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The demographic security of developed countries

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podpis

The demographic security of developed countries

Abstract

The thesis offers comprehensive systemic view on the problem of demographic security. The main objective is to create framework enabling the risk assessment of population composition and demographic changes of developed countries. The key variables are identified step by step in the thesis, their relations are drafted out and the methods of operationalization suggested.

Keywords: demography, security, policymaking

Demografická bezpečnost vyspělých zemí

Abstrakt

Práce se nabízí ucelený systémový pohled na problém demografickou bezpečnost.. Hlavním cílem je vytvořit rámec, pomocí něhož by bylo možné evaluovat míru rizika vyplývající z populační struktury a demografických změn pro vyspělé státy. V práci jsou postupně identifikovány klíčové proměnné pro demografickou bezpečnost, načrtnuty jejich vzájemné relace a navrhnout způsob operacionalizace.

Klíčová slova: demografie, bezpečnost, policymaking

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1. Introduction

The demographic security of the developed states is a field of research which has not been so far explored in a comprehensive way. The purpose of this thesis is therefore not in evaluating the empirical case studies, but in the creation of a basic framework of this field, establishing some basic relation between possible variables and maintaining the systematic approach to the problem while not resigning on the operationalization of various aspects. However, the aim is only to create a framework, not to create the empirical evaluation itself.

To the best of the author's knowledge there are no studies which deal with this issue in its entirety. The researchers either focus on the economic and fiscal impact, security issues which originate in migration of possible hostile individuals or on the social issues connected with reception of migrants into the society and their performance on the labour market. The relation of social cohesion and demographic change is mostly left to the non-academic writers, very often with radical right-wing political background. There are some studies dealing with similar issues, but almost all are focused on developing countries. Furthermore if some paper were created on a similar subject, its methodology usually does not enable us to make a comparable evaluation of dangers for more than one country in question. The methods used in this thesis will be compiled in such way that the international comparison should be possible. The second criterion according to which methods of evaluating will be chosen is their normativity. The author of this thesis is aware that it is very difficult to proceed in the field in question without baggage of normativity, but if the aim is to create a framework usable for international comparison, 'objectivity' is essential. Every society may have different priorities in population politics, but some goals are common for all subjects and methods should capture the influence of demographics precisely on these kinds of goals.

The third criterion will be connected with the time constraint of this analysis. The demographic systems are very 'slow moving', so the security in this field should be contemplated in the long run. On the other hand, in the very long run it is impossible to identify causal relations between variables. They start to seem somehow mutually dependent or with considerable influences of some intangible exogenous variables. Since the shortest time limit in which almost all demographic variables can be influenced and exercise real impact on security is approximately 40 years,¹ the time horizon of our analysis should be around 2050-2060. The methods should therefore be oriented on a rather long-term approach.

The subjects of research are states. How this choice will influence our methods will be mentioned in later parts, but in my opinion it is necessary to explain the epithet 'developed', which is used in the title of the thesis. The term developed country in this thesis means the state in which the second demographic transition² has undoubtedly began. Furthermore, the developed society should achieve some level of economic development. I will also restrict the scope of this thesis only to those states which are committed to the basic ideals of equality of races, nations etc. It does not necessarily mean that only fully democratic states are to be included, but the non-discriminatory approach with respect to the ethnicity should be a part of proclaimed principles of the state.

¹ Because of fertility – long-term fertility enhancement would take at least 5 years to fully develop and prove that the shift is not temporary, 20-25 years before the larger cohorts will enter labor market (be eligible to political participation, can enter military service etc.) and perhaps another 10 years before their impact would be really significant.

² For detailed explanation of the term see: Van de Kaa D. J., *The Idea of a Second Demographic Transition in Industrialized Countries*; Paper presented at the Sixth Welfare Policy Seminar of the National Institute of Population and Social Security, Tokyo, Japan, 29 January 2002

The choice of the subjects has to influence the approach which will be pursued. The view of problems will therefore be state-centered, not individual-centered. The thesis consists of several parts aiming at gradually analyzing the problem of demographic security in its entirety. In the first part the concepts of demographic security will be presented and the constraints of goals and policies of developed societies will be mentioned. In the second part I will provide the reasoning for methods, introduce the variables and their *raison d'être* and sketch the framework of demographic security as a complex system of intertwined relations between various variables. This part enables us to create borders within the complex phenomenon of demographic security and establish various aspects – economic, social, IR and institutional, without forgetting about the system as a whole. In the third part the economic aspect of demographic security will be analyzed and a method enabling ranking of countries will be provided. The fourth part will deal with the social aspect of demographic security, with the operationalization of social cohesion and its relation to demography. The fifth part will be oriented on analysis of possible interdependencies between demographic variables and the 'IR status' of the subject.

The last part will differ from the other parts dealing with various aspects of demographic security. The institutional aspect of the problem is going to be presented as a part of the framework in a similar way as with the others. Nevertheless, this part is somewhat more important (at least from the analytical point of view, actual importance may differ from subject to subject) than the preceding aspectual ones. The institutions in this thesis will be represented by government policies. Since the government policies are the tools, how the subjects can change their standing in the field of demographic security, the institutional aspect will deal with the most dynamic section of the system. The evaluation of what subjects can actually do to influence their future, how they perceive the problem, how they are able to articulate their long-term goals and allocate resources needed to attaining those goals will conclude not only this part, but also in a way connect the other aspects together.

These aforementioned steps should ensure that the approach taken in this thesis will be comprehensive, policy oriented and conclusively dealing with the methodological problems of demographic security in such way that the created framework will enable creation of various rankings of subjects according to their exposure to the challenges the demographic future will bring.

2. Definition of demographic security

2.1 Security and demography

The notion of security has changed rapidly during the past 30 years. Thanks to a widening and deepening concept of security propagated for instance (but not only) by the Copenhagen school,³ security is no longer viewed as something connected solely with the military capabilities of a state, but a much wider view is applied. The understanding of the term security in this thesis will be partially based on the following definition by Barry Buzan: "Security is taken to be about the pursuit of freedom from threat and the ability of states and societies to maintain their independent identity and their functional integrity against forces of change which they see as hostile. The bottom line of security is survival, but it also

³ See Wæver O., *Aberystwyth, Paris, Copenhagen - New 'Schools' in Security Theory and their Origins between Core and Periphery*; Paper presented at the annual meeting of the International Studies Association, Le Centre Sheraton Hotel, Montreal, Quebec, Canada http://www.allacademic.com/meta/p74461_index.html

reasonably includes a substantial range of concerns about the conditions of existence.”⁴ This definition from an article published in 1991 was used instead of broader concepts from the famous *Peace, Power and Security*⁵ because of its state-centeredness. In an article from 1984 Buzan is concerned primarily with the nature of the IR system. This thesis is on the other hand focused on the state level with state being the primary subject of analysis.

