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Declaration regarding the content:

I hereby declare that this document is exclusively my and nobody else's work. Content which has not been elaborated by me is explicitly marked as such and the respective source is given.

Acronyms

EU	-	European Union
GDP	-	Gross Domestic Product
OECD	-	Organization of Economic Cooperation and Development
ILO	-	International Labour Organization
IMF	-	International Monetary Fund
NELM	-	New Economics of Labor Migration
UN	-	United Nations
UN DESA	-	United Nations Department of Economic and Social Affairs
GUS	-	<i>Główny Urząd Statystyczny</i> (Statistics Office Poland)
IMS	-	International Migration Statistics
SOPEMI	-	<i>Système d'observation permanente des migrations</i> (OECD's continuous reporting system on migration)
DEMIG	-	Determinants of International Migration (database)
IMI	-	International Migration Institute
EFI	-	Economic Freedom Index
HDI	-	Human Development Index

Abstract

The core problem this thesis recognizes is that there is research to be done in the field of migration in order to fully understand migration movements in the European Union, especially, in the economic field. Its objective therefore is to find economic determinants which influence migration movements and, on this basis, find areas in which policymaking would therefore be recommendable in order to regulate migration movements. The method applied in the context of this research is first a literature review to identify where current research in this field stands and to find suitable variables to include in the multiple hierarchical regression analysis which is performed in order to identify relevant economic determinants. The results show that the GDP per capita has a strongly positive relationship with migration and the unemployment rate has a negative causal relationship with the net migration rate, however, no clear relationship with the migrant stock could be found. All other economic factors included as explanatory variables showed medium to no causal relationship with the dependent variables. Possible policymaking measures should therefore focus on the GDP per capita and partly the unemployment rate when structuring the economic part of such a policymaking. Other economic factors can partly be included, however, they would have a smaller effect on migration than the mentioned factors.

Abstrakt

Im Rahmen der Vorbereitung dieser Masterarbeit wurde erkannt, dass weitere Forschung im Bereich der Migration, besonders im ökonomischen Bereich, nötig ist, um Migrationsbewegungen in der Europäischen Union vollständig zu verstehen. Das Ziel dieser Arbeit ist es daher, ökonomische Determinanten zu identifizieren, die Migrationsbewegungen beeinflussen, um auf dieser Grundlage politische Bereiche zu finden, in denen eine entsprechende Strategieplanung Migrationsströme beeinflussen kann. In dem Kontext dieser Forschung wurde eine Literaturanalyse durchgeführt, um den aktuellen Stand der Forschung zu identifizieren und um geeignete Variablen für die multiple hierarchische Regressionsanalyse zu finden, welche angewendet wird, um entsprechende ökonomische Determinanten zu identifizieren. Die Ergebnisse zeigen eine starke positive Kausalbeziehung des BIP pro Kopfs mit Migration. Die Arbeitslosenquote besitzt eine negative Kausalbeziehung mit der Nettomigrationsrate, jedoch konnte keine eindeutige Beziehung mit der aktuellen Anzahl an Migranten in einem Land gefunden werden. Alle anderen ökonomischen Faktoren, welche als unabhängige Variablen eingeschlossen wurden, zeigten eine mittelstarke bis keine Kausalbeziehung mit den abhängigen Variablen. Eine politische Strategieplanung aus ökonomischer Sicht sollte sich daher auf das BIP pro Kopf und teilweise auf die Arbeitslosenquote konzentrieren. Andere ökonomische Faktoren können teilweise eingebunden werden, jedoch würde ihre Auswirkung auf Migration geringer ausfallen.

1. Introduction

This Master's Thesis has been written at the University of Vienna at the Institute of Development Studies. Its core subject is the international migration within the European Union (EU). The freedom of mobility within the EU is guaranteed by the Schengen area. The original purpose of this area was "to enable the European working population to freely travel and settle in any EU state"¹. This matter will be looked at from an economic perspective. Economic determinants are definitely not the full picture of why people migrate, but this thesis aims at covering the economic aspect knowing that there are other factors as well. Examining every possible dimension of every aspect of life in the context of migration would go beyond the scope of this thesis. In the subsequent pages an overview of the thesis will be given. It will include the relevance of the topic, the actual objective of the thesis, the specific research questions which will be addressed and the thesis structure.

1.1. Relevance of the topic

Understanding international migration gives knowledge about why people migrate from one country to another. This is important in order to understand whether people are forced to leave the country where they currently live – push factors would be the main drivers in such a case – or whether they are attracted to a country elsewhere – the main drivers in such a case would be pull factors.² This again helps to understand which factors make a region attractive to live in and which ones make it rather unattractive. The respective knowledge can support policymaking for increasing the regional standard of living while knowing how to prevent factors which promote a depreciation of the standard of living.

Furthermore, heavy social discrepancies and challenges of co-living can arise from migration as can be seen in the years just after 2015 where strong migration movements took place. So, a proper policymaking is crucial. Such a policymaking has the task to regulate migration flows in a way that a certain standard of living and as little social discrepancies as possible are ensured. Also, further research in this field is needed since it is such a complex matter as this thesis shows at a later stage. It is because of these reasons that further research in this area is necessary in order to find ways to give a manageable structure to migration

¹ European Commission (2013): https://ec.europa.eu/home-affairs/what-we-do/policies/borders-and-visas/schengen_en (accessed: February 26, 2020, 11:53 am)

² Compare theory of push and pull factors, from page 6 of this thesis

processes. Such a structure, or regulatory framework, should strive to have the ability to deal with those challenges of co-living.

1.2. Objective of the thesis and research questions

The goal of this thesis is firstly to find out where current research stands with regard to finding reliable data on which economic factors influence international migration within the EU the most. Thus, it aims to generally understand international migration from an economic standpoint. Secondly, examine further and identify which economic determinants specifically have an influence on EU citizens migrating to another EU country. Results of such research might give means for regulating migration from an economic perspective. Further objectives are to give a strong empirical basis for the relevant economic determinants in order to underline their importance and to find suitable areas for policymaking on the basis of the empirical results.

In order to achieve the given objectives, the corresponding research questions are stated as follows:

What are economic determinants of international migration within the EU?

On the basis of the found economic determinants of migration, on which areas should policymaking focus in order to be able to regulate migration flows?

In the following paragraphs these research questions are further explained in detail by stating relevant sub-questions first with regard to the first given research question and subsequently with regard to the second research question.

A basic question in the context of finding economic determinants of international migration is where current research stands. This question is answered by conducting a literature review. Relevant tables in this thesis give an overview of important insights in this context. Current research is looked at by asking the question of how many different and which specific determinants have been examined so far. At this point of the research for this thesis the question becomes relevant of whether or not a hypothesis can be formulated, and which determinants are chosen to be further examined. Following the literature review, the correlation analysis settles for which determinants are further examined in the regression analysis and

answers whether or not a correlation exists between the defined economic determinants and the specified migration data. The final sub-questions with regard to the first research question further examine the correlations between the economic determinants and the migration data asking whether or not proof for a causation can be found, whether a possible causation is positive or negative and for which exact determinants a causation becomes evident and what the proof for this is.

With regard to the second research question the first sub-question refers to choosing an identified economic determinant and then asking what the migration action is it causes. Which measures in the context of policymaking influence this economic determinant and in what way do those measures influence this economic determinant? Are there sub-measures to those measures which have to be considered in order to be able to regulate the migration action via this economic determinant? Based on the answers to these questions, a decision in policymaking can be made.

1.3. Thesis structure

The thesis is structured into three parts. The first one is the theoretical framework, the second the empirical analysis and the third the conclusion. The theoretical framework starts off with the methodology used during the research. It will step by step demonstrate why the specific methods have been used and what their purpose is with regard to achieving the stated objectives for this thesis. Subsequently, the theories used during this research will be explained. This part starts off with definitions of the used technical terms. Afterwards that chapter explains in detail the theories which are the theoretical ground of the research for this thesis. The explanation of theories is structured into two parts. The first one covers the migration aspect of the theories and the second one the economic aspect. Both parts are again structured in macro-level theories and micro-level theories. After having covered the relevant theories, the literature review will follow.

As a subsequent step after the theoretical framework the empirical analysis starts with descriptive statistics in order to give a first picture of the data included in the analysis. In this section the economic determinants are picked out which are used in the correlation analysis. After the correlation analysis the research goes into the regression analysis which proves or disproves causation. The empirical results will then state the outcomes of this analysis.

Based on the outcomes the last chapter gives the according conclusion. It includes findings of the research in a structured summary. Furthermore, recommendations are given as well as limitations and implications for research and practice.

2. Theoretical backgrounds

The theoretical framework for the thesis will be structured into two areas. At first the methodology is explained which states why the specific methods are used. Subsequently, the theories necessary for the research are explained, first the theories of migration and secondly the economic theories.

2.1. Methodology

The basis for this thesis is a pool of thirty scientific articles which themselves represent research on which economic determinants might have an influence on migration flows. A literature review has been carried out on this pool of articles analyzing them first on what economic determinants they cover. An overview here is given in form of relevant descriptive statistics. On the basis of this literature review it is decided which determinants are examined further. The articles are also examined on which migration data they use. Having identified specific economic determinants and relevant migration data a correlation analysis is carried out in order to find a possible correlation between the two data sets.

After having found correlations between the economic determinants and the migration data the two are examined on to what degree they underlie a causation and if so, which form of causation that is. It is important in this part of the thesis to give fundamental proof. This is carried out by the means of a regression analysis. It includes multiple stages of regression which are, in the first stage, the null model containing no explanatory variables, the sub-models each containing one explanatory variable and the full model containing all the variables included in the analysis. This way of execution is used in order to reach a higher certainty in the precision of the results.

Up until this point of the thesis the research is focused on the connection between economic determinants and migration flows. What follows in order to answer the second research question is a substantiated conclusion based on the empirical analysis which focuses on what measures in the context of policymaking can be taken in order to regulate migration.

