8. DOES CLIMATE CHANGE INFLUENCE MIGRATION? A COMPARATIVE ANALYSIS FOR CHINA AND INDIA[1]

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Abstract

In this paper we test international migration from China and India to some important destinations from Organisation for Economic Cooperation and Development. The purpose is to see if, besides economic factors, climate migration has a significant impact on labour migration. Empirical estimation is done by running a Poisson Pseudo Maximum Likelihood Estimator with fixed effects on a balanced panel data. The data are collected for the period of time 1995-2018. Results show that Chinese people are more likely to migrate if carbon dioxide emissions and natural disasters are lower in destination countries. This implies that people migrate due to pull factors rather than push factors in the case of China. For India, no significance neither in origin nor in destinations is obtained for both proxies of climate change. The value of the paper comes from choosing these two countries in particular, which according to World Population Review (2020) and EM-DAT (2018) are the most affected of climate change countries from Asia. The originality comes from including climate change proxies alongside with economic factors and also from adding dummy variable such as common spoken language which in every case is obtained as being positive and significant. Based on our results, we are able to draw some practical implications of our research. Governments should implement more efficient programs for offering better living conditions for people from areas exposed to a high level of carbon dioxide emissions or high number of natural disasters in order to prevent their emigration. In case of sudden disasters, governments should involve in providing support for resettlements.

Keywords: gravity model of migration, climate change, China, India, PPML, fixed effects

JEL classification: F22, Q59, C23

1. Introduction

Migration is a complex process, and the major drivers are the social, economic and political factors. However, in migration decisions climate change seems to play an important role. Beginning with the early 1990, the relationship between migration and climate change started to be analysed (Backhaus et al., 2015). Having a better life is the main wish of any immigrant all

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over the world, so climate change can be a push factor in the decision to migrate. Meanwhile, better climate conditions can be a pull factor that absorbs people in different countries (Zander and Garnett, 2019).

Recently, Chen at al. (2022), Dasgupta et al. (2022), Garai et al. (2022) tested the migration behaviour influenced by climate change from China and India. We also chose these two countries because they are similar from the perspective of climate change. Recently, migration from these two countries has dramatically increased. Our intention is to contribute to the literature by using an extended version of the gravitational model of migration that captures both economic and climate reasons. Compared with the mentioned studies, in our approach we use as proxy for climate change besides CO_2 emissions, natural disasters. Also, we contribute to the existing literature by analysing at a macroeconomic level the possible push and the pull factors of the decision to migrate, that is economic and climate change factors. Our focus is on climate migration pattern.

This is an up-to-date study for these two countries analysed together in the time period 1995-2018. By taking as main destination countries from Organisation for Economic Cooperation and Development (OECD) which receive high number of Asian immigrants, we also bring value added in the existing literature on China and India. The variables that are used as proxies for climate change, CO_2 emissions and natural disasters are important since the stylized facts encouraged us to pursue such an analysis. According to World Population Review (2020), China is the 1st in the world with the highest emissions and India ranks the 3rd place. Also, natural disasters are meaningful to be used because EM-DAT (2018) classifies India as the first country in the world which is the most affected by natural disasters and China is placed on the 3rd position in the ranking. Over time, the following natural disasters have been registered in China and India: floods, storms, extreme temperatures, landslides, droughts and earthquakes. Any of this natural disaster happens, it ends with a lot of damage in the economy and even with losses of human lives. As a consequence, people may be pushed to leave the affected countries or may be pulled towards other countries which do not experience high CO_2 emissions or where natural disasters are fewer.

The paper is structured in five sections. Section 1 includes the above introduction, section 2 comprises the literature review, section 3 presents briefly the model and describes the data. Section 4 describes the obtained results, while section 5 concludes.

2. Literature Review

Climate starts to be among the major drivers of migration decision, alongside with socio economic and political factors (Zander and Garnett, 2019). Every region will have to deal with climate migration from the perspective of a receiver or a generator of migrants (Harper, 2013). In what follows, we present a review of the most affected regions or countries which were taken into consideration for studying the effects of climate changes in the decision of migration. We present a review of the most affected regions or countries from Asia in terms of climate change.