The term ‘maintaining of independent identity and functional integrity’ should be further explained. I will not follow rigorously Buzan’s definition, but take it as a starting point from which to explain the notion of security as understood in this thesis. Maintaining of independent identity will mean maintaining the position within the international system. This understanding is therefore more realistic (in the IR sense of the word) than the original Buzan’s one. Identity is not in this case connected with culture, language, religion etc. It simply means that the subject in the international system is able to act according to its wishes. The ability of the subject to do so depends (apart from the nature of the system) on its resources. Functional integrity could be translated as cohesion of the state (or society). As for the concerns about the conditions of existence, they can be economic, social, environmental etc. Securitization slowly advanced towards areas more loosely connected with the military capabilities of a state and its position in the international system while still keeping this position as one of the goals of the subjects.

Demographic security on the other hand cannot be incorporated in the exact same way as the economic, environmental or social one. Securitization of these areas can be justified not only as a determinant of the power in IR, but certain assumptions in these areas have to be met for a state to proclaim the ‘conditions of existence’ to be bearable. For instance a famine would certainly be an economic condition which most of the states would not be willing to bear. The same examples can be found in social affairs (refugees etc.) or environmental affairs (excessive pollution). On the other hand demography as a science is largely free of normative judgment. As far as economics are concerned one can say that *ceteris paribus*, the wealthier the better. In case of demography one cannot say that the younger population the better, nor apply simple normative judgment about fertility or ethnic composition of the population. The fertility, age structure, etc. must be therefore securitized via incorporation into some already existing frameworks of economic, social or military security. There are some exceptions. The composition of population with regard to skill or education levels can be viewed the same way as wealth – the more educated the better. Also the view on life expectancy is similar, although the higher life expectancy means the bigger budgetary pressure. These exceptions nevertheless do not alter the basic fact that demographic security has to be incorporated into the framework of other ‘securities’ and cannot be presented without the analytical connections to these other areas. This fact calls for use of the systemic approach, where the relevant variables and their relations will be at least briefly described before we can attempt to create some methods to evaluate the standing of various subjects. This approach will be presented in the part 3.

The basic units of this analysis are the states (or possibly entities like EU) and their official policies. This choice of subjects makes the only possible argument in favor of direct securitization of demography void. The one possible argument in favor of ‘direct’ securitization of demography is the fact that our definition of security is subjective. The forces of change which states or societies see hostile may be represented by certain religious or ethnic groups. The majority of society may wish to get rid of this group *per se*, without considering social or economic implications and see the potential size growth of this group as

⁴ Buzan B., *New Patterns of Global Security in the Twenty-First Century*; International Affairs (Royal Institute of International Affairs 1944-), Vol. 67, No. 3 (Jul., 1991), pp. 432

⁵ Buzan B., *Peace, Power, and Security: Contending Concepts in the Study of International Relations*; Journal of Peace Research, Vol. 21, No. 2, Special Issue on Alternative Defense (Jun., 1984), pp. 109-125

a threat. Such argument is generally correct, yet in case of this thesis it is misleading precisely because of the choice of subjects. The subjective feelings of hostility present in a population towards some groups are for the purposes of this thesis relevant only in case that they are formulated in the official state doctrine and policies. If they are not formulated, then these hostile feelings may present the threat for the state security from a social point of view, but we cannot consider them as a legitimate security concern.⁶ Since this thesis is oriented on democratic states, it is clear that the a priori refusal of a certain social, religious or ethnic group based on its identity is out of the question.⁷ Thus this argument is not correct for the subjects of the thesis.

The demographic security should also differ from the classical views of population in IR. In the traditional neorealist model the most visible demographic variable which determines the power of a subject is the size of the population. For instance Kenneth Waltz viewed the power of a state as a dependent on "...size of population and territory, resource endowment, economic capability, military strength, political stability and competence."⁸ In my opinion such a view is no longer acceptable (and was already highly questionable even in the time of the publishing of this article). It is undeniable that population size is an important fact, yet mere size due to the ageing and human capital development⁹ is no longer the sole demographic variable linked to power. This older view originated in times when the situation was much simpler – the age structure of virtually all countries was similar and size of the population was primarily understood as a powerful determinant of the potential size of an army and capabilities of economy. In the next 50 years, mere size of the population will cease to give us enough information for evaluation of demographic power and it is therefore necessary to view the demographic development as a more complex issue.

Consider the case of the EU. According to the EUROSTAT forecast the size of the population in the EU27 will change from 499 389 380 in 2010 to 505 718 541 in 2060.¹⁰ It represents a very mild increase of 1,1%. Actually in the last decade the increase was higher (app. 4%¹¹). Judging solely from these numbers one could say that the population size will not change in this period so the 'absolute' power stemming from the population should remain the same.¹² Yet the low fertility and increase in life expectancy will alter the structure of population in an unprecedented way. The effect of these changes on power or security will not be negligible. For example the old age dependency¹³ will double, possibly strangling the economy and military capabilities. The median age for the EU27 will rise from 40 to 47 years¹⁴, signifying the magnitude of ageing in the EU. The rapidly changing composition with

⁶ In other words the feelings are a threat, not the base for the concepts of security. To illustrate on an example: Nazi feelings towards Jews were such a base in the Third Reich, but nowadays these expressed feelings would be regarded as a threat to state security.

⁷ More about constraints of this nature in the following section. The basic argument is that as long as the state is democratic and committed to pursue of non-discrimination it cannot formulate expulsion of certain group as a official policy.

⁸ Waltz K. N., *The Emerging Structure of International Politics*; International Security, Vol. 18, No. 2 (Autumn, 1993), pp. 50

⁹ Some neorealists may acknowledge the relevance of these variables, but not the complexity of the issue and the intertwined relations between various subsystems (demographic, social, economic) of the state.

¹⁰ EUROSTAT;

<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tps00002&plugin=1>

¹¹ data from: EUROSTAT;

<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tps00001&plugin=1>

¹² The relative power in IR system is of course a different matter, because the population dynamics of other subjects can be of very different nature.

¹³ Defined as the projected number of persons aged 65 and over expressed as a percentage of the projected number of persons aged between 15 and 64.

¹⁴ EUROSTAT, Statistics in focus 72/2008.

regard to the age, ethnicity and human capital will require more data than just size to be evaluated.