2.2. Relevant migration theories

At first, a definition for migration is given. Subsequently, explanations of migration theories follow, such as the principle of push and pull factors, the migrant networks and social capital as well as the relative deprivation theory. This sub-chapter serves to give the theoretical basis with regard to the migration aspects of this thesis.

Migration can be defined as the movement of people which comes along with a change of the center of one's life. The condition here is a constant stay in a different location. Since this thesis covers international migration only, such migration will be relevant where this new location is in a different country. Important, however, is that short-term stays are excluded and, thus, not part of any migration movement.³

2.2.1. Push and pull factors

The push-pull-theory was first formulated by Lee, E. (1966) and the following explanation of it is based on the theory as he stated it. It can be structured into two parts which are the push and the pull factors. They can be understood in a geographic sense that potential migrants can be physically drawn to certain places or pushed away from certain places due to the prevalent circumstances. A basis of this theory is the model of the homo economicus. According to the Oxford reference the homo economicus is a "rational agent" who "when given options he chooses the alternative with the highest expected utility for himself".⁴ So in the context of migration Lee's push-pull-model uses the potential migrant as such an agent who is constantly weighing up in which geographic location they can maximize their advantages and minimize their disadvantages. Certain costs of migration have to be added to this calculation which is why light push and pull factors might not immediately lead to a person migrating to another country.⁵ In the following push factors are explained further in detail and subsequently the same is done for pull-factors.

³ Treibel, A. (2001): "Migration", in: „Handwörterbuch zur Gesellschaft Deutschlands“, 472-481.

⁴ Oxford Reference (2020):

<https://www.oxfordreference.com/view/10.1093/oi/authority.20110803095943203>

(accessed: September 23, 2020, 12:43 pm)

⁵ Lee, E. (1966): "A Theory of Migration", in: Demography, 3/1, 1966, 47-57.

People can metaphorically be pushed away from one place to another. This means that rather negative conditions prevail in the current place of residence of people in one country. Whether these current conditions are negative or not depends on subjective perception and comparative perception. Regarding the subjective perception it can be stated that some people might strive for a high-end lifestyle and seek high wages in which case low wages might be unattractive to them whereas people who are content with a more simplistic lifestyle might not be pushed away easily because of a low wage. On the other hand, there is the comparative perception. The economic, political, etc. situation in the relevant person's current country of residence must be compared to a possible target country in this case. The situation in the current country of residence might be unfavorable, but the circumstances in the possible target country might be even less favorable. However, it is exactly the other way around these negative conditions will make them less motivated to stay in the current place and in that sense metaphorically pushes them away from this geographical area. Push factors can be of economic or political nature among others. Examples for the former are high unemployment, low wages, high taxes and examples for the latter are war, violations of human rights and discrimination.

People can metaphorically be pulled towards a different place than their current place of residence. This means that rather positive conditions prevail in another place in another country than the current place of residence. Whether current conditions are positive or not depends on the subjective or the comparative perception as described earlier. These positive conditions make them more motivated to move to that new place and metaphorically pulls them towards this geographical area. Pull factors can be of economic or political nature among others. Examples for the former are high employment, high wages, low taxes and for the latter peace, strong protection of human rights and inclusion in society.

2.2.2. Migrant networks and social capital

In a first step the social capital theory is explained and subsequently the same is done for the migrant networks connecting it with the concept of social capital. Lin defines social capital as follows.

“The premise behind the notion of social capital is rather simple and straightforward: investment in social relations with expected returns in the marketplace.”⁶ (Lin, N., 2001)

Lin then adds four points about what expected returns of social investment might look like. Those four points are access to information, influence on agents, social relationships as social credentials and reinforcement of identity and recognition. Access to information refers to if someone has social connections to a certain place they get easier access to local information compared to other geographic areas; this might be information on what the local life is like and what might be necessary or important to have or fulfill in order to live there and, hence, it is easier to make a decision whether moving to this place is worth it or not. With access to the right information a reduction of transaction costs might be the consequence. Influence on agents refers to social connections in a possible target location which can recommend the potential migrant at a known workplace, thus, increasing job opportunities. With increased job opportunities transaction costs might be buffered more easily. Social relationships as social credentials generally refers to easier access to different kinds of resources and reinforcement of identity and recognition means emotional support and public acknowledgement.

Having a network means having social capital. What the theory exactly means will be explained in the following. Light, E. / Bhachu, P. / Karageorgis, S. define the migration network theory as follows.

“Migration network theory addresses the cumulative causation of migration as a result of reduced social, economic, and emotional costs of migration pursuant to the formation of migration networks”⁷ (Light, E. / Bhachu, P. / Karageorgis, S., 1989)

Migration network theory thus implies that potential migrants have lower costs of migrating to a place where they already have a network meaning they have a certain social capital where they have such a network. So, if a certain number of people from a potential migrant's country of origin already have moved to the same place abroad, the potential migrant is likelier to go there as well due to the stated reasons which give a higher security of an income, social connectedness, etc. Speaking with the terms of the push and pull factors theory the potential

⁶ Lin, N. (2001): “Social Capital – A Theory of Social Structure and Action”, 19-20.

⁷ Light, E., Bhachu, P., Karageorgis, S. (1989): “Migration Networks and Immigrant Entrepreneurship”, in: Volume V. 1989-1990 – California Immigrants in World Perspective: The Conference Papers.

migrant is metaphorically pulled towards the country where they already have a migrant network and, thus, social capital.

2.2.3. Relative deprivation theory

The concept of relativeness represents the estimation of one's own position compared to the position of other people. An example can be the salary. The own salary can be more than enough to finance a decent living, but if one sees that other people have a tremendously higher salary, a feeling of dissatisfaction or unfairness might come up.

The concept of relative deprivation goes back to Walter Runciman. It states that an individual is deprived of certain factors in their life compared to other people in the same society. This concept is about individual perception and not about absolute measurements. If a person perceives themselves as deprived of major factors in their life, satisfaction will decrease and the motivation to migrate will grow. Runciman gives the following four preconditions for an individual perception of relative deprivation.

- 1) Person A does not have X.
- 2) Person A knows of other persons that have X.
- 3) Person A wants to have X.
- 4) Person A believes obtaining X is realistic.

If these four preconditions are met and person A does not obtain X, the probability of person A to migrate to another country will increase.⁸

2.3. Relevant economic theoretical background

In the neoclassical model of migration, the most important factor is the marginal product of labor (MPL). Is the marginal product of labor higher than the level of wages there is an incentive for employers to hire more personnel. On the other hand, if it is lower than the level of wages there is an incentive for employers to let personnel go in order not to end up in the red numbers in their calculations. Is the marginal product of labor equal to the current level of wages

⁸ Runciman, W. (1966): "Relative deprivation and social justice: a study of attitudes to social inequality in twentieth-century England"

employers are indifferent whether personnel are hired or let go because it makes no difference in the calculations of the business result. The MPL decreases with additionally hired personnel. Now, two regions are compared – region A and region B. In region A the aggregate sum of MPLs have developed worse in relation to the level of wages, actually falls below the level of wages and is not going to recover any time soon. At the same time in region B the exact opposite scenario happens. Here the long-term trend is an MPL far above the level of wages. Thus, in region B the incentive exists to hire personnel. Now, there is an incentive, a pull-factor, to migrate to region B.⁹

2.3.1. New economics of labor migration

This model further develops the neoclassical model of migration. Instead of the individual being the core of the theory it is the family unit or the household. One person from the household might migrate and the others stay where they are. This can be seen not as an individual's decision to move out but as a strategy of the whole household where costs and gains of migration are shared. This can be seen as a method of risk diversification and a gain in income. This strategy is applied more often in poorer parts of a region. In richer parts of a certain region more decisions are made by individuals because there is social insurance and so they can afford it. In poorer regions, knowing that worst case you don't get anything from the state, you have to insure yourself via your social network, which mostly is the family. That is why decisions are, hence, made together and not on an individual basis. Strategies are made so that everybody of the household or family has a gain in income to a certain degree and a decrease in risk.¹⁰

2.4. Literature review

This literature review is the basis of the empirical analysis because it identifies relevant economic determinants which are chosen to be researched further on their connection with migration. Furthermore, it aims at getting an overview of where current research in this field

⁹ Cuñat, A. (2017): "International environment and economic development", class material chapter 10 on migration

¹⁰ Stark, O. / Bloom, D. (1985): "The New Economics of Labor Migration"

In: "The American Economic Review", May, 1985, Vol. 75, No. 2, papers and Proceedings of the Ninety-Seventh Annual Meeting of the American Economic Association (May, 1985), pp. 173-178

stands at the moment and to find out what possible obstacles might be which could come up during the process of research.

The research starts off with thirty scientific articles which are to be reviewed. Throughout the research some articles might prove to be not eligible for this thesis and again others might be added to the research. This door is kept open so that adaption is possible which supports getting accurate review results. Eightteen articles focus on the region of the European Union and twelve focus on regions outside the European Union. This distinction might give insights on whether there are other determinants in non-EU regions which play a role in the migration topic and have not been considered yet for the EU-region. If this is the case, then research for the EU-region should be broadened. The articles focusing on the EU cover data on the EU as a whole and the twelve articles which cover data outside the EU contain the regions of the OECD, Thailand, New Zealand, Asia, Nigeria, North Africa or cover data on a global scale. Before going into the in-depth review, the following two tables give an overview of which economic determinants are analyzed in the scientific articles included in the review.

Analyzed economic determinants in the articles	European Union	Other world regions
<i>Inequality in prosperity</i>	2	3
<i>GDP per capita</i>	11	8
<i>Growth of GDP p. c.</i>	4	-
<i>Unemployment rate</i>	17	6
<i>Growth of unemployment rate</i>	1	-
<i>Income opportunity</i>	8	6
<i>Household income</i>	1	-
<i>Human capital</i>	1	2
<i>Economic Freedom Index (EFI)</i>	1	1
<i>Cost of living</i>	2	-
<i>Tax revenue-GDP p. c. ratio</i>	1	-
<i>Gov. consumption-GDP ratio</i>	1	-
<i>Investments</i>	2	1
<i>Corruption</i>	1	2
<i>HDI</i>	-	1
<i>Tax level</i>	2	-
<i>Inflation rate</i>	1	-
<i>M2-GDP p. c. ratio</i>	1	-
<i>Poverty proportion rate</i>	1	2
<i>Social protection expenditure</i>	1	1

Table 1 – by the author

Table 1 shows all economic determinants which are covered by the articles included in the literature review. These determinants are all included in the articles' analyses which look for possible effects on migration. The table shows the number of how many articles have included the respective determinants both for the EU and other world regions.