In Asia, the most vulnerable countries to climate change were studied. The first one is the Philippines. In the last decades a lot of climate changes events have been registered such as increases of temperatures, of sea level and increases of the intensity of typhoons. Actually, the slow disasters like the ones mentioned before or desertification, deforestation and land degradation force people to find a new place to live (Bradley et al., 2013). On top of this, forecasts show that these events will be worse in the future. For the empirical part, there has been applied a linear model, a quadratic model and a lagged linear model and in all cases, it was obtained that climate change influences actively the international migration. A second hypothesis was tested regarding that climate shocks affect migration through income. This was statistically validated only after there were included some non-environmental variables. For example, the

unemployment rate has a positive impact on international migration and education contributes to the decision to migrate internationally.

Zander and Garnett (2020) pursued a research study by comparing the situation in the Philippines with the one in Australia when it comes to drivers of migration from these countries. The focus was more on climate reasons. The motivation for choosing these two countries was that they are exposed to natural hazards due to their geographical position. Moreover, global warming will affect every country on Earth and people have to find solutions to adapt to these climate-related changes. The data used in the study were collected from two online surveys in 2017, one with people who responded from Australia and the other one with people who responded from urban areas in the Philippines. Focusing on non-farming communities helped the authors to differentiate from the existing literature while the impact of climate change for farming households was already addressed in the previous literature. Targeting the urban society is an important favourable factor for applying online surveys. The authors analysed the role of eight natural hazards (sea level rise, heat waves, floods, cyclones, environmental degradation, air pollution, wildfires, earthquakes) in the decision to migrate. Results were different based on country specificity. An important conclusion, for both Australia and Philippines, was that the migration decisions for more than half of the respondents were influenced moderately by natural hazards.

In South Asia, Nepal and India were in the attention of researchers from the perspective of studying the effect of climate changes on migration. In both countries, climate is stressful for people who work in agriculture. Seasonal migration is correlated with climatic fluctuations. When extreme climate events are more frequent, poor women who are from a household with their husbands gone to a foreign country are the most vulnerable to the climate migration phenomenon (Sugden et al., 2014). These results were double confirmed by Gentle et al. (2018) in the case of Nepal. The data were collected by interviews (n=50), 11 focus group discussions (FGD) with 117 participants, and face-to-face household surveys with 133 respondents. The results show that 20 interviewed persons (40%) sustain that they migrate internally and the main factors that contributed to this decision were related to the agricultural production decrease and the scarcity of drinking water and some other non-climate factors. Nine interviewed persons (18%) said that at least one member of the household migrated to another country to work. And over 30% of interviewed persons said that people migrated because of stress caused by the lack of drinking water. Communities from the areas included in the study reacted with traditional measures in front of climatic change, with the mention that they have limited resources to face those problems. Communities from Nepal need improvements in their knowledge on how to adapt to climatic change. We have to mention that, also, in the case of India the same results were found. More precisely, people from Gujarat, an area in India, where the main occupation is in the field of agriculture are affected by climate change. The first method used as an adaptation to climatic change is the passing from a larger stock of animals to a smaller one to easily face the periods of droughts. The second method of adaptation is seasonal migration. The data used in the study were collected through interviews and discussions with focus groups (Venkatasubramanian & Ramnarain, 2018).

A more recent study from South Asia (Bangladesh) double confirms that people who depend on natural resources are the ones exposed to climate change (Garai et. al, 2022). Through a qualitative study made in November-December 2018 and 2019 it has been obtained that the indigenous people (who are dependent on natural resources) protect nature from climate changes by planting trees and building their houses in upper places. Another way to combat this problem is through prayers to God. Indigenous people are a small population group from Bangladesh, and they maintain that the changes in nature are caused by developed countries.