The question therefore arises which factors should be included into the new analysis of population. From purely methodological point of view it is useful to divide the demographic variables to static and dynamic ones.¹⁵ The static variables provide us with the immediate information about the demographic situation of the subject in a given moment of time. The most important are the age and ethnic structure and human capital.¹⁶ Others, like the regional compositions of these three factors are of a rather supportive character. The population statics can serve as a powerful tool for evaluation of present power, yet for the policymaker to reach a decision, more is needed. The advantage of demography lies in the fact that forecasts can be made quite precisely for very long periods (most forecasts are made up to 50 years into the future, but some strategic forecasts, like the ones produced by the UN are made even for 100 years). To guess in 1960 the shape of the IR system of 2010 was next to impossible, to guess the shape of economy was very bold. On the other hand the population forecasts were quite correct (differing with actual results in percents rather than tens of percents). This is caused by the robustness of demographic systems (robust in an econometric sense of the word). To illustrate the robustness let's look again at the EU and the dependency ratio. The UN report¹⁷ states that if the EU wished to maintain the current (1995, since the report calculates with UN 1998 Population Revision) ratio, the EU would have to in average embrace *12,7 million* immigrants per year, the total population size in 2050 would reach *1,2 billion* and out of this *918 million would be the post-1995 immigrants or their children*. So we can with certainty assume that the changes hinted in the population forecasts are going to happen and the ratio will rise. The results may differ in terms of few percentage points, but to not use the analysis, which would give us relatively accurate forecasts for decades about one of the determinants of national security, would be a mistake. More information is therefore needed than just the current state of the population, since only the very long term policies can have a significant impact in the field of demography.

To understand better the demographic future, the population dynamics have to be included into the analysis. The basic factors determining future population are (apart from population statics) fertility, mortality (life expectancy) and migration. These are the primary factors which policymakers would want to influence, if their aim was altering the demographic future of the state.

Last but not least, when defining the area of our interest it has to be mentioned that this thesis is focused on the developed states. The importance of population size in our analysis is therefore further weakened. As mentioned before, demographic security cannot be postulated without connection to military, economic, social and environmental implications. One of these areas – environmental - is linked almost solely to the size of the population¹⁸. Since the population size in developed countries will not change dramatically,¹⁹ we can assume that the problems of environmental security connected with demographic changes will be negligible in comparison with the other aspects. Thus this thesis will focus on economic, social, military and IR factors and omit the environmental ones.

¹⁵ Similar division is used for example in: Nichiporuk B., *The security dynamics of demographic factors*; RAND Population Matters project, 2000, ISBN 0-8330-2780-8

¹⁶ The basic descriptions of variables will be presented in part 3.2.

¹⁷ <http://www.un.org/esa/population/publications/ReplMigED/EU.pdf>

¹⁸ The relation of environmental security and population 'mass' is clear not only from UN reports, but also from the programs such as *Population and the Environment: The Global Challenge* and related articles (http://www.actionbioscience.org/environment/hinrichsen_robey.html).

¹⁹ See for example UN report: *World Population Prospects, The 2008 Revision, Highlights*; http://esa.un.org/unpd/wpp2008/pdf/WPP2008_Highlights.pdf. The relative highest increase is expected in USA, but the population density will still be quite low.

To sum up, demographic security has to be created as a part of systemic evaluations of security threats, viewing the relations between demographic variables and other subsystems of society in their complexity. The policies, goals and outlooks of demographic security have to be more long-term than in most other types of security, because of robustness and because the lag between the introduction of policy and actual results is often several decades long²⁰.

2.2 The limitations implied by the human rights paradigm of developed societies

The developed liberal states and societies face a considerable terminological challenge. On the one hand traditional approaches about power emphasizing (from the demographic point of view) only population size and quantity are ceasing to function. On the other hand there is still considerable uneasiness regarding so-called population politics and ‘quality’ of population. History of the first half of the 20th century to a large extent discredited not only eugenics, but population politics in general, including pro-natalist policies (which can be viewed as expansionist) and worries about the ethnic structure. The victory of laissez-faire in this field seemed to be complete. Yet the attempts to influence fertility²¹ showed that states feel the need to do something about the population structure and dynamics. In this part of the thesis I will describe the ideological and terminological constraints of developed democratic states which we should consider in the next chapters when evaluating the ranking of countries. The purpose is clear – there are some steps which the democratic state should not consider²², some objectives which are not in line with the equality of citizens disregarding their ethnicity or creed.²³

It is possible to identify two groups of policies which can stir controversy – the immigration policies and pronatalist policies. In each area are practices which would be nowadays considered discriminatory and not permissible in democratic states. The rest of demographic variables are quite non-controversial. More precisely, the taboo of influencing life expectancy downwards and limit emigration seems to the author of this thesis as a matter of fact in developed democratic countries and there is no need for the analysis in this area. Also the universal suffrage, ability to stand for political office and generally de iure equality before the law are viewed as sine qua non assumptions of a democratic society.

As for the fertility policies, the situation is again quite simple. Apart from the obvious ban on eugenics the government cannot directly promote or discourage fertility growth only in certain identity (religious or ethnic) groups of population. Nevertheless, the indirect support for some, based for example on a hidden socioeconomic analysis of group status and subsequent tweaking of tax and social security systems cannot be ruled out. The purpose of divergence of fertility patterns just cannot be stated directly. Since this thesis is oriented on the officially stated security concerns of a state we will consider these kinds of policies as inadmissible. More difficult to decide is whether fertility policies can be viewed as a tool to enhance human capital. Eugenics is forbidden, but for instance there could be some special allowance for mothers with higher education. Even if such allowance was existent, the purpose for its introduction would not be stated in terms of bettering of quality of population

²⁰ Consider the increase in fertility and labor (or military) force. Even if the increase was huge (which is in light of past experience unlikely), the first impacts would be felt no earlier than 20 years into the future.

²¹ Spearheaded by countries with undisputable democratic tradition such as Sweden.

²² Such as deportations of citizens.

²³ Such as the notion that a state should only provide for those who belong to some ethnic group or religion.

or demographic security in general. On the other hand pronatalist policies aimed at the increase of fertility in employed part of population are quite common, be it labor market restrictions or tax credit.²⁴

Immigration and naturalization present a more difficult challenge. As mentioned before, the a priori refusal of certain group based on religious or ethnic identity is hardly acceptable. Yet the subjects could state as their policy objectives the preservation of a certain cultural background, the character of the country etc. The French constitution is a nice example of mixing democratic equality and the need to preserve basic cultural features. The equality of all people without distinction of origin, race or religion is postulated in Article 1, French as a state language in Article 2.²⁵ The preservation of language seems to be generally acceptable. The knowledge of language is also the primary subjects tested in many countries when one seeks to obtain citizenship.²⁶ However, the ethnic structure per se is an objective with very questionable acceptability. The desired overall number of immigrants is something that can be stated clearly. One can always point out to the social or economic implications. Their ethnic structure is a different matter. A democratic state can favor certain ethnicity, but there is no case of directly disfavoring one.²⁷ Even slightly indirect obstacles such as ethnic quotas are now largely abolished.