It can be seen that the highest coverage is achieved by two outstanding economic factors which are the GDP per capita and the unemployment rate. This is both true for articles covering the EU in their research as well as for articles covering other world regions.

Determinants in the articles with identified impact	European Union	Other world region
<i>Inequality in prosperity</i>	1	-
<i>GDP per capita</i>	9	3
<i>Unemployment rate</i>	12	3
<i>Income opportunity</i>	4	6
<i>Household income</i>	1	-
<i>Human capital</i>	1	-
<i>EFI</i>	1	1
<i>Cost of living</i>	1	-
<i>Tax revenue-GDP p. c. ratio</i>	1	-
<i>Gov. consumption-GDP ratio</i>	1	-
<i>Investments</i>	1	-
<i>Corruption</i>	-	2
<i>HDI</i>	-	1

Table 2 – by the author

Table 2 is the result of table 1 when merely keeping those determinants which have a proven effect on migration according to the results of the respective articles' analyses. It can be seen that the number of determinants shrinks from twenty to thirteen. So, there are seven determinants which were not identified by any of the included articles to have an effect on migration. These determinants are tax level, inflation rate, M2-GDP per capita ratio, the poverty proportion rate and social protection expenditure. Growth of GDP per capita and growth of the unemployment rate is left out in the second table due to their interconnectedness with the GDP per capita variable the unemployment rate variable respectively.

It can be seen that fifteen articles have identified an impact of the unemployment rate on migration and twelve have identified an impact of the GDP per capita on migration. Income also shows up as a factor influencing migration showing an effect in ten out of fourteen researches.

The following two sub-chapters cover the articles in more detail. At first, the articles regarding migration within the EU are reviewed and subsequently the same is done for the articles regarding other world regions.

2.4.1. Economic determinants of migration in the European Union

For the region of the EU a total of eighteen scientific articles is taken into the research of finding economic determinants with a causal connection to migration. All articles somehow try to find factors which cause migration and which factors tend to hinder it. An overview of the results of the literature review regarding the European Union can be found in table 3.

There are multiple time spans covered by the articles in the range from 1950 to 2018, some having a range of several decades and some with a range of shorter than one year. There are more current ones like the article by Franc/Barišić/Čeh Časni which has been published in 2019 and older ones have also been included like the article by Jennissen from 2002. The wider range of the articles included is to make sure that multiple approaches are covered and taken into consideration.

The methodologies of the articles include a broad variety of approaches, among them regression analyses, literature reviews, data evaluations, weight matrices, panel data analyses, surveys, comparative analyses, k-nearest neighbor algorithms and heteroskedastic models. The most common method used, however, is the regression analysis due to its ability to prove causation most precisely compared to the other methods mentioned. Still, what kind of regression is applied differs again. What becomes evident in the literature is that a single regression is not sufficient if the goal is to actually prove a causation of a set of given determinants with regard to migration. The reason for this is that migration is complex and cannot be explained by one mere variable. So, a multiple regression becomes necessary. On top of that the regression needs to be hierarchical because otherwise it is not possible to control for a certain set of non-economic variables. Concludingly, the method of a multiple hierarchical linear regression analysis as pointed out in the methodology section of this thesis is confirmed as the most suitable method in order to achieve the stated goals.

The articles give numerous sources of the data they use in their analyses. Without exception all of them use data from international organizations like the UN DESA, World Bank, Eurostat, OECD and the like. The researchers mention the advantage of not having to collect all the data from the single countries by themselves, but have those international organizations doing it for them and on top of that the data from all countries underlie the same process so it becomes comparable. During the research Eurostat is found to be a rather unclear tool for getting comparable data for the sake of this research which is why the data is taken without exception from the UN and the World Bank. The researches represented by the included articles have a scope of a couple of thousand data points which are evaluated, thus, they are

large studies having been conducted. This thesis covers a couple of hundred data points. This makes it clear that the reviewed articles are more precise in their results.

The theories used throughout the literature stays mostly similar and only a small number of articles try to bring in different approaches and different perspectives. The theoretical foundation of neoclassical macroeconomics is included in every article and also the human capital theory is a popular approach. One article, Jennissen (2002), in addition to the neoclassical theory of migration includes the Keynesian theory as well.

After having gotten an overview of the articles it is now time to further analyze the determinants covered by them, thus comparing key findings and elaborating a foundation on which to decide which determinants can be used later on in the empirical analysis. As a first step table 1 and table 2 are compared. Table 1 lists all determinants which are covered by the articles, for the EU as well as for other world regions. Table 2 gives a reduced enumeration of determinants. Those are the factors which have found to be having an effect on migration. It can already be seen in the first table that the unemployment rate and the GDP per capita are covered by the articles significantly more often than all other determinants. One reason for this is that more data exists for these two factors than for the others given in the table. Unemployment and GDP have been documented for decades in many countries whereas the other factors might have been documented by some countries, but not the majority and possibly less frequently and less consistently.

Another reason for this could be that unemployment and GDP actually are more linked to migration than the other factors listed in the tables. Table 2 could be an argument for this statement since it shows that these two have been found more often to have an influence on migration than the other factors. On the other hand, these two factors are biased in the sense that a greater number of articles have included them in their analysis in the first place. So, a clear statement on whether or not unemployment and GDP have a more significant impact on migration than the other given factors cannot be formulated at this point, but seemingly they are variables to be included in the empiric analysis based on this ground.

Possible shortcomings of the articles analyzed might include a certain bias when it comes to how included variables are chosen. Some articles, as is the case in Hadler (2006) for instance, state which variables are included in the analysis, however, they do not give an explanation on why those variables were chosen. This might result in a situation where other possibly relevant variables could be left out, thus, giving an inaccurate picture of reality.

Author(s)	Time period	Methodology	Key findings	Data source	Theories
Hadler, M. (2006)	2001	Three-level regression	With an increasing regional inequality in prosperity the citizens' intention to migrate increases as well. On a country-level scale, however, citizens were more likely to migrate the higher developed a country was. National border are barriers of migration.	Eurobarometer 54.2	Neoclassical macroeconomics, systems theory, migrant networks, social capital
Sprenger, E. (2013)	1998-2010	Negative binomial regression	The influence of economic factors on migration is significant (GDP per capita, unemployment rate).	Eurostat, OECD	Neoclassical macroeconomics, human capital, asymmetric information
Strey, A. / Fajth, V. / Dubow, T. / Siegel, M. (2018)	1998-2018	Data evaluation, literature review	The professional life (employment opportunity, wages) and personal relationships are the two main driving factors of migration. Lifestyle factors (e. g. environment, culture) play a secondary role.	Eurostat, OECD	Neoclassical macroeconomics, new economics of labor migration (NELM)
Pavković, A. / Pejović, N. / Palić, P. (2018)	1995-2016	Negative binomial regression, literature review	GDP per capita is a significant determinant of migration. Migration patterns go from less developed countries to more developed ones. High unemployment contributes to migration Activities. Terror attacks do not correlate with Migration patterns.	Eurostat, World Bank	Neoclassical macroeconomics, human capital theory
Sardadvar, S. /	2004-2015	Literature review,	Migration correlates positively with higher household	Eurostat	Gravity model, push-pull-theory

Rocha-Akis, S. (2015)		weight matrix,	income, gross product growth, population density and human capital endowment. It correlates negatively the unemployment rate.		
Jennissen, R. (2002)	1960-1998	Time series regression analysis	GDP per capita correlates positively and the unemployment rate negatively with migration.	Eurostat, Council of Europe	Neoclassical macroeconomics, Keynesian economic theory, dual labor market theory, migrant networks
Zaiceva, A. / Zimmermann, K. (2008)	Before and After 2004	Literature review, multinomial logit regression	Human capital has a significant impact on migration.	Eurobarometer, OECD, Eurostat	Gravity model, human capital theory
Mihi-Ramirez, A. / Kumpikaitė-Valiūnienė, V. / Cuenca-García, E. (2017)	2000-2013	Panel data analysis	Unemployment is the most powerful push factor. Economic Freedom Index (EFI) is a strong pull Factor.	Eurostat, Fraser Institute, World Bank	Neoclassical macroeconomics, human capital theory, Keynesian economic theory, World systems theory
Jennissen, R. (2004)	1950-1999	Time series regression analysis	GDP per capita has a positive and unemployment a negative correlation with net migration.	Eurostat, ILO, IMF	Neoclassical macroeconomics, dual labor market theory, NELM, relative deprivation theory, world systems theory, network theory, institutional theory
DeWaard, J. / Kim, K. / Raymer, J. (2012)	2003-2007	Standardization of migration reports, k-nearest neighbor algorithm	Unemployment in sending countries hinders migration. GDP per capita is slightly positive correlated with net migration, however, it is not statistically significant.	United Nations Department of Economic and Social Affairs (UN DESA)	Migration systems theory, Bifurcated labor market theory, NELM, world systems theory, social capital theory