In 2022, Dasgupta et al. also focused on the South Asia area by comparing India with Bangladesh. The main hypothesis from which they started was that poor people are the ones affected by natural disasters. The data were collected in 2000 and 2015 by a household survey and with

geographical data from Socioeconomic Data and Applications Centre. Moreover, even though the two countries chosen are quite similar when it comes to geographical and economic aspects, India and Bangladesh have different policies. The results of the study show that in the analysed countries there are a lot of natural shocks that affect public interventions and, also, the population. But, in Bangladesh public interventions are much lower than in India.

Viswanathan & Kumar (2015) studied in the case of India if people were moving from one state to another or within a state due to agricultural difficulties caused by weather conditions. The data used for the study were state-level data from the interval of time 1981-2001 and district-level data from the period of time 1991-2000. For the empirical part it was a two-stage least squares method and it has been obtained that weather conditions could count as a reason for both moving from one state to another and within a state. In areas where there is no significant difference in agricultural infrastructure, the weather appears to play a significant role in determining people's mobility.

Dallmann & Millock (2017) studied the relationship between climate variability and migration in the case of India. By applying Poisson Pseudo Maximum Likelihood (PPML) estimator it was obtained that climate variability impacts inter-state migration in India through its effect on the net state domestic product and agriculture. Drought effects impact more rural-rural migration rather than inter-state migration.

The East part of Asia was also analysed by starting from the same hypothesis: migration is influenced by climatic changes. To be more specific, China was studied from this perspective. This country has to deal with serious problems when it comes to climate due to the fact of massive industrialization. The air has a big degree of pollution and this generates environmental problems. The model used involves inclusion of a tax and its influence on migration will be studied. Migration depends on relative changes of wages and of medium quality between region of origin and the one of destination. It uses a two-region general equilibrium model. By using a numerical example it has been obtained that people migrate from a region to another which offers smaller salaries but the utility of other facilities will counteract a possible higher salary but in a region affected by climate change (Chao et al., 2015).

Also, Barassi et al. (2018) took into consideration China for their research on climate migration. Even though people migrate mostly because of economic reasons, in China the phenomenon of climate migration is not so new. Since 1980, people have started to move internally because of the rapid and continuous climate change. The dataset was constructed for the interval of time 1987-2015. By applying a PPML estimator and OLS it was obtained that temperature and precipitation increases are push factors for the decision of migration at internal level.

Another study which linked air pollution with migration in China was conducted by Liu & Yu (2020). Data were collected through a questionnaire applied at individual level. The final database contained 94282 temporary labour migrants from 31 Chinese provinces. The results confirm the hypothesis from which they started. The residents will migrate to places with better air quality. Older people, less educated, within-city migrants and rural migrants are less probable to establish in another city because of the air quality.

Chen et al. (2022) came up with a new study in the same geographical area and, also, on the same topic as the authors mentioned before. With data from three intervals of time (1996–2000, 2001–2005, and 2006–2010) and with a hedonic approach it has been reached the following conclusion: the more a city is polluted, the more people will leave that city. Educated people with an average age of 30 - 45 respond to migration to another city when it comes to the degree of pollution. Another specificity that we must mention is that most women migrate due to climate reasons rather than men.

Gray et al. (2020) investigated the impact of climate on migration in the case of China. Applying multinomial logistic regression on data from the interval of time 1989-2011, it has been obtained

that the influence of temperature on permanent migration changed from being positive to negative. This trend is more pronounced for individuals who have received secondary education, reside in rural areas or northern China. There is a similar pattern regarding drought where it initially led to an increase in temporary migration but over time it started to decrease.

Compared with these studies, we add contribution in the related literature by an up-to-date analysis at macroeconomic level for China and India. We use as proxies of climate change CO_2emissions and natural disasters, and we employ PPML. Interesting and useful conclusions are drawn while we stress the push or pull nature of the effects especially in the case of climate change. By focusing in particular on China and India as origin countries, the implications are specific to their patterns of migration. After reviewing the literature, we considered this analysis useful and needed at the same time.