The case of US immigration laws represents a shift from the setting ethnic quotas to a more balanced approach and provide the example for shift which occurred in many countries. The Immigration Act of 1924 ("Johnson-Reed Act"), seeking to maintain certain ethnic structure of the country, divided immigrants by nationality and generally those from the eastern hemisphere were disadvantaged.²⁸ This act was adjusted in the 1960s on the basis of injustice.²⁹ The speech of Lyndon Johnson signifies the shift of what is viewed as acceptable in terms of population control: "This system violated the basic principle of American democracy - the principle that values and rewards each man on the basis of his merit as a man. It has been un-American in the highest sense, because it has been untrue to the faith that brought thousands to these shores even before we were a country. Today, with my signature, this system is abolished."³⁰

The key idea in the quote is the notion to value each man on the basis of his merit as a man. This principle is to large extent a crucial instrument of immigration policies of all countries. To distinguish merely on the base of origin ceased to be morally acceptable, the boundary between those admitted and those not are now set by merit. Although the definition of merit can differ, for the purpose of this thesis it is sufficient to note that merit can be represented by education (represented either by a certain wanted occupation such as IT and/or by knowledge of the language) and/or economic status (self-sufficiency). To sum up: in this thesis we will see the restrictions of migration based directly on race, ethnicity or religion as unacceptable in the modern discourse and therefore as inadmissible both as the goals and tools of policies regarding demographic security.

²⁴ The shift from direct subsidies towards tax credit was quite recently (2007) passed in the Czech Republic.

²⁵ <http://www.assemblee-nationale.fr/english/8ab.asp>

²⁶ Including USA, France and the Czech Republic.

²⁷ See for example German immigration laws (the treatment of ethnic Germans and Jews) or Israeli Law of Return.

²⁸ See

<http://web.archive.org/web/20080210025205/http://www.historicaldocuments.com/ImmigrationActof1924.htm>

²⁹ An interesting example of how perceptions of acceptability of certain measures change can be provided even by contextual reading of Wikipedia. The 1924 Immigration Law is filed in the group of articles entitled 'Racial Segregation'.

³⁰ The American Presidency Project, *Remarks at the Signing of the Immigration Bill, Liberty Island, New York, October 3, 1965*; <http://www.presidency.ucsb.edu/ws/index.php?pid=27292&st=&st1=>

The constraints which were created in this part of the thesis will help us in the next parts, not only to evaluate policy frameworks of the subjects, but they can also influence the importance of economic or social aspects of security. It is possible for latent ‘non-permissible’ feelings of the general population to translate into the hidden discriminatory agenda under the cloak of economic or social need.

3. The overview of the framework

3.1 Methodological introduction

The nature of demographic security calls for an interdisciplinary approach and to some degree methodological eclecticism will be necessary. On the other hand, the aim is to create methods which will enable us to determine at least ordinal ranks of countries in the areas of our interest. This means that the methods used will have to be similar in their ability to create ranks. Where the possibility exists we should not restrict ourselves to the ordinal rank, but aim at creating a cardinal one, which will provide us with much more information. The operationalization of aspects will therefore be conducted primarily by the means of quantitative approaches. Only in the aspects where quantification would be extremely difficult or not possible at all will I attempt to use some qualitative approach to determine at least ordinal rank.

In my opinion a chance to create cardinal values exists particularly in the aspects in which values of whatever we measure can be monetized. The monetization of costs or potential dangers is the easiest way of creating these kinds of ranks. It doesn't matter whether the costs are expressed directly in \$, % of GDP growth, percent of fiscal balance or by some other indirect means. The principle is always the same and enables us to count precisely the costs and establish not only rank, but the severity of a problem and gaps between various subjects as well. For this reason the methods used in the parts about social and economic aspects will originate in the domain of public finance, welfare economics etc. This eclecticism is needed not only because of monetization, but also because of interdisciplinarity of the issue.

The general problem of interdisciplinary issues lies in their complexity. Too often the choice is between a creation of a holistic system unable to allow the precise measurement and too narrow simplistic analysis capturing just a few correlations between various effects. I intend to avoid the shortcomings of both approaches by dissecting the holistic system into the aspects. It was mentioned in previous parts that demographic security has to be connected with other securities. By the aspect I will understand a subsystem which deals with one of these securities. For example economic security will be one of the aspects which we will be dealing with. That does not mean that economic security will be dealt with in its entirety, but the relation between the demographic variables and economic security will be analyzed. Each aspect will be allocated to one section of the thesis.

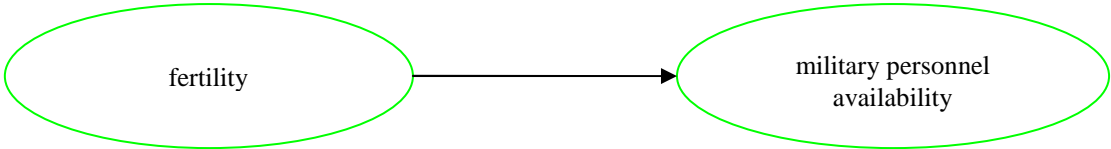
To create relevant aspects one has to consider not only the basic course of securitization in the past 20 years, but it is also necessary for every aspect to enable some inner analysis. Thus each one has to be further dissected into variables. The whole system should therefore be represented by the variables and their relations. In this framework the aspect will be a subsystem of variables. To illustrate on economic security: economic security can be represented by fiscal sustainability, overall performance of economy etc. The economic aspect of demographic security will therefore consist of aforementioned economic variables and independents on which these variables depend, particularly the demographic variables.

The term variable should be further explained. It does not necessarily mean the entity which could be expressed by a single number (such as fertility or life expectancy) and not even by a set of numbers (such as ethnic structure). It is rather a term labeling the basic unit of analysis.³¹ The relation ‘inside’ variables will be mentioned only if it is absolutely necessary. Let’s consider for example fiscal sustainability. It is true that this variable can be expressed by a set of numbers. Yet there are many ‘inside’ factors that we could analyze. The structure of debt, trade balance etc. could be a topic of a thesis on its own. The concept of a variable enables us to not treat those factors thoroughly. Generally those variables which have a closer connection with the topic of this thesis will be narrow while those mentioned only to provide the ‘whole picture’ will be wider.