Franc, S. / Čeh Časni, A. / Barišić, A. (2019)	2000-2017	Panel data analysis, literature review	GDP per capita is statistically significantly correlated with net migration in a positive way. Unemployment is negatively correlated with net migration.	Eurostat, OECD	Neoclassical theory of migration, Neoclassical macroeconomics
Nica, E. (2015)	2014	Online survey (n = 3446)	Important drivers of labor migration are cost of living, Income opportunities and unemployment rate.	Adults from Central And Eastern Europe	Neoclassical macroeconomics, Push-Pull-Theory
Davidescu, A. / Strat, V. / Grosu, R. / Zgură, A. (2017)	2007-2014	Panel data analysis, literature review	GDP per capita is one of the main pull factors. The highest negative correlation with net migration showed the unemployment rate.	OECD	Static gravity model, dynamic gravity model
Rodríguez-Pose, A. / Ketterer, T. / Castells-Quintana, D. (2015)	1990-2006	Comparative analysis of statistical data	Higher wages are hardly a driver for migration in the EU. The results suggest, that job availability itself is a factor of migration. Unemployment is an important short-run determinant.	OECD, Eurostat	Push-pull-model
Miłaszewicz, D. / Milczarek, A. / Nagaj, R. / Szkudlarek, P / Zakrzewska, M.	2004-2014	Literature review	The unemployment rate does not have a causal connection with migration.	Eurostat, UNDP, World Bank, Central Statistics Office of Poland (GUS)	Neoclassical macroeconomics, Push-pull-model
Warin, T., Svaton, P. (2008)	1995-2004	Literature review, heteroskedastic autoregressive model, Kmenta-Parks method	The ratio of tax revenue to GDP is negatively correlated with immigration. The ratio of government consumption to GDP is positively correlated with immigration.	OECD	Extended gravity model
Moral-Parajes, E. /	2000-2010	Regression analysis	Per capita income is a strong driver of migration.	Eurostat, Revista	Push-pull-model,

Jiménez-Jiménez, F. (2013)			Higher wages attract more migrants.	de Economía Mundial	Neoclassical macroeconomics, dual labor market theory, Migration networks model
Mihi-Ramirez, A. / Kumpikaitė-Valiūnienė, V. (2013)	2003-2012	Comparative analysis of statistical data	GDP per capita, wages, investments are positively linked to migration flows.	Eurostat, OECD	Push-pull-model

Table 3 – by the author

2.4.2. Economic determinants of migration in other world regions

For world regions other than the EU a total of twelve scientific articles are included in the literature review. An overview of the results is assembled in table 4. As in the part of the review for the EU it is intended to get a broad picture of the literature. Therefore, it is intended to have a relatively large time span. This goal is achieved having covered a research period from 1945 to 2017. On top of that there are studies included which have a research period of less than year and others which have a research period of several decades. These different approaches make the outcome more representative.

Another aspect which is intended to make the research more representative in the broad geographic scope of the review. This approach might give insights for the EU which have not been found yet. This is the reason why the articles which cover non-EU-countries include a number of broadly scattered countries around the globe. These include Thailand, New Zealand, parts of Asia, Nigeria, North Africa and the globe as a whole.

As in the part on the research on EU countries the methodologies used in the research for other world regions are diverse. They range from literature reviews over panel data analyses, case studies and Pseudo-Poisson Maximum Likelihood models to different types of regression models. However, also here can be seen that the regression analysis is the most commonly used method for doing research in the context of searching for determinants of migration. Thus, there is a solid ground why a regression analysis is chosen to conduct the research for this thesis.

The data sources for research in other world regions also include UN data, world bank and OECD data. On top of that there are different sources, for example, International Migration Statistics, DEMIG C2C, Freedom House, CIA Factbook and other national organizations for smaller research. The usage of a broad variety of data sources can be considered an advantage for the research since more data from different institutions makes the results more representative.

The theoretical approaches do not differ in its core from the studies on EU countries. The basis is the same covering neoclassical macroeconomics, human capital theory and the push-pull model. Single additional theories are included like the functionalist migration theory and conflict theory.

The key findings for the research on other world regions contain certain differences when compared with the EU countries. The results seem to be more complex and there is a higher need of differentiation. First of all, the results of a higher number of articles remain inconclusive with regard to economic determinants. This can be seen as an indicator for mixed results. Also, a higher GDP per capita in the EU is seen as a pull factor whereas in poorer regions of the world it is positively linked with migration because it gives people the possibility to migrate whereas absolute poverty hinders migration.

Author(s)	Time period	Methodology	Key findings	Data source	Theories
Mayda, A. (2005)	1980-1995	Panel date analysis	Higher income is a strong pull factor. A declining GDP per worker is a push factor.	OECD, International Migration Statistics (IMS)	Push-pull-model, network effects, Neoclassical macroeconomics
De Haas, H. (2011)	Not specified	Literature review	Evidence remains inconclusive.	IMI	Functionalist migration theory, conflict theory, sending country gap
De Haas, H. / Czaika, M. / Flahaux, M. / Mahendra, E. / Natter, K. / Vezzoli, S / Villares-Varela, M. (2019)	1945-2017	Mixed-method, comparative and regional case studies, quantitative analyses of migration data	Development to higher income in less developed regions is positively linked to migration. Absolute poverty hinders migration due to a lack of capability to migrate.	World Bank, UN Population Division Trends, DEMIG C2C	Migration transition theory, NELM, dual labor market theory, relative deprivation theory
Arif, I. (2019)	1990-2000	Literature review, regression analysis	Economic freedom of The world index(?) Sound interesting. The Higher the value here, the More of a pull factor it is.	World Bank	Gravity model, push-pull-model, Human capital theory
Piotrowski, M. / Tong, Y. (2010)	1984-2000	Literature review, cross-sectional probit regression	Inconclusive with regard to economic determinants.	Nang Rong Project	Human capital theory
Ravlik, M. (2014)	2010	Negative binomial Regression	Migrants are attracted by higher wages, labor demand and a higher HDI.	UN database, World Bank, Freedom House,	Push-pull-model, Neoclassical macroeconomics, dual labor market theory, NELM,

				CIA Factbook	world systems theory
Garces-Ozanne, A. / Weatherston, C. (2005)	1997-2001	Literature review, cross-section regression analysis	Immigration number is positively linked to corruption in the country of origin, which suggests a lack of income opportunities.	New Zealand Immigration Service, Penn World Table 6.1	Neoclassical microeconomics, Human capita theory, Migration network theory, Institutional theory
Abel, G. / Raymer, J. / Guan, Q. (2019)	1990-2015	Regression analysis, Pseudo-Poisson Maximum Likelihood model	GDP per capita is a pull factor for migration within Asia.	UN database	Gravity model, migration networks theory
Bergh, A. / Mirkina, I. / Nilsson, T. (2015)	1990-2013	Regression analysis, Pseudo-Poisson Maximum Likelihood Model	Income level is a strong pull factor and absolute poverty makes people want to leave but restrains them. Also, corruption is a major push factor.	World Bank, UN database	Gravity model, push-pull model
Darkwah, S. / Verter, N. (2014)	1991-2011	Literature analysis, multiple regression analysis	Strong positive relationship between emigration and unemployment rate and remittances.	OECD, UN DESA	Human investment theory, push-pull-model, dual labor market theory, world systems theory
Lucas, R. (2005)	Not specified	Comparative analysis	Negative relationship between both income and employment	Not specified	Neoclassical macroeconomics

possibilities and
migration

Gubert, F. / Nordman, C.
(2011)

1990-2002

Cross-sectional data
analysis, panel
data analysis

GDP per capita is a
push factor.

Docquier/Marfouk

Push-pull-model,
neoclassical macroeconomics,
self-selection of migrants,
gravity model

Table 4 – by the author

Conclusion literature review

The review carried out shows that unemployment and income are the most important determinants in the context of migration. Most of the articles analyzed confirm this statement. However, there is a certain bias towards these two variables because every single article has included these variables in their research whereas a certain share of other variables is covered by few articles only. If every article had covered every variable the results might as a result have differed for income, for instance. Not in every study income has been identified as a pull factor. This bias towards the two mentioned variables can be seen as a possible shortcoming of the articles. Still, as a result unemployment and income are taken into the empirical analysis since they show a certain importance in the context of migration.

3. Empirical analysis

This chapter forms the practical part of the thesis. Here the quantitative analyses mentioned are carried out and the results interpreted. The analysis starts with the part of descriptive statistics in order to give an overview of the data. Subsequently, the correlation analysis follows. It contributes to the decision of which variables are included in the regression analysis since a correlation is the basis for further searching for a causation which again is found in the regression analysis. Then, the empirical results are another main part of this thesis and following this the conclusion gives a summary of and recommendations based on the undertaken research.

3.1. Descriptive statistics

This sub-chapter gives a selection of descriptive statistics which is best considered to give a supportive overview of the data which is analyzed. The number of data points included in the analysis with regard to the net migration rate, being the first dependent variable, is $n = 624$. A data point refers to one set of data for one year and one country. A set of data includes one value for each included explanatory and control variable. So, one data point might be one value for the GDP per capita, one value for the unemployment rate, etc. for one country in one specific year. For one country there are several data points referring to multiple years and for one year there are several data points referring to multiple countries. The number of data points for the migrant stock, being the second dependent variable, is $n = 135$.

Data from twenty-seven EU-countries is included in the empirical analysis where the average number of data points per country is twenty-three for the net migration rate, meaning that a range of twenty-three years is covered here, and five for the migrant stock. The data for the migrant stock is scarcer due to it being recorded merely every five years whereas the net migration rate is documented by EU member-states every year.

The differences in the economic data for the single countries included in the analysis is relatively large, which should be a good basis in order to draw conclusions about whether or not such big differences have an impact on migration. This is because the underlying assumption of this thesis is that if vast economic differences exist, migration will come into play in order to balance out those differences.

These large economic differences can be found in the majority of the included years and variables, however, two examples shall suffice at this point. The GDP per capita in the year 2016 has a minimum of USD 7,545.79 in Bulgaria and a maximum of USD 104,278.39 in Luxembourg. These figures amount to a span of USD 96,732.60. The value of the span is close to the value of the maximum which indicates that the span is large. With such a large span – meaning a large difference in the absolute value of the GDP per capita – at the same moment in time, one would expect those people who have the opportunity to migrate from the country with the lower GDP per capita to the country with the higher GDP per capita. in this case from Bulgaria to Luxembourg.