In what follows we present the empirical model section.

3. Empirical Model and Data Description

Throughout a gravity model, there are combined both economic and geographical reasons as generating labour migration (Beine et al., 2021). The assumption behind this theory is that labour migration is determined by the comparison of the expected wage and migration costs.

The size of a country's labour market is determined by its population. The rate of emigration increases with the size of the labour in the country of origin. And if the population of the country of destination increases then the size of the immigrants' labour market will increase. In this regard, we will expect a positive sign from the coefficient of the population variable. When it comes to the coefficient of the distance it should have a negative value. Distance can be used as a proxy for the cost of mobility and an increase of the distance between two countries will theoretically discourage migration between them.

Due to the abundance of factors that can influence migration patterns, relying only on the fundamental equation of the gravity model is likely to result in a biased representation, as certain relevant variables may be left out. To address this issue, researchers have incorporated additional variables into the fundamental gravity model. In this sense, we use an augmented version which states that besides the factors from the basic version of the model, we must include the climate and economic factors which affect labour migration (Khamis & Li, 2020; Abel et al., 2019). According to the labour market theory of immigration, a higher per capita income in the origin country decreases the emigration rate while a higher per capita income of the destination country increases the immigration rate. So, the coefficient of the GDP per capita in the origin country should have a negative value and the coefficient for the same variable for the destination country should be positive. The unemployment rate should have a positive value in the origin country and a negative value in the destination country. Concerning the climate change proxies chosen by us (CO_2 emissions and natural disasters), if they increase in the origin country they should determine people to emigrate abroad (push factor) and a decrease of the climate change proxies in the destination country will increase migration (pull factor). Thus, the coefficient of climate change proxied by CO_2 emissions and natural disasters should be positive in the origin country and negative in the destination country.

The gravity equation can be estimated with different methods. There are benefits and drawbacks to every method. Certain methods address issues such as heteroskedasticity and the zero problem, while others solve the problem of multilateral resistance.

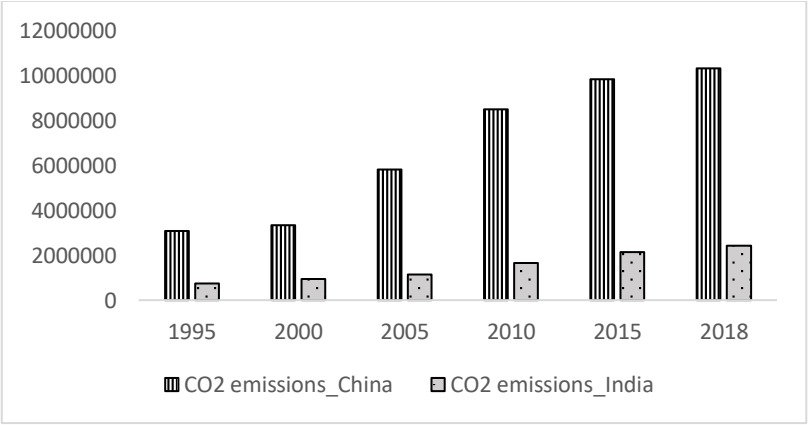
To estimate the gravity model, the conventional method involves using a logarithmic-linear equation and estimating it through the ordinary least squares technique (OLS). Using OLS can present an issue when there are no flows between the origin and destination country. An advantage of Poisson Pseudo Maximum Likelihood estimator (PPML) estimator with fixed effects

is that it can account for biased created by "missing zeros" in country pairs. Another benefit of PPML with fixed effects is that it can handle the heteroskedasticity in the error term that occurs in the logarithmic form of the gravity equation. This is an improvement over the OLS estimator (Beine et al., 2016). Moreover, PPML with fixed effects account for characteristics of country-pairs.

In what follows, we present a description of the data used. For analysing climate migration marginal effect, we consider first China as origin country and for destinations we take OECD countries, where there is a large number of Chinese emigrants[4]. For the second case, we take as origin country India and as destinations we also include main destination countries from OECD[5].