Before we can start to analyze aspects it is necessary to establish variables and create a plan of the whole issue not only to set a boundaries of particular aspects, but because there can even be relations between the variables from the different aspects. There can be various interdependences between factors. In this part I will attempt to sketch a “map” of these interdependences and determine independent and dependent variables. This map will provide us with the necessary framework into which we can later set up particular aspects. The purpose of this analysis is not to provide a deep dissection of these relations, but mainly to postulate their existence, relevance and directness.

As for the independent variables, there is really none which would fully fit that description. We should therefore proceed in the following way: list all variables which we want to include, decide which of them we will treat as exogenous with respect to others and establish the linkages between variables. This process is best shown on demographic development. The next paragraph should illustrate the way we will pursue.

The demographic development itself is dependent on many intertwined factors (especially the migration is). Yet we can treat some variables as independent at least with respect to some other variables. A good example is fertility. Fertility is dependent on exogenous cultural influences (and ethnic composition, if fertility patterns differ between various ethnics within the state), maybe³² on several past government policies and their implications such as childcare availability, labour market regulation etc. But we can with certainty assume that it is not dependent on for example present numbers of available military personnel.³³ On the other hand the future availability of military personnel will be determined by economic factors and more importantly fertility 20-30 years into the past, when the age cohorts of the recruits were born.³⁴ We can therefore establish that the direct relation between fertility and availability of military personnel is that the availability is the dependent variable while fertility is the independent variable.



A similar quick analysis of all possible connections between variables should provide us with the needed basic framework for the next stages of analysis. It is clear that since this part is

³¹ For further informations and detail explanation see Van Evera S, *Guide to methods for students of political science*; Cornell University Press, 1997, p.11

³² Whether the government can actually influence fertility in the long term is still an unresolved question and several researchers came to completely contradictory answers. We will deal with this problem in part 7.3.1.

³³ If we assume that in the past and at the present moment demographic structure in the relevant age cohorts is not correlated with this availability.

³⁴ And in a more general way on a past fertility 20-65 years ago determining the strength of the labor supply.

basically an overview, there will be necessary simplifications. It is therefore imperative that in this part we will list only those connections which can be regarded both as relevant and direct. For instance, there could be a dependency between life expectancy and defense investment, because higher life expectancy means a pressure to budgets, which could trigger diminishing of defense investment.³⁵ This kind of dependency we should regard as too indirect and express it either via some intermediate variable or not at all. As for the relevancy, let's consider the relation between culture and fertility. The cultural background influences fertility without a doubt but what about vice versa? We could argue³⁶ that fertility patterns in the long term influence the culture, more precisely the view of the "natural" size of a family and thus the general cultural view. We should regard this kind of influence as irrelevant. Not only are these changes very gradual and the limit of 40 years for analysis is limiting, but they are also hardly attributable and the correlation of observed fertility and cultural views can be explained in many other ways. For a relation to be relevant there should be a clear timescale, a mechanism of dependency and the "transmission" should have a visible impact.

A last remark before the listing of variables needs to be done about the time dimension in our analysis. Obviously in the sufficiently long term, 'everything is connected to everything else'. That is why the 40 years boundary has been set up, to avoid a too holistic and blurred analysis. As for the implications, the following rule will be applied: The independent with respect to variable X is that variable whose present or future 'values' are not determined by the present values of variable X.

The list of relevant variables which should in my opinion be included in the analysis is as follows:

Demographic variables (population dynamics): fertility patterns, mortality (or life expectancy), migration patterns.

Demographic variables (population statics): age structure, ethnic (cultural-religious) structure, education or more generally human capital composition (HCC).

Economic variables: GDP growth (performance of economy), fiscal sustainability.

Social variables: Social cohesion (support for extremist movements etc.), the power distributions among various ethnic groups (exclusions, power-sharing).

Institutional variables: Attitude of government towards migration (AGM), integration policies (AGI), pronatalist (AGN) policies.

Military and IR variables: availability of military personnel (AMP), defense investment, power projecting capability (PPC), international system status (IR).

Miscellaneous variables: technological progress, cultural background of the country (culture).

This list should include all variables which seem to the author to be relevant vis a vis impacts of population development to the security of a state. Some of the variables, particularly those

³⁵ Or the other way around, high life expectancy means more human capital, higher GDP and thus higher defense investment.

³⁶ and there are papers corroborating this argument, for example: Goldstein J., Lutz W., Testa M. R., *The emergence of sub-replacement family ideals in Europe*; Population Research and Policy Review; Dec 2003.

demographic, will be analyzed more rigorously, some, such as the cultural background or technological progress will be taken to a large extent as exogenous. In the following part the choice to include each variable will be defended and each variable will be examined as the possible independent with respect to other variables.

Sadly apart from economic aspect (and social cohesion) there is generally almost none relevant literature on causal relations between demographic variables and the others.

3.2 System and variables – introduction, dependencies

3.2.1 The demographic variables

The easiest is to defend the reasoning why to include the demographic variables. The thesis is dealing with impacts of changes in the composition of population, thus the population composition has to be properly analyzed. Fertility, life expectancy, migration and age structure are basic features of every demographic system (with mortality, which in our case is 'hidden' in life expectancy). The inclusion of these parameters is therefore non-problematic. Problems could nevertheless occur in the determination of their relation to the other variables. Starting with fertility, its levels will surely influence the future age structure of the population. In this case the dependence is very strong, much stronger than between most of the other variables. Moreover, if there are different fertility patterns among various ethnics, fertility will also have an impact on future ethnic composition. As mentioned before, fertility can influence AMP. The last relation worth mentioning is the connection between fertility and AGN. The views of the government whether to pursue some pronatalist policy will be formed by some cultural views regarding ideal family size, by the availability of funds for such activities and by the actual level of fertility. The connection with other variables is not considered to be sufficiently direct and relevant. The economic variables are determined not directly by fertility but by other demographic parameters, social variables are also not directly connected with fertility. The same is true for the rest of military and institutional variables. The relation with miscellaneous ones is unclear, but there are no relevant reasons to suppose that fertility directly influences technological progress. The relation between fertility and culture has been dealt with before. Generally, I plan to treat both miscellaneous variables as 'black boxes' as much as possible. The determinants of the cultural background and technological progress are very interesting issues, yet very far from the objectives of this thesis and so complex that just brief descriptions would probably suffice for a book.

In my opinion, life expectancy has only one direct impact. The age structure, mainly the shape and magnitude of the upper half of the so-called life pyramid depends on this value, or to be more specific, on mortality patterns.³⁷ The other demographic indicators are not influenced by this number. This may be questionable in the case of HCC, but life expectancy is regarded as the limiting factor to HCC only when very low. Since this thesis is oriented on the developed countries where life expectancy universally exceeds the retirement age, it should not be an issue. As for the social, economic, military and institutional variables, there is no relevant direct connection; all possible connections (if there are any) are via age structure. Same applies to the miscellaneous ones.