Another example can be the unemployment rate for the year 2016. The minimum here amounts to 3.95% in Czechia compared to the maximum of 23.54% in Greece. The span is 19.59%. Again, it can be seen that the span comes close to the maximum, thus, indicating a high value for the span. This is to state that the given data set, how arguable it might be from the perspective of social inequality, is a good ground to do migration research on for the reason that the differences for the included variables are high and such differences as explained in the theoretical part of this thesis form an incentive to migrate to the region which is better off.

3.2. Correlation analysis

The correlation analysis is to give a first insight of which economic determinants might be causing migration. At this stage of the research only correlations can be identified, however, a correlation is the basis for a causation. The correlation analysis is carried out by the help of the SPSS software and the results can be seen in table 5 and table 6.

The correlation analysis is carried out in order to identify those variables with a certain correlation with one of the two dependent variables. When there is a certain correlation it can further be analyzed for a causation. Furthermore, the correlation analysis gives the final argument of whether or not to actually include the chosen control variables as control variables. A variable should merely be included as a control variable in a regression analysis if it shows a correlation with the dependent variable itself. Only then you can filter out the actual effect of the explanatory variables. Subsequently, table 5 containing the correlations of the potential explanatory and control variables with the net migration rate and table 6 containing the same correlations with the migrant stock are evaluated.

First if all, it can be seen in both tables that the GDP per capita amounts to the highest absolute correlation values for both dependent variables reaching absolute values of up to 0.600. All other variables are visibly below its correlation values. The only exception to this is the total life expectancy at birth. Its correlation with the net migration rate is higher than the GDP per capita's. Showing a strong correlation with both dependent variables make both the GDP per capita and the total life expectancy at birth valuable for the regression analysis as they might contribute to finding proof for a causation of variables in the context of migration. Hence, the two variables are valuable factors for the regression, the GDP per capita as an explanatory variable and the total life expectancy at birth as a control variable.

The next set of variables which might contribute to the regression model later in the research are the variables which have an absolute correlation value of at least 0.100 since this value can still be considered as a notable correlation and these variables might still contribute to finding proof of a causation for migration. A correlation value of 0.100 means that if one of the economic or non-economic factors are increased by 100% it would have the consequence of either of the migration variables increasing by 10%.

This criterion is fulfilled by all given variables except for two which are the age dependency ratio and the net investment in non-financial assets. The tertiary school enrollment is kept for the analysis even though it has an absolute correlation value below 0.100 with regard to the net migration rate because its absolute correlation value with the migrant stock is larger than 0.100. The same applies to those variables with an absolute correlation value lower than 0.100 with regard to the migrant stock. They might still contribute to the regression because their absolute correlation value with the net migration rate is above 0.100. The only two exceptions are as mentioned the age dependency ratio and the net investment in non-financial assets.

These two exceptions are not discarded at this point in the analysis. In case of the age dependency ratio the reason for this is that its correlation value with the net migration rate is just slightly below the defined threshold of 0.100 and on top of that it is one of the few variables which shows a negative correlation with the net migration rate but a positive one with the migrant stock. One would expect that if there is a positively correlating effect on the net migration rate there should also be a positively correlating effect on the migrant stock. However, this is not the case. The counter intuitiveness should be an argument to include this variable in the regression analysis.

The correlation values for the net investment in non-financial assets would suggest leaving it out of the analysis since on this ground it would not contribute to the regression model due

to the correlation values being relatively low. However, it is decided to not be discarded at this point of the analysis. The reason for this is that, as explained earlier in this thesis, it is difficult to find sufficient data – and hence enough variables for a regression analysis – for the empirical analysis and even though the correlation value of the net investment in non-financial assets with the net migration rate might be basically zero, its correlation value with the migrant stock is small but existent and, thus, might contribute a certain part to the regression model.

Table of correlations - Net migration rate

	Net migration rate	Total population	Age dependency ratio	Total life expectancy at birth	Government expenditure on education	Tertiary school enrollment	GDP per capita	Unemployment rate	FDI inflows	Inflation of consumer prices	Net investment in non-financial assets
Net migration rate	1.000										
Total population	0.125	1.000									
Age dependency ratio	-0.096	0.096	1.000								
Total life expectancy at birth	0.579	0.200	-0.064	1.000							
Government expenditure on education	0.135	-0.223	0.037	0.278	1.000						
Tertiary school enrollment	-0.029	0.016	-0.278	0.503	0.414	1.000					
GDP per capita	0.492	0.026	0.000	0.782	0.490	0.554	1.000				
Unemployment rate	-0.327	0.163	-0.108	-0.012	-0.031	0.223	-0.130	1.000			
FDI inflows	0.125	-0.133	-0.194	0.175	0.136	0.023	0.126	-0.020	1.000		
Inflation of consumer prices	-0.208	-0.015	0.079	-0.315	-0.149	-0.235	-0.252	0.022	-0.059	1.000	
Net investment in non-financial assets	-0.006	-0.281	-0.131	-0.037	-0.151	-0.148	-0.168	-0.157	0.088	-0.062	1.000

table by the author

Table 5

Table of correlations - Migration stock

	Migration stock	Total population	Age dependency ratio	Total life expectancy at birth	Government expenditure on education	Tertiary school enrollment	GDP per capita	Unemployment rate	FDI inflows	Inflation of consumer prices	Net investment in non-financial assets
Migration stock	1.000										
Total population	-0.079	1.000									
Age dependency ratio	0.057	0.057	1.000								
Total life expectancy at birth	0.405	0.189	-0.039	1.000							
Government expenditure on education	0.255	-0.200	0.126	0.299	1.000						
Tertiary school enrollment	0.236	0.057	-0.216	0.529	0.409	1.000					
GDP per capita	0.600	0.026	0.021	0.772	0.442	0.496	1.000				
Unemployment rate	0.001	0.177	-0.146	0.006	-0.040	0.279	-0.103	1.000			
FDI inflows	0.270	-0.174	-0.223	0.268	0.183	0.096	0.220	0.012	1.000		
Inflation of consumer prices	-0.273	-0.003	0.125	-0.578	-0.325	-0.471	-0.431	-0.034	-0.143	1.000	
Net investment in non-financial assets	-0.034	-0.232	-0.069	-0.025	-0.143	-0.183	-0.154	-0.127	-0.014	-0.069	1.000

table by the author

Table 6

3.3. Regression analysis

This chapter covers the regression analysis which is carried out in order to prove or disprove a causation between the given variables. As a basis for the analysis the variables used in the regression are subsequently introduced. They are categorized in dependent, explanatory and control variables. Every given variable is introduced by naming it and in addition the measuring unit used to describe it is explained. Furthermore, an explanation on why the variable has been chosen to be included in the regression. As a software for this analysis SPSS is used due to user-friendliness and possibility of access.

The specific method for the empirical analysis is a multiple hierarchical linear regression. The reason this method is chosen is because multiple determinants are affecting migration and control variables have to be included in order to be able to prove a causation.

3.3.1. Dependent variables

The given research aims at covering two dependent variables, one which represents migrations flows, thus it is a more dynamic variable, and the second is a more static one by representing the mere number of migrants in a certain country. The dependent variable for the former description is the net migration rate and for the latter it is the migrant stock. The net migration rate covers the migration flows because it gives the difference of the number of people moving out of a given country and people moving into the same given country.

These two variables represent the phenomenon of migration in the frame of this thesis. Data for the two variables is collected for every EU country. The data source for the net migration rate is the UN World Population Prospects which is gathered on the webpage [macrotrends](https://www.macrotrends.net/countries/AUT/austria/net-migration)¹¹ and the data for the migrant stock is taken from the World Bank database.¹²

¹¹ UN, World Population Prospects (2020): <https://www.macrotrends.net/countries/AUT/austria/net-migration>, last opened: September 17th 2020

¹² World Bank (2020): <https://data.worldbank.org/indicator/SM.POP.TOTL?locations=AT>, last opened: November 21st 2020

3.3.2. Explanatory variables

Many economic factors could not be included in the empirical analysis because not enough data for them has been found. It lies in the essence of a regression analysis that the data set is large. If this does not apply to a variable it should not be included in the analysis since the results might not be representative and misleading. The economic factors which sufficient data has been found for is further explained in this chapter.

The explanatory variables depicted in this chapter represent the potential economic determinants of migration which this thesis strives to find. The final decision of which factors are included as explanatory variables is based on the results of both the literature review and the correlation analysis. An economic factor is to be included in the regression analysis if an effect on migration is found in the literature or if there might be a potential effect on migration by showing a certain correlation in the correlation analysis.

The unemployment rate is included in the research as a result of the literature review. A large share of the articles – as analyzed earlier – came to the result that the unemployment rate is a determinant for migration. This is the first reason why it is decided to be kept for the regression analysis. The second reason is the result of the correlation analysis. Both for in the context of the net migration rate and the migrant stock this economic factor reached a high enough level of correlation in order to be relevant for the regression analysis. A high enough correlation refers to the definition which is given in the chapter of the correlation analysis meaning that the correlation value is equal to or higher than 0.100. The unemployment rate is defined as the percentage of not professionally working people in a given country of the total labor force of that same country.

The GDP per capita is as well included in the regression analysis. Also, the basis for this decision are the results of the literature review and the correlation analysis. The majority of the scientific articles concluded that the GDP per capita is a relevant economic factor for migration which makes it an important variable to further be analyzed. Furthermore, this economic factor stood out by having a high correlation with both dependent variables in the correlation analysis. The GDP per capita measures the total economic output per person of a given country by dividing this output by the given country's total population.

The economic factor of FDI inflows is taken into the regression analysis as well. On the sole basis of the literature review there is not enough evidence to support this decision, however, the FDI inflows showed a high enough correlation with the dependent variables to

be of value for the regression. This economic factor represents the FDI inflows of a given country as a percentage of that country's GDP. FDI inflows give an idea of how much investment is flowing into a country and the higher that inflow is the more business and infrastructure can potentially be built with it. Therefore, FDI inflows are a potential pull-factor.

