.0057***
							(0.0018)
1965.period	-0.0522	-0.2193	-0.1351				
	(0.2065)	(0.2205)	(0.2208)				
1970.period	-0.1154	-0.3783	-0.4202				
	(0.3210)	(0.3370)	(0.3196)				
1975.period	-0.5540*	-0.9661***	-1.0656***				
	(0.3330)	(0.3381)	(0.3318)				
1980.period	-0.2848	-0.7685**	-1.1372***	-0.6913			
	(0.3709)	(0.3892)	(0.3454)	(0.4774)			
1985.period	-0.1426	-0.8023**	-1.1536***	-0.4355			
	(0.3239)	(0.3435)	(0.3316)	(0.4425)			
1990.period	-0.3003	-1.0320***	-1.3724***	-0.3138			
	(0.3119)	(0.3244)	(0.3261)	(0.3355)			
1995.period	-0.5368	-1.3627***	-1.9220***	-0.6076	-0.3157**	-0.3254**	-0.3084**
	(0.3357)	(0.3487)	(0.3719)	(0.3773)	(0.1226)	(0.1264)	(0.1264)
2000.period	-0.4498	-1.3637***	-1.9733***	-0.4606	-0.1573	-0.1686	-0.1386
	(0.2939)	(0.3101)	(0.3173)	(0.3403)	(0.1494)	(0.1494)	(0.1480)
2005.period	-0.4226	-1.3873***	-2.1431***	-0.4474	-0.1325	-0.1508	-0.1121
	(0.3083)	(0.3245)	(0.3392)	(0.3359)	(0.1388)	(0.1437)	(0.1453)
2010.period	-0.8457***	-1.9034***	-2.8540***	-1.0093***	-0.6286***	-0.6641***	-0.6055***
	(0.3147)	(0.3281)	(0.3306)	(0.3192)	(0.1459)	(0.1536)	(0.1528)
Constant	-6.6919***	-9.5613***	-8.6618***	-7.8776***	-6.5226***	-7.3395***	-7.5158***
	(1.3838)	(1.1563)	(1.3535)	(1.7747)	(1.6407)	(1.6624)	(1.6522)
Observations	48,164	48,164	34,461	15,316	32,047	32,047	32,047
R-squared	0.279	0.362	0.365	0.281	0.266	0.263	0.262
Number of DYADs	14,524	14,524	9,718	6,872	12,441	12,441	12,441

Robust standard errors, adjusted for country clusters, in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Finally, the dyad models with only crisis origins were replicated also for all demographic drivers. Overall, variables contiguity, common language, colonization past, an differences in GDP per capita exert higher influence on flows for the crisis countries as evidenced by higher values of their coefficients.

One difference with the models that take flow as their dependent variable is the impact of population growth, which ceases to exert a statistically significant effect. Still it may have a gradual effect once it reaches a tipping point, which is not the focus of this working paper. As was the case with all flows, destination country demographic charactersitics seem to play a larger role as shown in the full Model (7). As in the case of tthe models illustrated with the basic drivers, also suggested by the the higher impact of the coefficients of the same drivers, these models have a better fit to the data as evidenced by high R-Squared values. This result indicates that many of the same drivers predicting overall flows are actually more influential in our understanding of crisis flows. As in the previous models, the panel effects are visible, in that independent time effects are observed on crisis level migrations after 1975 as compared to 1960 levels. For the final model, as compared to 1990, negative time effects are detected from 2000 to 2015 with increasing magnitude as evidenced by the big changes in the related coefficients.