We show some main destinations for Chinese and Indian people starting with the year 1995 till 2018. In Figure 3 (see Appendix) we have destinations from OECD for Chinese emigrants. We can observe that along the interval of time taken into consideration, the highest number of emigrants from China were registered in Japan, Korea and the United Kingdom. Figure 4 (see Appendix) captures the destination from OECD in the case of Indian emigrants. For them the following countries are the most preferred when it comes to migration: United Kingdom, Germany and New Zealand.

Figure 1. Evolution of CO2 emissions from China and India.



(Source: Own representation using World Bank database)

In the period analyzed (1995-2018), there exists a positive evolution of the CO_2 emissions for both countries taken into consideration as origins: China and India (see Figure 1). This fact encourages us to perform the study of the influence of climate change proxied by CO2 emissions on migration.

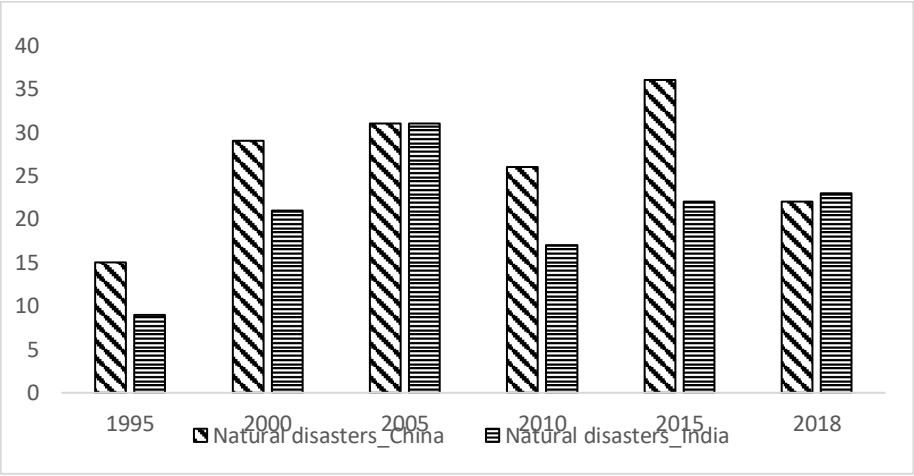
Regarding the evolution of the number of natural disasters for China, we can observe in Figure 2 a general positive evolution in the period 1995-2018, with a peak value in 2015. In the case of India, the highest number of natural disasters was registered in 2005, reaching a value of 31

[4] Based on data availability we included as destinations the following countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Italy, Japan, Korea, Luxemburg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom

[5] Based on data availability we included as destinations the following countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Italy, Korea, Luxemburg, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden and the United Kingdom

disasters. After this period the number of natural disasters decreased to 17 disasters (in 2010). And in the next years the number of disasters increased, being relatively constant until 2018.

Figure 2. Evolution of number of natural disasters from China and India.



(Source: Own representation using data from EM-DAT)

We constructed a balanced panel database which is consisted of the number of emigrants from origin to destination country, the size of the countries measured by population, the costs of transportation proxied by the distance between countries, environmental changes proxied by CO_2 emissions and the number of natural disasters, some economic variables such as gross domestic product per capita, unemployment rate and dummy variable such as common spoken language (csl). Common spoken language is a measure that captures if at least 4% of the population of two countries speak the same language. All data were extracted from OECD, World Bank, Globe Feed, EM-DAT and CEPII for the interval of time 1995-2018 according to data availability. According to Khamis & Li (2020), a PPML with fixed effects is suitable to be applied on these data to avoid the heteroskedasticity problems and the presence of null values for migration.