A further economic factor which is included in the regression is the inflation of consumer prices. Also, here there is not enough evidence to include it on the sole basis of the literature review, but the correlation analysis shows a high enough correlation so that it might add precision to the regression model. The inflation is measured in annual percent of consumer prices. It gives an idea of how much capital is around in a given country for different reasons and the corresponding rise of prices. Inflation might trigger migration due to higher prices being a possible push-factor, but also higher wages being a possible pull-factor.

The net investment in non-financial assets is also kept as an explanatory variable for the regression. There is no evidence in the literature that this economic factor might add precision to a regression model, however, there is a small but existent correlation with the migrant stock. It is included as an explanatory variable since it might add precision to the regression model. It is more likely that this is not the case, but still the possibility exists. So, not to miss out on a possible contribution of an economic factor this decision is made at this point of the analysis. The net investment in non-financial assets is given in percent of GDP. Investment might be a pull-factor for migration because it is money that can be worked with for the development of society. The World Bank defines non-financial assets as follows.

“Net investment in government nonfinancial assets includes fixed assets, inventories, valuables, and non-produced assets. Nonfinancial assets are stores of value and provide benefits either through their use in the production of goods and services or in the form of property income and holding gains. Net investment in nonfinancial assets also includes consumption of fixed capital.”¹³

¹³ World Bank (2020): <https://data.worldbank.org/indicator/GC.NFN.TOTL.GD.ZS?view=chart>, (accessed: October 11, 2020, 10:56 am)

3.3.3. Control variables

The explanatory variables are completely made up of economic factors since this research strives to find economic determinants for migration. This means for the control variables that they should be comprised of non-economic factors which also have an influence on migration. So, the objective of this chapter is to determine those non-economic factors which have an influence on the net migration rate and on the migrant stock in order to filter out their effect later on in the regression analysis.

A causal effect cannot be known at this stage of the research. However, it is sufficient to base a decision on whether or not to include a factor as a control variable on the correlation values. The reason for this is that if there is a correlation with any of the two dependent variables the regression analysis has to control for those variables in order to filter out the remaining effect the explanatory variables have on the dependent variables. In the following, a decision is made of which factors to include in the regression as control variables.

The total population is the first factor to be included in the regression. The reason for this is that its absolute correlation value with the net migration rate is higher than 0.100. As defined in the chapter covering the correlation analysis this value can be considered a strong enough correlation so that it should be controlled for in the regression. The total population gives the absolute number of people living in a certain country.

The age dependency ratio is included in the regression as well. Its absolute correlation value is just slightly below 0.100 and its algebraic sign changes when the contexts of the net migration rate and the migrant stock are compared. This seems counterintuitive which is why this variable might contribute to an insightful conclusion. The age dependency ratio is measured in percent of the working age population and gives the ratio of typically non-working people in a society (0 - 14-year-olds and 65+-year-olds) to the typically working part of a given country (inhabitants ranging from 15 to 64 years). It is included as an indicator of how stressed the welfare system of a given country is. The higher this ratio, hypothetically, the less a pull-factor it becomes for potential migrants

The next non-economic factor which is included as a control variable is the total life expectancy at birth. Its absolute correlation values both with the net migration rate and the migrant stock are among the highest. Thus, it is a valuable variable to control for in the regression. This variable is measured in years at the moment of birth of people living in a given

country. It is included as an indicator for the quality of life. Hypothetically, the higher the life expectancy is, the stronger a pull factor it becomes for potential migrants.

Another non-economic factor which is included as a control variable is government expenditure on education. Its absolute correlation values are at least 0.100 and reach up to 0.255. So, also here a strong enough correlation is evident which can be controlled for in the regression in order to filter out more precisely the effect of the included explanatory variables on migration. This variable is given in percent of GDP of a given country. It is included as an indicator of investment in education and therefore can be seen as an indicator of quality of education. A good education system in a given country can, hypothetically, be a pull-factor for potential migrants.

The final non-economic factor to be included as a control variable is the tertiary school enrollment. It is included because of its high absolute correlation value in the context of the migrant stock. This variable is measured in percent of high school graduates and gives the ratio of how many of those graduates enroll into an institution of tertiary education. It is included as an indicator of the degree of education of the society in a given country. Hypothetically, a higher degree of education might be a pull-factor for potential migrants.

3.4. Empirical analysis and results

In this chapter the results of the regression analysis are presented, and specific outcomes formulated. The regression analysis is carried out using multiple levels in form of a null model, numerous sub-models and a full model. The null model does not contain any explanatory variables and the full model contains all the given variables. There is one sub-model for each given explanatory variable. This method is used so that it can be identified how much precision each single explanatory variable adds to the regression model.

The numerical results of the research are given in table 7 and table 8. The underlying null hypothesis for the research is that there is no correlation and no causation between the explanatory and dependent variables. As a first step the given tables are explained and then the results of the regressions including the net migration rate as the dependent variable are interpreted. Subsequently, the same is done with the regressions having the migrant stock as the dependent variable. Following this, the results of both regressions are compared.

There are two tables given which summarize the results of the regression analysis. The first table shows the results for the dependent variable of net migration rate and the second one shows the results of the migrant stock. On the left-hand side of the tables all included variables are enlisted. This includes both independent and control variables. The upper block is made up of the former and the second block is made up of the latter. There are seven columns given for all the variables which represent different models of the regression. Number one represents the null model, number seven the full model and the numbers in between show the respective sub-models. The three lines at the end of the table give the number of observations and the R^2 - and adjusted R^2 -value for each of the seven models as a measure of the strength of the correlation. The core of the tables forms the data on a possible causation and the data on the significance of the results. For each given variable and model two values are given as a result of the regression – exceptions are in the null and the sub-models where certain variables have not been included for the earlier explained reasons. The upper value represents the standardized beta-value of the regression. It shows the strength of the causation whether the relationship is positive or negative. The lower value, written in italic, is the p-value which shows the significance level. For the purpose of evaluation, the presentation of the significance level has been designed as follows. For the ease of interpretation, the significance level is marked by a certain number of asterisks where three asterisks mean the highest significance of p being less than 0.01, two asterisks mark a p-value between 0.01 and 0.05, one asterisk mark a p-value between 0.05 and 0.1 and where the significance is the lowest, thus, the p-value is higher than 0.1 no asterisk has been added.

Net migration rate

For the net migration rate as a dependent variable seven regressions have been carried out. Each of them has a scope of 624 observations. The seven regressions include the null model, the full model and five sub-models. The R^2 -value is positive and between 0.520 and 0.598. This indicates a relationship strength of 52 to 60% between the regression model and the dependent variable meaning that 52 to 60% of the variation in the dependent variable can be explained by the regression model. In the following the specific regression results are analyzed and this is done having in mind the given R^2 -value. The adjusted R^2 -value provides an indication of whether or not an additional explanatory variable actually contributes to the regression model. If so, the value increases and if not, it decreases compared to the actual R^2 -value. Table 7 shows that the null model has the lowest value for the adjusted R^2 and the full model has the highest one. This indicates that the full model actually does provide the best regression model in terms of describing accurately the highest share of influence on the

dependent variable. It can also be stated, since the adjusted R^2 -value for every sub-model is higher than the R^2 -value in the null model, that every explanatory variable actually adds precision to the model. For the models four, five and six this is merely a small amount which is why these three variables can be considered to be adding less precision than the GDP per capita and the unemployment rate. The sub-models of these two variables have an adjusted R^2 -value which is higher than the R^2 -value of the null model by 0.034 and 0.043 respectively, thus, indicating the mentioned higher share of adding precision to the regression model.

Regression results							
	Dependent variable: net migration rate						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GDP per capita		***0.344 <i>0.000</i>					***0.229 <i>0.000</i>
Unemployment rate			***-0.246 <i>0.000</i>				***-0.213 <i>0.000</i>
FDI inflows				** -0.066 <i>0.025</i>			*-0.052 <i>0.057</i>
Inflation of consumer prices					*-0.054 <i>0.068</i>		** -0.055 <i>0.043</i>
Net-investment in non-financial assets						** -0.063 <i>0.039</i>	** -0.061 <i>0.036</i>
Total population	0.031 <i>0.301</i>	*0.054 <i>0.066</i>	***0.077 <i>0.008</i>	0.023 <i>0.454</i>	0.033 <i>0.279</i>	0.010 <i>0.762</i>	**0.060 <i>0.046</i>
Age dependency ratio	***-0.207 <i>0.000</i>	***-0.236 <i>0.000</i>	***-0.217 <i>0.000</i>	***-0.223 <i>0.000</i>	***-0.205 <i>0.000</i>	***-0.215 <i>0.000</i>	***-0.253 <i>0.000</i>
Total life expectancy at birth	***0.792 <i>0.000</i>	***0.565 <i>0.000</i>	***0.742 <i>0.000</i>	***0.810 <i>0.000</i>	***0.778 <i>0.000</i>	***0.803 <i>0.000</i>	***0.606 <i>0.000</i>
Government expenditure on education	***0.158 <i>0.000</i>	***0.080 <i>0.017</i>	***0.140 <i>0.000</i>	***0.167 <i>0.000</i>	***0.155 <i>0.000</i>	***0.145 <i>0.000</i>	***0.084 <i>0.010</i>
Tertiary school enrollment	***-0.550 <i>0.000</i>	***-0.603 <i>0.000</i>	***-0.467 <i>0.000</i>	***-0.566 <i>0.000</i>	***-0.554 <i>0.000</i>	***-0.562 <i>0.000</i>	***-0.540 <i>0.000</i>
(Constant)	<i>0.000</i>	<i>0.000</i>	<i>0.000</i>	<i>0.000</i>	<i>0.000</i>	<i>0.000</i>	<i>0.000</i>
Number of observations	624	624	624	624	624	624	624
R ²	0.520	0.554	0.573	0.524	0.522	0.523	0.598
Adjusted R ²	0.516	0.550	0.569	0.519	0.518	0.518	0.591

values in italic show the level of significance

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

Table 7 – by the author

In the table it can be seen that FDI inflows and inflation of consumer prices have the lowest significance level among the explanatory variables. Both are once above the 0.05-benchmark. For FDI inflows this is the case in the full model and for the inflation of consumer prices it is the case in the sub-model. This relatively low significance level means the null hypothesis cannot be rejected on much ground. Thus, these two explanatory variables' effect on the net migration rate in the EU can be considered low. Changes in FDI inflow or the inflation of the consumer prices will, therefore, not bring about noticeable changes in the net migration rate. Another result underlining this outcome is the corresponding standardized beta-value of these two factors. The highest absolute value here is 0.066 and the lowest is 0.052. The standardized beta-value measures the strength of the causal effect of the explanatory variable on the dependent variable where an absolute value of one would imply a causation of 100% and zero a causation of 0%. The standardized beta-values for FDI inflow and inflation of consumer prices are in both models highly close to zero which adds to the finding that the causal relationship between these explanatory variables and the net migration rate is rather low.