³⁷ I use life expectancy instead of mortality for several reasons. First, life expectancy is a single value whereas the mortality is a complex phenomenon and as such it is much harder to describe. I'll always prefer simpler tools where possible, the analysis is going to be technical enough without unnecessary complications. Second, the idea of life expectancy is easily comprehensible to anyone; the complexity of mortality makes it very hard to comprehend the meanings of various numbers for a person not familiar with the peculiarities of demography. Last but not least, similar simplification is used in the reports of Ecofin about ageing, which I will use as a main source in the part dealing with the direct economic impacts of population development.

Migration is a more complex and interdisciplinary issue than the previous two variables. As for the relation to other population dynamics components, there are only indirect connections possible. However, the population static can be influenced by migration very significantly. The age structure can be influenced, as usually the structure of migrants differs significantly from the age structure of the whole population. The ethnic structure can be influenced as well for obvious reasons. Apart from the case of Russia³⁸, most of the immigrants are of a different ethnic and/or religious background than the majority in their new home. The structure of emigrants on the other hand may fasten the ethnic changes by the outflow of 'native' population. HCC can be altered in many ways. Poorer 'developed' (outflow) countries may experience brain drain, richer (inflow) countries may experience either pull effect from these drains or on the other hand an inflow of low-skilled workers, which worsen human capital per capita. The economic variables are influenced only indirectly. As for social cohesion, migration can have an impact of its own disregarding the actual ethnic structure (consider the impact of relatively modest inflow of Roma after WWII to the Czech Republic). In my opinion, the rest of the variables (institutional, military, IR, miscellaneous) have no direct connection with migration.

The age structure is a crucial variable with many implications, most importantly in the domain of economy. It is determined by the population dynamics variables and serves as an intermediate between them, GDP growth and fiscal sustainability. One could question is whether the better approach would not be to skip age structure entirely and focus on the direct impact of population dynamics on the economy. Yet the limited time scale makes it practical to include the age structure. It is true that the present age structure is a result of past population dynamics, but I decided to limit myself in time to prevent holistic super-systems. The present age structure (in time $t=0$) has to therefore be considered as independent. The age structure should not have a direct impact on population dynamics factors.³⁹ The question is whether age structure will influence HCC. If we consider HCC in per capita terms it makes sense to adjust its values to the age structure automatically. The potential relation between age structure and educational attainment is an interesting problem, yet too distant to the objectives of this thesis to deal with at length.

The relation between age structure and both economic variables is clear and straightforward. It is also in my opinion the best described relation in existing literature. We will focus on describing this relation in part 4. Power distribution should not be influenced much by the age structure (apparently there can be correlation because of for example different percentage distributions of age cohorts eligible to vote in various ethnicities). Yet for the purpose of this analysis I will consider this as a domain of the ethnic structure. The institutional variables can be influenced only indirectly via cultural background changing with an aging population. The bigger problem is presented by the relation of age structure and AMP. We already postulated that AMP is dependent on fertility. But why not perceive this relation as indirect as we did in the case of fertility and economic variables and use the age structure as an independent? The directness is in my opinion in this case justified by the lack of aspects other than fertility influencing the AMP. In the case of the economic variables the age structure functions as an aggregate variable to sum up the influence of life expectancy, fertility and migration. In this case life expectancy and migration have no impact, so we can take fertility as an explanatory directly. For this reason I do not intend to include age structure

³⁸ for further information: DaVanzo J., Grammich C., *Dire demographics: population trends in Russian Federation*; RAND Population Matters project, 2001, ISBN 0-8330-2930-4

³⁹ To be more precise, from a purely demographic point of view age structure has an impact on natality, not on longitudinal fertility. It also has an impact on mortality, but should not influence life expectancy. The introduction of the age structure is yet another reason to prefer life expectancy over mortality and fertility over natality in this analysis.

as an explanatory variable for the AMP. As for the rest of the variables, there is no direct relevant linkage to be observed.

The variable 'ethnic structure' should be clearly defined. By ethnic structure I mean the composition of population with respect to national, racial and religious identities, its regional dislocation, and also the differences in age composition between various ethnics. As for the relation to other variables, ethnic composition can, due to the differences between fertility rates among various ethnics, influence fertility rate of the country. Life expectancy should not be directly influenced. A question arises in the case of the relation between migration and ethnic structure. The latter is no doubt influenced by the former. But one can argue that ethnic structure can act as a pull effect for immigrants, which for example already have relatives within the host country, so that the ethnic structure can influence the structure and magnitude of future migration. Whether this pull effect is determining, or whether others such as colonial history are more important, is hard to establish. Yet we can assume that some pull effect is present. According to relevant theories, so-called migration networks play an important role in determining migration flows.⁴⁰ Another problem arises when dealing with the connection between age structure and ethnic structure. There could be correlation due to the previously mentioned different fertility rates. Nevertheless, we can regard this as an indirect relation and consider fertility as intermediate variable. The relation between ethnic structure and HCC is influenced by our constraints set in part 2.2. We should not presuppose the relation between these two variables.

There is no doubt that the ethnic structure can influence both social variables. Ethnicity may act as a fuel for civil unrest (thus influence social cohesion) and the ethnic composition of the population and its dislocation can influence power division, if not for other reasons then surely for simple election arithmetics. As for the rest of the variables, the economic ones we should not consider directly related for the same reason as HCC. For institutional, military and IR ones I do not see a clear mechanism for a direct relation, with the possible exception of IR. It may happen that large diasporas can trigger some sort of a dependency on the country of origin (or vice versa) in the matters of dealing with problems of these diasporas. For example sharing of know-how for dealing with matters of different culture, helping with problems of crime organized on an ethnic base etc. can establish some sort of linkage with the country of origin. Ethnic structure can directly influence the culture. The cultural background depends on religious and ethnic composition directly, including aspects which interest us most, such as attitude towards migration, integration, family size etc. As for the ethnic structure and technological progress, the relation could be only indirect and moreover there is the same constraint as for HCC.

The human capital composition (HCC) was included into the analysis for several reasons. First to establish an intermediate variable between migration and GDP growth with respect to education and generally to fill gaps between the skills of migrants and the 'native' population. It is also necessary to point out the connection between fiscal sustainability, GDP growth and the 'quality of population'. Generally, it should represent the educational attainment of the population and its skills. Since it should act primarily as an intermediate variable, the number of relations is limited. It should not have direct relation (as an explanatory variable) to other demographic variables with one exception. One could argue about the connection of HCC to fertility. It has been observed on many empirical studies and also explained theoretically⁴¹ that women with higher education tend to have fewer children.