$$Migration_{ijt} = \beta_0 + \beta_1 lnpop_{it} + \beta_2 lnpop_{jt} + \beta_3 lndistance_{ijt} + \beta_4 lnclimate\_change_{it} + \beta_5 lnclimate\_change_{jt} + \beta_6 X_{it} + \beta_7 X_{jt} + \beta_8 Y_t + \nu_i + \Upsilon_t \quad (1)$$

where $Migration_{ijt}$ – number of emigrants

$lnpop_{i(j)t}$ – logarithm of population from origin country "i" or destination country "j"

$lndistance_{ijt}$ – logarithm of the distance between country "i" and country "j"

$lnclimate\_change_{i(j)t}$ – logarithm of the environmental changes proxied by CO_2 emissions (in the first model) and by natural disasters (in the second model) registered in country "i" or country "j"

X_{it} , X_{jt} – logarithm of GDP per capita and unemployment rate from both origin and destination countries

Y_t – dummy variable: common spoken language (csl).

ν_i – origin country fixed effects

Υ_t – time fixed effects

4. Empirical Results

In the case of China, distance and the population in destination country have the expected signs and they are significant. Larger population in destination will imply a larger labour market for immigrants. If there is proximity with the destination countries, the flow of immigrants increases. In what concerns our variable of interest, climate change measured by CO_2 emissions, it is negative and significant for the destination country. So, the emigration level from China will increase if the level of CO_2 emissions in the destination country is low. This fact means that there is a pull factor for people who migrate from China, they are not pushed by climate reasons from China, but they are attracted by better conditions in destination countries. GDP per capita of the destination country is positive and significant which is expected, and it means that people again are pulled towards destinations with higher economic growth indicator. There is one push factor and that is unemployment, since the unemployment rate in China has a positive and significant coefficient. When the unemployment rate is higher in China, the emigration level increases. The sign of common spoken language (csl) coefficient is positive and it is significant. If in the destination country at least four percent of the population speak a language that is used in the origin country, then it will increase the emigration level from China. This is very related with our observation of the data in the stylized fact paragraph (Figure 1 in section 3.3) that people mostly migrate towards Japan (among other main destinations) and this may be due to the closeness of language, besides proximity and economic growth variable.

Table 1. Results of the gravitational model for China and India. Proxy for climate change: CO_2 emissions

Variable	*Results for China*	*Results for India*
Lndistance	-2.071218*** (0.1899838)	3.117115*** (0.2265386)
lnpop_origin	-2.196987 (8.802289)	8.102761 (6.198997)
lnpop_destination	1.71385*** (0.0694094)	1.21342*** (0.1009122)
lnCO_2_origin	0.1885238 (1.034283)	-1.350443 (1.079853)
lnCO_2_destination	-0.4237576*** (0.0373094)	-0.0502704 (0.0874)
lngdppc_origin	-0.5151222 (1.153512)	0.4863054 (0.3968588)
lngdppc_destination	1.822059*** (0.2336008)	0.002309 (0.075505)
unemployment_origin	0.687964*** (0.1271198)	0.8932691 (0.8658796)
unemployment_destination	0.0089411 (.0170015)	-0.062182*** (0.0114087)
Csl	137.1376*** (24.35074)	9.290879*** (0.9495168)

Variable	*Results for China*	*Results for India*
C	27.62292 (188.2682)	-391.7609*** (96.3206)
Pseudo R2	0.9301	0.8782
Observations	600	432

*Notes: Standard Errors in parentheses; *** p-value<0.01*
(Source: Authors'own calculation using STATA)

Regarding India (see Table 1) we obtained that the coefficient for distance is positive and significant. Looking also at the common spoken language we found it positive and significant. This may imply that people from India emigrate to United Kingdom (Figure 4 in the Appendix confirms this fact) as an English-speaking country which is far away from India, thus the opposite results for distance that we obtained. Population in destination is positive and statistically significant, which is expected and comes as a pull factor. It is the same case for GDP per capita. However, our variable of interest, i.e. CO_2 emissions, is not significant in origin and destination. As an explanation, we may assume that people in India may be affected by liquidity constraints and are more likely to migrate due to economic factors rather than climate change factors. In what concerns unemployment rate, we found that it is negative and significant in the destination, as expected.