Net investment in non-financial assets is the variable which has a slightly higher significance level than the before looked at FDI inflows and inflation of consumer prices. Both the value in the sub-model and in the full model are below 0.05. In this case the null hypothesis can neither be fully rejected nor confirmed since the significance level does not come below the critical value of 0.01. The standardized beta-value has to be considered in combination with the p-value. Its absolute value's maximum is 0.063, which is highly close to zero, which indicates that there is hardly any causal relationship with the net migration rate. Thus, it can be concluded here that the result is inconclusive. There is no obvious causal relationship between net investment in non-financial assets and the net migration rate.

Unlike the variables analyzed so far the GDP per capita and the unemployment rate have a significantly low p-value. For both, the p-value comes to 0.000 which is per definition the highest possible significance level. This means the null hypothesis is rejected. As a result, it can be stated that there is a causal relationship between these two variables and the net migration rate. The standardized beta value again is a measure of how strong this relationship is and whether it is a direct or indirect relationship. In the case of the GDP per capita the standardized beta-value amounts to 0.344 in the sub-model and 0.229 in the full model. In theory this means for every 100% increase in the GDP per capita the net migration rate increases by 23 to 34%. It increases because the standardized beta-values are greater than zero. The net migration rate represents the difference between people migrating into and people migrating out of a certain region. If it increases this implies more people migrating into a certain region than people migrating out of this same region. For the unemployment rate the

standardized beta-value amounts to -0.246 in the sub-model and -0.213 in the full model. First, it can be stated that there is an indirect relationship between the unemployment rate and the net migration rate as can be seen from the negative values of the standardized beta-value. So, if the unemployment rate increases the net migration rate decreases. Equivalently as for the GDP per capita variable the standardized beta-value represent the strength of the relationship. Theoretically, for every 100% increase in the unemployment rate the net migration rate decreases 21 to 25%. Therefore, it can be concluded that if the unemployment rate gets higher in a certain region people living in that same region become more likely to migrate to another region.

Migrant stock

The total number of observations for the regression analysis of the migrant stock as the dependent variable is 135 for the null model, the sub-models as well as the full model. The R^2 -value is positive which indicates a direct relationship between the explanatory variables and the dependent variable. Its minimum is at 0.204 in the null model and its maximum is at 0.426 in the full model. Thus, the relationship strength between the regression model and the dependent variable is between 20 and 43%, again, meaning that 20 to 43% of the variation in the dependent variable can be explained by the regression model. In the following the specific regression results for the migrant stock are analyzed and this is again done having in mind the given R^2 -value. Table 8 shows that the null model has an adjusted R^2 -value of 0.173 and the full model one of 0.379. The fact that the full model has a higher adjusted R^2 -value means that the explanatory variables in total add a certain precision to the regression model with regard to what share of the variance of the dependent variable can be explained by the explanatory variables. The underlying implication is that not every explanatory variable included in the regression model actually adds precision to this model. These variables can now be identified by seeing whether or not the adjusted R^2 -value in the respective sub-model is lower than the null model's adjusted R^2 -value. This is, indeed, the case for the unemployment rate, the inflation of consumer prices and the net investment in non-financial assets. Their adjusted R^2 -values are 0.169, 0.167 and 0.169 respectively. So, this implies these three variables do not have a causal relationship with the migrant stock. The analysis will go deeper here on the following pages with regard to the significance level and the standardized beta-value. The adjusted R^2 -values of the FDI inflows and the GDP per capita are higher than the null model's, so they do add precision. The respective adjusted R^2 -values are 0.191 and 0.349.

Regression results							
Dependent variable: migration stock							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GDP per capita		***0.706 0.000					***0.786 0.000
Unemployment rate			0.042 0.624				0.123 0.107
FDI inflows				*0.168 0.054			**0.182 0.019
Inflation of consumer prices					-0.026 0.801		-0.106 0.238
Net-investment in non-financial assets						-0.042 0.623	0.069 0.363
Total population	*-0.141 0.096	-0.088 0.243	*-0.148 0.085	-0.110 0.195	-0.139 0.102	*-0.152 0.084	-0.044 0.580
Age dependency ratio	0.071 0.399	0.041 0.587	0.074 0.384	0.115 0.183	0.073 0.389	0.068 0.422	0.106 0.164
Total life expectancy at birth	***0.402 0.000	-0.091 0.444	***0.411 0.000	***0.343 0.001	***0.390 0.000	***0.410 0.000	*-0.247 0.067
Government expenditure on education	0.095 0.309	-0.037 0.665	0.099 0.292	0.069 0.462	0.092 0.330	0.088 0.350	-0.070 0.418
Tertiary school enrollment	0.008 0.936	-0.037 0.686	-0.009 0.933	0.042 0.684	0.004 0.969	-0.001 0.993	-0.058 0.557
(Constant)	0.000	0.374	0.000	0.000	0.001	0.000	0.094
Number of observations	135	135	135	135	135	135	135
R ²	0.204	0.378	0.206	0.227	0.205	0.206	0.426

Adjusted R ²	0.173	0.349	0.169	0.191	0.167	0.169	0.379
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values in italic show the level of significance

Table 8 – by the author

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

In the regression table for the migrant stock, the second dependent variable, there are three explanatory variables which can be identified with a relatively low p-value. These are net investment in non-financial assets, inflation of consumer prices and unemployment rate. Also here, a low p-value is by definition a value which is higher than the given benchmark of 0.1. This benchmark is at the low end of the three given levels of significance, thus, resulting higher than this value it can be stated that for the enumerated variables the null hypothesis cannot be rejected. There is not significant causal relationship between them and the migrant stock. The highest p-value goes as high as 0.801 which is why these results can be considered to be certain. In order to underline them further one can have a look at the standardized beta-values. They are all relatively close to zero which indicates little effect on the dependent variable. Four out of six standardized beta-values are lower than 0.07. The other two are around 0.1. This is not a solid ground to argue in favor of a causal relationship in this case. All in all, the null hypothesis for the three mentioned explanatory variables cannot be rejected.

The determinant with the next lowest p-value is FDI inflows. Its value in the sub-model is below 0.1 and its value in the full model even comes under 0.05 which is the second lowest defined significance category. Phrasing this outcome into words it would be a medium strong causal relationship between this explanatory variable and the migrant stock. The null hypothesis in this case can neither be fully accepted nor fully rejected. This means that there is a slight effect of FDI inflows on the migrant stock, however, it cannot be considered a great effect. The standardized beta-values draw a similar picture. They are somewhat higher than the values of the previously discussed variables, however, not a great deal. In the sub-model the standardized beta-value for FDI inflows amounts to 0.168 and in the full model to 0.182. In practical terms this would mean – under the condition of a perfect p-value score, meaning a p-value of zero, which is not the case here – for every 100% increase of the FDI inflows, *ceteris paribus*, the migrant stock would be increasing by 17 to 18%. Since the p-value is not zero this effect can be expected to be smaller.

The highest significance level, as in the regression with the net migration rate as dependent variable, belongs to the GDP per capita. Both in the sub-model and in the full model the p-value comes to 0.000 which is why it is the only explanatory variable in the context of the migrant stock which gets three asterisks. Accordingly, the null hypothesis can be rejected in this case with the highest possible certainty. There is a strong causal relationship between the GDP per capita and the migrant stock. Considering the standardized beta-value this relationship is confirmed. The absolute value of it amounts to 0.706 and 0.786 in the sub-model and in the full model respectively. The algebraic sign is positive which indicates a positive relationship, thus, for every increase in the GDP per capita the migrant stock increases as well.

Interpreting the standardized beta-values this means theoretically if the GDP per capita increases by 100% the migrant stock increases by 71 to 79%. This can be considered a strong relationship because if the GDP per capita doubles its value the migrant stock would almost double as well.

Comparison

In the following the results of both regressions are compared with the goal of identifying those explanatory variables which have a weak, semi-strong or strong causal relationship with the dependent variables in either or both of the regression models. Those explanatory variables which in the end have a weak causal relationship with the dependent variable in both models can be considered not to be a relevant determinant with regard to migration at all whereas those which are proven to have a strong causal relationship with the dependent variable in both models can be considered relevant determinants. Explanatory variables which have a strong causal relationship in one regression model but not in the other can possibly be considered a relevant determinant, however, there might less ground to argue in favor of them being relevant in practice than those variables which have a strong causal relationship in both regression models. In the following, corresponding comparisons are carried out and final results are formulated. The comparison starts with those explanatory variables which have a weak causal relationship with the dependent variable in both regression models. Then those with a weak relationship in one model but a strong one in the other, or a medium-strong relationship in both, will follow. Subsequently, those explanatory variables are stated which have a strong relationship in both regression models.

In both regressions the explanatory variable *inflation of consumer prices* has resulted in having a p-value higher than 0.05 with merely one exception. In addition to this, its standardized beta-value remains close to zero in both models. One exception goes up to an absolute value of 0.106, however, all other values remain equal to or smaller than 0.055. Furthermore, the results of the adjusted R^2 -values in both models are lower than the respective values in the null models and the overall lowest compared to all other explanatory variables. Since these coefficients are relatively weak in both models the inflation of consumer prices can be considered the least relevant economic determinant of the explanatory variables which are included in this research with regard to migration.