⁴⁰ See for example Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A., Taylor J. E., *Theories of International Migration: A Review and Appraisal*; Population and Development Review, 19 (3), 1993, pp. 431-466.

⁴¹ Nice theoretical explanation is provided in Becker G.S., Murphy K. M., Tamura R., *Human Capital, Fertility, and Economic Growth*; The Journal of Political Economy, Vol. 98, No. 5, Part 2: The Problem of Development:

Thus the change in HCC could influence fertility. As for the relation to economic variables, HCC is one of the principal components influencing GDP growth.⁴² The social variables should not be directly influenced. There can be doubts in case of social cohesion. It is possible to claim that the level of education can influence the perception of some controversial issues. Yet it is more proper to attribute these influences to the general cultural background. The reason is straightforward. The culture of a country is somehow intertwined with the general education attainment of its population. To sort out where the boundaries are and what is the exact nature of the interdependencies in this area would be a topic for a thesis of its own. For the sake of simplification I therefore decided to treat HCC as a variable connected purely with non-cultural issues. If the matter has something to do with the ideological orientation it falls under the category of culture. If we decide to treat HCC in this way it is clear that the possible connections between HCC and institutional, military or IR variables are indirect. As for the miscellaneous variables, HCC is usually connected with technological progress. In this case we have a clear vision of a transmission mechanism, and there is also the corroborative research.⁴³ The most problematic is the relation to culture. There is a relation, but again to determine which variable is explanatory is close to impossible. For the reason listed above I therefore decided not to deal with the possible influences.

3.2.2 The economic and social variables

The inclusion of economic variables is easily defensible. The economy of the country is one of the primary sources of power in IR⁴⁴ and a source of military capabilities. The demographic development and economy is clearly linked and economic variables tend to have a great effect on institutional and social variables. As for the division into two variables, I think that although GDP growth and fiscal sustainability are linked, the relation between them is not such to justify the merge into a single variable. There can even be a situation when GDP growth (if fueled by ill-conceived government spending) can actually endanger the fiscal sustainability. The usual case is nevertheless that higher GDP growth promotes fiscal stability via increasing government revenues.

The relations of GDP growth to demographic variables are apart from migration only indirect (treating GDP growth as an explanatory variable). As for migration, the overall level of economic performance rather than growth rate determines the economic incentives to migrate. Nevertheless, GDP growth determines the 'hunger' for labor force, so there is a direct connection between these two variables. The economic 'wonder' of post-war Germany and immigration from Turkey may serve as an empirical example. The fiscal sustainability and GDP growth are closely linked, as mentioned before. Social cohesion is also partially determined by GDP growth, as social unrest is less likely in societies experiencing growth

A Conference of the Institute for the Study of Free Enterprise Systems (Oct., 1990), The University of Chicago Press, pp. S12- S37. Nevertheless this article is a rather technical one. Most comprehensive empirical study is in my opinion: Castro Martin T., *Women's Education and Fertility: Results from 26 Demographic and Health Surveys; Studies in Family Planning*; Vol. 26, No. 4 (Jul. - Aug., 1995), Population Council, pp. 187-202. Or one can easily see the correlation simply by looking at the commented data. For the Czech Republic: [http://czso.cz/csu/2006edicniplan.nsf/t/360034A5ED/\\$File/400806a1.pdf](http://czso.cz/csu/2006edicniplan.nsf/t/360034A5ED/$File/400806a1.pdf)

⁴² The basic concept was introduced in: Schultz T. W., *Investment in human capital*; The American economic review, Vol. LI, March 1961, part 1, pp. 1-17.

⁴³ See for example: Nelson R.R., Phelps E. S., *Investment in Humans, Technological Diffusion, and Economic Growth*; The American Economic Review, Vol. 56, No. 1/2 (Mar. 1, 1966), American Economic Association, pp. 69-75

⁴⁴ Nevertheless in this thesis the direct relation between the economy and IR will not be done. It is a very complex issue and very distant from the topic of the thesis.

rather than in societies experiencing recession or even depression. However, growth with hugely uneven distribution of wealth can also have adverse effects.⁴⁵ The institutional values should be generally more influenced by fiscal sustainability with the exception of AGM. The previously mentioned relation is well documented.⁴⁶ The relation to the military variables can be regarded as indirect. The correlation between innovativeness and GDP has been already dealt with, both variables can be from a certain point of view regarded as explanatory – thus there is probably some form of autocorrelation.

The second economic variable – fiscal sustainability is more closely linked to institutional variables in our model – the possibilities of public budgets can influence pronatalist policies (AGN) and integration policies (AGI, for the various language courses or social workers, also costs a lot of money). Social cohesion can relate to transfers, which are possible only if the budget allows it. Life expectancy is partially determined by the level of available healthcare and thus also by the possibilities of public budgets. Finally HCC perceived as an education level also depends on fiscal stability and the ability of a government to support qualitatively and quantitatively enough educational facilities. All of these relations are quite easy to perceive. As for the relation to GDP, it is true that in extreme cases, such as possibilities of state bankruptcy or the need for a substantial fiscal tightening, fiscal sustainability can determine GDP growth. Again, for the purpose of simplification, I decided not to go into a deep economic analysis, which has no relation to the primary objective of the thesis, and treat GDP growth as primarily explanatory, because in this direction the dependence is stronger. The defense investment as a part of public budget is clearly influenced by fiscal sustainability. The miscellaneous variables have no direct relation with a clear transmission mechanism. There could be doubt about the technological progress and argument about the government support of science, but one can see that by establishing HCC as an intermediate variable the problem is solved.

The social variables are harder to define than the economic ones. There is a lack of clear monetized value. As for the measurement of social cohesion, I intend to establish some methods partially based on welfare economics in the part dealing with this particular aspect.

The basic understanding of this term is, in spite of the difficulties with measurement, quite clear. EU Directorate General of Social Cohesion push through a rather wide definition: “Social cohesion is the capacity of a society to ensure the well-being of all its members, minimising disparities and avoiding marginalisation.”⁴⁷ I will use this definition with a certain limitation, considering a social cohesion to be rather a social than an economic term. Also, the avoiding of disparities will not be the primary goal but the prevention of social unrest and/or tendencies to support movements aiming at promoting ethnic violence. The definition coined by the report ordered by the House of Commons⁴⁸ is with respect to the aims of this thesis more useful: “...cohesive community is one where: there is a common vision and a sense of belonging to all communities, the diversity of people’s different backgrounds and circumstances are appreciated and positively valued, those from different backgrounds have similar life opportunities and strong and positive relationships are being developed between

⁴⁵ Alesina A., Perotti R., *Income distribution, political instability, and investment*; European Economic Review Volume 40, Issue 6, June 1996, Pages 1203-1228

⁴⁶ Actually the GDP growth in this case often influences migration via unemployment rate. See for example: Hooghe M., Trappers A., Meuleman B., Reeskens T., *Migration to European Countries: A Structural Explanation of Patterns, 1980-2004*; International Migration Review, Volume 42, Number 2, June 2008, pp. 476-504(29)

⁴⁷ http://www.coe.int/t/dg3/default_en.asp The question remains whether such a wide definition has no alternative institutional motive.