Table 9: All demographic drivers of crisis level flows

VARIABLES	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7
Contiguity	3.1654***	3.1798***	3.1546***	3.0865***	3.2813***	3.2372***	2.4858***
	(0.3049)	(0.3225)	(0.3190)	(0.3277)	(0.3262)	(0.3266)	(0.4903)
Common Language	0.8467***	1.1144***	1.1327***	1.0581***	1.2729***	1.2338***	1.4117***
	(0.1529)	(0.1447)	(0.1440)	(0.1436)	(0.1308)	(0.1374)	(0.2306)
Colony of Destination	4.4067***	3.8523***	3.8354***	3.9476***	3.4889***	3.6388***	2.5312***
	(0.2454)	(0.2383)	(0.2396)	(0.2415)	(0.2326)	(0.2347)	(0.2934)
Colonizer of Dest.	1.1734***	0.8444***	0.6126**	1.1785***	0.4862**	0.6001**	0.5757*
	(0.2765)	(0.2558)	(0.2602)	(0.3233)	(0.2333)	(0.2401)	(0.3321)
Distance (1,000km)	-0.1109***	-0.1088***	-0.1156***	-0.1158***	-0.0900***	-0.0965***	-0.0897***
	(0.0165)	(0.0150)	(0.0139)	(0.0156)	(0.0134)	(0.0139)	(0.0228)
Origin Population (Ln)	0.2431***	0.2435***	0.2681***	0.2605***	0.2533***	0.2489***	0.4260***
	(0.0847)	(0.0721)	(0.0664)	(0.0723)	(0.0626)	(0.0642)	(0.1115)
Dest Population (Ln)	0.3961***	0.3912***	0.4121***	0.4259***	0.3873***	0.3896***	0.3959***
	(0.0135)	(0.0128)	(0.0130)	(0.0136)	(0.0123)	(0.0125)	(0.0305)
Diff GDP pc	0.0384***	0.0338***	0.0341***	0.0354***	0.0282***	0.0302***	0.0192***
	(0.0061)	(0.0063)	(0.0060)	(0.0064)	(0.0058)	(0.0059)	(0.0063)
Landlocked (O)	-0.9031***	-0.6364***	-0.3396*	-0.6322***	-0.4149**	-0.4436**	-0.2603
	(0.2086)	(0.2082)	(0.2061)	(0.2153)	(0.2108)	(0.2098)	(0.4528)
Landlocked (D)	-0.6058***	-0.3256***	-0.1368*	-0.2832***	-0.2341***	-0.2358***	-0.0474
	(0.0617)	(0.0686)	(0.0727)	(0.0755)	(0.0622)	(0.0639)	(0.0899)
Urbanization (O)							-0.0101
							(0.0080)
Urbanization (D)							0.0181***
							(0.0028)
Secondary Sch Yrs (O)							0.1709
							(0.1055)
Secondary Sch Yrs (D)							0.3452***
							(0.0293)
Inc Share L 10% (O)							-0.3654**
							(0.1695)
Inc Share L 10% (D)							-0.2587***
							(0.0425)
Female Labor F Part (O)							-0.0008
							(0.0288)
Female Labor F Part (D)							-0.0254***
							(0.0064)
Youth Employment (O)							-0.0396

							(0.0279)
Youth Employment (D)							-0.0383***
							(0.0057)
Labor Force Part (O)							0.0457
							(0.0365)
Labor Force Part (D)							0.0767***
							(0.0058)
Population Growth (O)	0.0215						0.2365
	(0.0812)						(0.2354)
Population Growth (D)	0.0175						0.6847***
	(0.0237)						(0.0729)
Fertility (O)		-0.1395***					-0.5258
		(0.0528)					(0.3208)
Fertility (D)		-0.3111***					0.0861
		(0.0333)					(0.0794)
Life Expectancy (O)			0.0457***				0.1108**
			(0.0099)				(0.0468)
Life Expectancy (D)			0.0605***				-0.0800***
			(0.0062)				(0.0109)
Infant Mortality (O)				-0.0071**			0.0219**
				(0.0028)			(0.0103)
Infant Mortality (D)				-0.0139***			-0.0219***
				(0.0018)			(0.0041)
Youth Population (O)					-0.0406***		-0.1900**
					(0.0088)		(0.0759)
Youth Population (D)					-0.0811***		-0.3301***
					(0.0065)		(0.0281)
Pop Depend Youth (O)						-0.0162***	0.1025**
						(0.0039)	(0.0398)
Pop Depend Youth (D)						-0.0311***	0.0815***
						(0.0026)	(0.0114)
1965.period	-0.0449	-0.1446	-0.2689	-0.1904	-0.0111	0.0095	
	(0.2052)	(0.2235)	(0.2354)	(0.1954)	(0.2122)	(0.2156)	
1970.period	-0.1058	-0.3558	-0.5158	-0.5595*	-0.1562	-0.1295	
	(0.3200)	(0.3420)	(0.3598)	(0.3131)	(0.3260)	(0.3313)	
1975.period	-0.5404	-0.9445***	-1.1923***	-1.2275***	-0.7232**	-0.6940**	
	(0.3344)	(0.3526)	(0.3725)	(0.3221)	(0.3291)	(0.3345)	
1980.period	-0.2712	-0.8055**	-1.1119***	-1.1378***	-0.6119	-0.5832	
	(0.3713)	(0.3914)	(0.4125)	(0.3339)	(0.3730)	(0.3799)	
1985.period	-0.1229	-0.8165**	-1.1755***	-1.1801***	-0.6229*	-0.5865*	
	(0.3240)	(0.3600)	(0.3776)	(0.3582)	(0.3311)	(0.3411)	
1990.period	-0.2733	-1.1486***	-1.4538***	-1.4664***	-0.9302***	-0.8932***	
	(0.3085)	(0.3434)	(0.3411)	(0.3372)	(0.3188)	(0.3288)	
1995.period	-0.5018	-1.5488***	-1.8106***	-1.8388***	-1.3409***	-1.2945***	-0.3702
	(0.3369)	(0.3611)	(0.3628)	(0.3396)	(0.3455)	(0.3531)	(0.2600)
2000.period	-0.4160	-1.5753***	-1.8535***	-1.8304***	-1.4682***	-1.4129***	-0.3808*
	(0.3034)	(0.3372)	(0.3362)	(0.3600)	(0.2999)	(0.3080)	(0.2075)
2005.period	-0.3914	-1.6096***	-1.9928***	-1.9320***	-1.6678***	-1.5814***	-0.7862***
	(0.3130)	(0.3464)	(0.3457)	(0.3737)	(0.3166)	(0.3256)	(0.2454)
2010.period	-0.8111**	-2.0786***	-2.5985***	-2.4902***	-2.2247***	-2.1034***	-1.6468***
	(0.3186)	(0.3599)	(0.3687)	(0.3613)	(0.3268)	(0.3365)	(0.3446)
Constant	-6.7232***	-4.1805***	-13.2574***	-5.3284***	-2.1505**	-3.4095***	-6.6407
	(1.3874)	(1.2549)	(1.4852)	(1.2575)	(1.0906)	(1.1156)	(5.0085)
Observations	48,164	48,109	48,088	45,745	48,164	48,164	11,479
R-squared	0.277	0.342	0.359	0.349	0.374	0.364	0.528
Number of DYADs	14,524	14,522	14,521	13,990	14,524	14,524	4,913