Following the inflation of consumer prices, the variables which have a slightly stronger causal relationship with the dependent variables in both models are FDI inflows and net

investment in non-financial assets. Looking at the sub-model of FDI inflows and the full model in both regression tables it can be seen that for this explanatory variable the p-value remains below the defined significance level of 0.05 in one occasion in both regression models and in the respective other occasion it gets two asterisks for being between 0.05 and 0.01. The standardized beta-value in the regression regarding the net migration rate shows a weak relationship whereas in the regression model regarding the migrant stock a medium-strong relationship can be recognized. Regarding the adjusted R^2 -values in both regression tables the result is strengthened that FDI inflows have the tendency of showing a weaker causal relationship with the net migration rate and a medium-strong one in the context of the migrant stock. The net investment in non-financial assets draws a similar picture with regard to the p-value, only the other way around. Its p-values imply a more significant causal relationship with the net migration rate coming to less than 0.05 in both the sub-model and the full model whereas in the regression model of the migrant stock both p-values remain over 0.1 showing no significance at all. However, its standardized beta-values and the difference of its adjusted R^2 -values and the adjusted R^2 -values of the null model stay close to zero in both regression models. Thus, all in all the FDI inflows and the net investment in non-financial assets show a rather weak to medium-strong causal relationship with the migration variables.

With regard to both dependent variables the explanatory variable of the unemployment rate shows a highly mixed picture. That is, in the context of the net migration rate the causal relationship is relatively strong whereas it is weak in the context of the migrant stock. This statement is fed by the following results drawn from the tables of the regression results. In the table depicting the results for the net migration rate the unemployment rate has the highest possible p-value in both the sub-model and the full model with 0.000. The null hypothesis is fully rejected here whereas in the table concerning the migrant stock the p-value does not achieve any asterisk amounting to 0.624 in the sub-model and to 0.107 in the full model. The null hypothesis here therefore is not rejected in this case. The standardized beta-value shows a similar picture. Where it can be evaluated as strong with regard to the net migration rate having an absolute value of greater than 0.200 in sub-model and full model it is somewhat weak with regard to the migrant stock between 0.040 and 0.130. Comparing the adjusted R^2 -values from both tables this result is further confirmed. In table 7 the unemployment rate adds precision to the regression model because the adjusted R^2 -value in the sub-model is higher than in the null model. The opposite is the case for the values in table 8.

Unlike the unemployment rate the GDP per capita shows a clear picture in the comparison which is depicted in the following. The causal relationship between this explanatory variable and both dependent variables can be evaluated as strong because the p-value both in sub-

models and full models of both regression tables amounts to the lowest possible value of 0.000. Thus, the null hypothesis is rejected in every occasion. The comparison of the standardized beta-value shows a similar picture. The lowest measured absolute value here is 0.229 which is one of the highest measured in any of the other regressions. The highest measured absolute value goes as high as 0.786 underlining a strong causal relationship. The adjusted R^2 -values in both tables are substantially higher in the sub-model than in the respective null model. Thus, a clear strong causal relationship in both regressions can be confirmed. There is, however, one difference which is notable. It is that the causal relationship of the GDP per capita is substantially stronger with the migrant stock than with the net migration rate. This becomes clear when looking at the standardized beta-value and the adjusted R^2 -values. The absolute value of the former is two to three times greater in the context of the migrant stock than in the context of the net migration rate. The adjusted R^2 -value in the context of the migrant stock is about twice as great in the sub-model than in the null model. The respective values for the net migration rate are merely 1.07-fold as much.

4. Conclusion

The empirical analysis is highly in-depth and detailed. It looks at all the research details which can be drawn from the compiled data. The subsequent sub-chapters aim at providing in the first step an overview of these results by summarizing the most important outcomes in order to have them at one glance for better understanding. Based on these results recommendations for practical use are deducted. It is a major goal of this thesis to provide a basis for the elaboration of policies in the context of regulation of migration. This is covered in the second sub-chapter of the conclusion. Thirdly, as in every research conducted there are certain limitations which are regarded in the penultimate sub-chapter and the thesis closes with the implications for research and practice.

4.1. Findings

The first and most important result from this conducted research is that the findings from the literature review with regard to the GDP per capita can be confirmed. That is, with an increase in the national GDP per capita more migrants are attracted to the respective region and the more the migrant stock will grow as well. Also, as found in the literature review the second most important economic determinant with regard to migration is the unemployment rate, however, results are not as strong as is the case for the GDP per capita. The unemployment rate shows a strong causal with the net migration rate but a weak one in the context of the migrant stock. An explanation here can be that the migrant stock includes people who have a migration background whereas this is not the case for the net migration rate. Thus, an increasing unemployment rate leads to people with no migration background leaving the respective country of residence whereas people with a migration background are not as easily affected by a changing unemployment rate.

Another finding which can be drawn from the analysis is that with an increase in the net investment in non-financial assets the net migration rate decreases by a fraction. The effect is recognizable, but it is small. So, by increasing this factor a contribution is made to outward migration of a respective region as the results suggest it. This seems counterintuitive. Why this might not be completely accurate to leave it as a finding like this is further explained later on in the sub-chapter of limitations.

The FDI inflows can be discarded as a determinant for the net migration rate since a causal relationship cannot be proven by the analysis. This factor shows somewhat an effect on the

migrant stock. In this context it can be considered, however, it would not be a powerful tool with regard to regulation. Also, based on the given research the inflation of consumer prices can be discarded as an economic determinant of migration showing no causal relationship with any of the two dependent variables.

Based on the given research and the stated results the research questions formulated for this thesis can be answered as follows. This first research question was what economic determinants for migration are. Definitely, the GDP per capita must be given here as an answer in every aspect of migration analyzed in this thesis. The unemployment rate is not in every aspect of migration a safe determinant. it does have a strong negative effect on the net migration rate, however, its effect on the migrant stock is small. So, people with a migration background are not as affected by the unemployment rate as other parts of the society in a given country. Still, the unemployment rate can be considered as an economic determinant of migration.

FDI inflows and investment in non-financial assets merely have a small effect on migration, however, it is measurable. These factors can be included in migration regulation measures but claiming that they are economic determinants for migration would be a strong statement. In comparison to the economic factors covered so far the inflation of consumer prices cannot be considered an economic determinant of migration at all. The second research question is answered in the subsequent chapter in form of recommendations.

4.2. Recommendations

If one were to elaborate a holistic package of policy measures with the objective of regulating migration the recommendations in this chapter would aim at serving for the economic share of such a package. The recommendations stated in this chapter are based on the outcomes of the empirical analysis and, thus, have a solid foundation.

Based on the findings of this thesis the inflation of consumer prices should not be included in the elaboration of possible policies in the context of migration because there would be hardly any measurable effect. In the case of investment in non-financial assets and FDI inflows the recommendation is similar, however, these factors can be included in possible policies earlier than the inflation of consumer prices. So, if the goal is to strengthen the inward migration of a certain country – or in other words, providing more economic pull-factors – the attraction of FDI inflows should be strengthened. With regard to investment in non-financial assets no

recommendation can be formulated since the results remain rather inconclusive for the reasons stated.

It can be stated, however, that recommendations given on the basis of the unemployment rate and the GDP per capita would have an effect on migration. If the objective was to strengthen inward migration in a certain country it should be tried to decrease the unemployment rate, thus, increasing the demand of labor which would result in a pull-factor. This can be achieved by investing in new jobs. Money could be handed out to start-ups if they have a promising business model. Existing companies could financially supported if they diversify their current business model, thus, creating new jobs. Initiatives could be started which aim at getting groups of society into a job which have not worked for a long time. One could come up with respective campaigns and necessary investments depending on the individual circumstances prevailing in the respective country.

Similar approaches could also lead to an increase in the GDP per capita. Investments in the mentioned fields are one aspect. Another one can be the productivity. An increase in productivity goes along with an increase in the GDP. Respective analyses of business processes could be carried out and the results be implemented. Simple approaches like offering flexible working hours and the possibility to work from home might lead to an increase in satisfaction at the workplace, thus, possibly contributing to an increase in productivity.

4.3. Limitations

A first limitation to the research conducted in the context of this thesis is its comparably small scale in quantitative terms. It cannot cover a large picture of migration movements. For this reason a higher level of complexity cannot be reached which could capture a more precise picture of migration.

Furthermore, the EU is not a uniform region with respect to the distribution of economic features. Some economic factors may have a different scope in certain areas compared to other ones. An example here can be what was stated earlier under 4.1 with regard to the net investment in non-financial assets. It was stated that an increase in this net investment would lead to an increase in outward migration of a respective region. The used data set proves this to be correct under the used method. However, it might be that this is the case for poorer areas within the EU. As mentioned in the literature review there is the effect that in poorer areas a first increase in the standard of living leads to outward migration as a first effect and it is only

in the longer term that this trend is converted. Equivalently this might be the case with the given explanatory variable which is an investment, so it seems counterintuitive that an investment in non-financial assets would lead to people moving elsewhere. The given explanation might be applicable. However, a higher degree of differentiation of the research would be necessary to prove this which is not covered by the scope of this thesis.

For a regression analysis a large amount of data is needed. If this is not the case the results remain inconclusive. For the methods applied in this thesis it has been difficult to find enough data, so the number of potential variables which can be included is relatively small.

4.4. Implications for research and practice

The topic of migration is highly complex and migration decisions are made considering a high number of arguments, which is why a high number of studies are necessary in order to get a more and more reliable theoretical ground on which to form decisions.

Migration decisions vary for different regions in the EU and in the world, which is why studies covering the EU and studies covering other world regions are included in this thesis. Thus, possible aspects can be covered which might not have been considered so far; this implies for future research that migration research has to be conducted globally on a global and on a regional scale in order to understand different motivations of migrating.

The last point under 4.3 shows the necessity of a higher degree of differentiation. That implies that also highly specialized research is necessary parallel to more general ones like this thesis and practical policies need a theoretical groundwork on which to be elaborated on a part of which this thesis seeks to provide.

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