In what follows we used as a proxy for climate change the natural disasters from both the origin and destination countries. In Table 3 we present the results. For China we obtained that the natural disasters in destination have a negative and significant coefficient. This means that if less disasters occur in the destination, more people from China will emigrate. In the case of India, natural disasters do not matter in the decision to migrate. Again, for the case of India we may invoke as a reason for non-significance in the case of climate change variable, the liquidity constraints issue. There are some interesting results in terms of economic factors. When natural disasters are included in the model it seems that people from China may emigrate even in countries with high unemployment rate, but with higher gross domestic product per capita. In India they may go even from higher GDP per capita to a destination with lower level of unemployment. This is an interesting pattern of migration that needs more research regarding the interplay between natural disaster and economic factors which is beyond the scope of the present paper.

Table 2. Results of the gravitational model for China and India. Proxy for climate change: natural disasters

Variable	*Results for China*	*Results for India*
Lndistance	-2.981953*** (0.1854029)	3.154191*** (0.2294159)
lnpop_origin	5.744015 (5.757125)	1.029102 (2.329258)
lnpop_destination	1.102901*** (0.0501186)	1.165711*** (0.0420645)
natural_disasters_origin	0.0033519 (0.0064921)	-0.0022758 (0.0076358)
natural_disasters_destination	-0.0560618*** (0.0130948)	0.0013593 (0.0284868)

Variable	*Results for China*	*Results for India*
lngdppc_origin	-0.4704604 (0.3743897)	0.8142243*** (0.3034761)
lngdppc_destination	1.329934*** (0.2234476)	0.0040337 (0.0770618)
unemployment_origin	0.555081*** (0.1268739)	1.152675 (0.86427)
unemployment_destination	0.0386249** (0.0153983)	-0.0674047*** (0.0122062)
Csl	159.9221*** (30.30327)	9.071173*** (0.9078185)
C	-117.8335 (117.8265)	-70.22065 (50.95133)
Pseudo R2	0.9158	0.8774
Observations	600	432

Notes: Standard Errors in parentheses
*** p<0.01, **p-value<0.05

(Source: Authors'own calculation using STATA)

5. Conclusions

In this paper, we added to the existing literature new results for two important countries (China and India) with serious problems of climate change. We chose these countries for analysing climate migration topic because both have to face similar problems when it comes to climate change. The statistical reports we consulted showed us for both countries that CO_2 emissions and natural disasters we used as proxies for climate change classify China and India among the first countries affected. When we carried out estimations, we obtained for China a negative and significant coefficient for CO_2 emissions and natural disasters in destination which mean that people seek to find better conditions when they migrate in terms of clime. Pull factors (climate change factors) are important in the decision to migrate in the case of Chinese people. Economic factors seem to matter mostly in the expected ways. Compared with China, in India we obtained no significant results for the climate change proxies. One possible reason why Indian people doesn't consider climate change when they migrate is that the majority of population cannot afford to migrate based on this reason due to liquidity constraints. We showed that for Indian people economic factors such as unemployment rate and GDP per capita could have an impact in the decision to migrate. However, our main interest relied on climate change factors that is why the policy recommendation is made from this point of view.

An important recommendation for policymakers is that they should consider the climate reasons when it comes to migration. Seeking for better conditions is due to the fact that people may be afraid of what could happen if a disaster would occur or if CO_2 emissions would affect their health. Governments should develop more programs to help people from areas exposed to a high level of carbon dioxide emissions in order to decrease the level of emigration. For example, the government should give funds to people to create an appropriate green environment in the most polluted cities (more trees in cities or green spaces on the rooftop of buildings). If a disaster dramatically affects an area and people cannot remain in their homes, then resettlement may be

necessary. The government should provide support for people to relocate. Also, climate migration policies such as access to social services, healthcare and education should be developed.