Robust standard errors, adjusted for country clusters, in parentheses
*** p<0.01, ** p<0.05, * p<0.1

CONCLUDING REMARKS

In this deliverable, the goal is to explore the impact of different demographic factors on migratory flows and crisis level flows across the time and space. Deliverable 1.3 had explored some of these demographic determinants briefly as control variables and rather focused on the role of socio-economic drivers. This one has expanded on the findings from the previous working paper. In doing this, Abel (2017)'s stock to flow conversions were used with a global dataset created covering 187 countries as both countries of origin and destination for the years 1960 to 2015. The findings first underline that when looked from the countries of origin, the demographic drivers have a limited impact on both flows and crisis level flows. This is consistent with Vezzoli et al. (2017), in arguing that demographic factors do not 'cause' migration, but may be associated to particular migration trends in combination with other political, economic and other migration determinants. This makes demographics alone a rather poor predictor, because they are but one of the many factors affecting migration. However, dyadic models, yielding to better model specifications illustrated the exact impact of different demographic variables controlling for various structural factors such as economic growth, inequality, geographical distances, cultural and colonial ties between countries.

Equally importantly, the results contribute to the discussion on the role of urbanization, labor market characteristics and human development indicators in important ways. Consistently, many demographic drivers showed statistically significant impact especially through being pull factors in destination countries. This result held for human development variables to a lesser extent and at times in unexpected ways. The results regarding origin countries underlined the importance of material capabilities and inequality as those at low levels of development also lack resources to migrate, also supported with the finding that changes in employment or education did not directly result in less migration. The results also showed the importance of urbanization both in origin and destination, thereby contributing to the discussions in this literature. This continuity of mobility which starts with urbanization and continues with international migration should be examined more both alone and in relation to other drivers.

As argued earlier, issues of data availability is a potential threat to our results especially considering the missing data is non random and stems systematically from developing countries, that are largely sources of this out-migration. Furthermore, while Abel's estimates, albeit for five year intervals, considerably improved our ability to explore the temporal dimensions of the data, but only insofar as the measurement of our independent variables allow. The lack of data for certain estimations can be offset in the future with imputations through backcasting methods adopted by many scholars and other H2020 projects such as HumMingBird. Still issues of comparability across national contexts and time will remain with regards to many of these variables as they will never be objectively, precisely, and consistently measured as in environmental data on tempretatures or rainfall, which will be explored by the next deliverable of this workpackage.

Furthermore, more research is needed to better assess the long term, lagged or cumulative impact of certain demographic drivers and intersectionalities on flows, which are challenging to model as the dependent variable is coded for every five years and does not avail itself to a long time series analysis. Finally, while the structural and demographic drivers are important in understanding migration crisis, they should be complemented with rapid onset and slow onset environmental drivers, which is what this MAGYC Workpackage set to do in the next steps.

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