We are aware of the limits that the present paper has. We could have proxied the climate change with other variables, but this wasn't possible due to data availability. As further research, an analysis at micro level can be employed using interviews, in this way being able to account for the types of migration (based on duration criteria or based on reasons such as climate change, economic, political, and/or social factors). It will be useful to see if results at household level remain the same. Building an empirical model which arises from a solid theoretical foundation both at micro and at macroeconomic level is another strand of future research that it is required.

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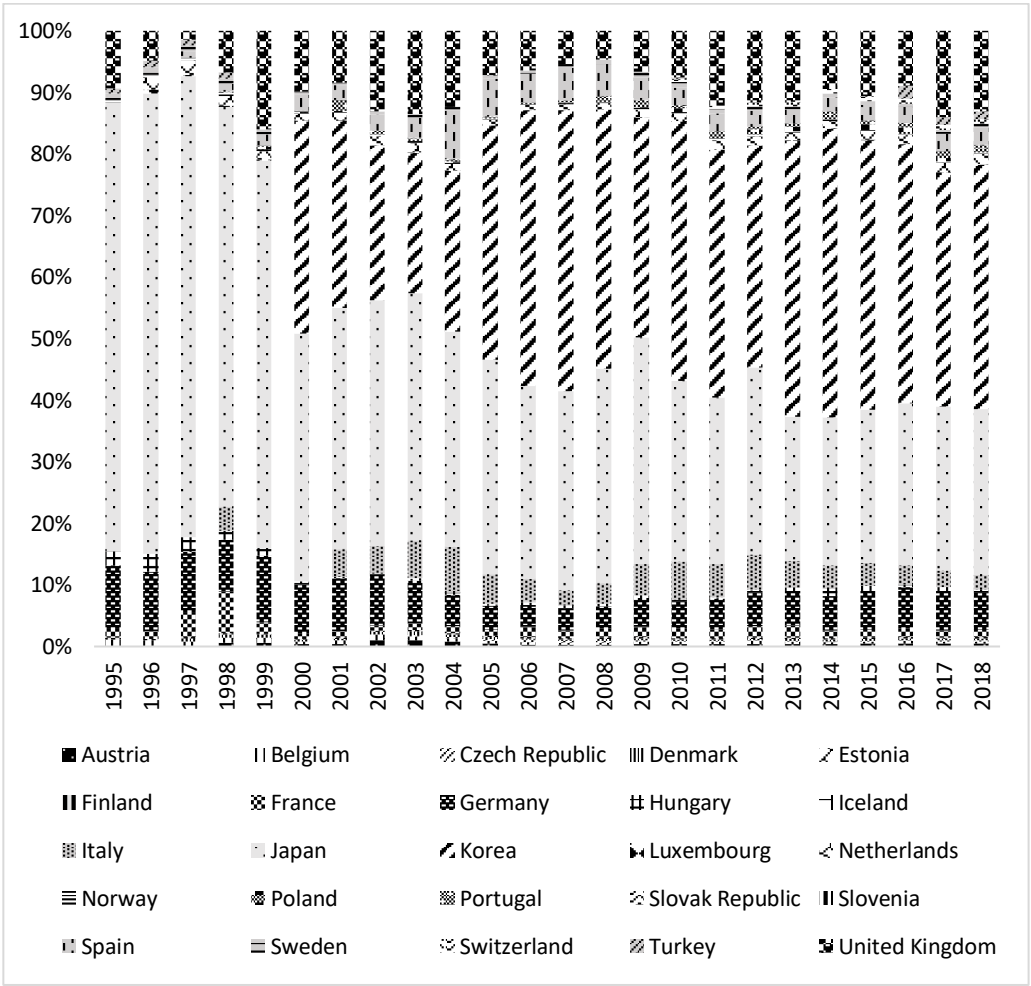
Appendix

Figure 3. Chinese emigrants to OECD destination countries



(Source: Own representation using OECD databas

Figure 4. Indian emigrants to OECD destination countries

(Source: Own representation using OECD database)