⁴⁸ House of Commons, ODPM: Housing, Planning, Local Government and the Regions Committee., *Social Cohesion, Sixth Report of Session 2003–04*; Volume I, Ordered by The House of Commons to be printed on 5 May 2004

people from different backgrounds in the workplace, in schools and within neighborhoods.” The disparities may well be one of the causes of deteriorating social cohesion, but since this thesis is not directly oriented on this issue I will mention this causality only with connection to the demographic factors. As for the relation to other variables, I intend to treat social cohesion as one of the main ‘outputs’ of the system, thus regarding it generally as a dependent variable. One can argue that in the long term social cohesion may determine the performance of the economy, position in the IR system or even demographic factors such as life expectancy (in case of civil wars). Nevertheless, if social cohesion were in such a state that one of these relations would really occur we could conclude that the government already failed to prevent deterioration of society due to the challenges of demographic security. This allows us to treat social cohesion as a fully dependent variable.

The second social variable – power distribution - is introduced in order to find a suitable intermediate variable between ethnic structure, culture and social cohesion. I understand power distribution as a distribution of possibilities for various social groups (in our case primarily ethnic groups, secondarily perhaps age cohorts) to articulate and push through their agenda in the political and economic system of the society. This may be represented by the number of representatives in various political offices, the set-up of social transfers etc. The relation to other variables has been already hinted. Power distribution could influence social cohesion (the reasoning for this relation will be presented in the part dealing with social cohesion specifically) and no other direct relation exists in which power distribution would be the direct explanatory variable.

3.2.3 The institutional IR and miscellaneous variables

The institutional variables are introduced in order to evaluate the government policies with respect to the key aspects of demographic security. The pronatalist (or family) policy and migration policy are the primary tools of a government with which the demographic situation can be influenced. The integration policy (or more generally the set of policies to enhance mutual understanding and support in multi-ethnic societies) is the primary instrument of the government to maintain social cohesion in societies with a dynamic multiethnic structure. The evaluation of these policies will be one of the aspects where I plan to use a qualitative approach, for the deep evaluation based on statistics would probably require a different method for every country, suitable for its particular set of policies. Since this thesis aims at creating a method to establish a rank of countries, the use of different methods for different countries is clearly not viable. The relation with other variables is corresponding with the aforementioned *raison d’être*. The integration policies (AGI) can be viewed as an explanatory to social cohesion and pronatalist policies (AGN) as an explanatory to fertility. A slightly different situation is in the case of migration policies (AGM). AGM is explanatory to migration, but in many cases the migration policies require international cooperation. The support of other countries often requires some sort of concessions, especially in cases where the interests of the outflow and inflow countries differ. It is therefore not reasonable to expect that certain sets of active migration policies deepen the dependency on cooperation in international relations.

Military variables are included because of the modeling of two possible influences on demographic changes – the crowding out of defense investment because of an increasing demand for healthcare, long-term care and retirement benefits, and more importantly restraint placed on the numbers of military personnel due to diminishing fertility. The division between three separate variables is purely functional. The main output is power projecting capability (PPC), while the defense investment and available numbers of military personnel can be

regarded as inputs. The direct relation where the military variable is an explanatory is in my opinion only with respect to IR. The fact that power in IR is influenced by PPC is obvious. There is a possibility of the same argument as in the case of social cohesion –PPC can in extreme cases influence performance of the economy and, in case of war, even age structure, life expectancy etc. Similarly as with social cohesion, this may occur only in extreme circumstances.

The IR variable has been set-up to illustrate the impact which demographic changes can have on international standing of a country. The international standing itself (IR) is to be regarded in the following parts as a solely dependent variable.

The most difficult is to define the miscellaneous variables, especially ‘culture’. As mentioned before, this variable will be dealt with for the most part as a black box. The term itself can have dozens of meanings. The following definition is in my opinion sufficient for the purpose of this thesis: “Culture is a shared, learned, symbolic system of values, beliefs and attitudes that shapes and influences perception and behavior -- an abstract "mental blueprint" or "mental code.”⁴⁹ In this thesis, culture will be again considered only in relation to the problems of demographic security. The systems of values or beliefs which are relevant are therefore those about family size, beliefs about the desirability of social change, importance of social cohesion, importance of having a national state or on the other hand the toleration of other ethnicities etc. These factors should be all mentioned despite the fact that I do not intend to provide a deep analysis of their origin – such analysis would be way beyond the scope of the thesis. Yet these factors cannot be omitted either. If one would resort to just the more tangible variables such as GDP growth or demographic variables, the results would lack explanatory power in many cases.⁵⁰ Culture could be therefore understood as a sum of historical, philosophical, artistic, mass media or other relevant influences which shape the minds of the population in aforementioned factors (no matter what the origin). The fact that I do not intend to research the background of this shaping corresponds with the fact that I treat culture purely as explanatory with one exception.⁵¹ As an explanatory variable culture is by definition influencing fertility, AGN, AGM, AGI and last but not least power distribution. The influence of culture on power distribution can be understood as a level of tolerance with power-sharing in a multiethnic society and intergenerational solidarity. The question is whether to regard the influence of culture on social cohesion as direct. I decided not to in order to be able to specify integration policies more clearly and to dissect the influences of fiscal matters and culture.

The last variable - technological progress has been included for two reasons. First is the possible impact of changes in HCC, which is difficult to measure, but too important to omit. The second is the connection with PPC. One cannot fail to mention that the abilities to project power are still more connected to technological excellence and still less connected to manpower. When the effects of diminishing manpower will be analyzed, technological progress has to be mentioned too.

The whole system of demographic security can now be summarized into one scheme. All the assumptions, simplifications and restrictions of this lay-out have been mentioned. Although this scheme may appear unnecessary complex, only the rigorous dissection of variables enables us to work in following sections with the particular aspects (which represent certain ‘areas’ of this scheme) without being too holistic or failing to mention important

⁴⁹ <http://www2.eou.edu/~kdahl/cultdef.html>

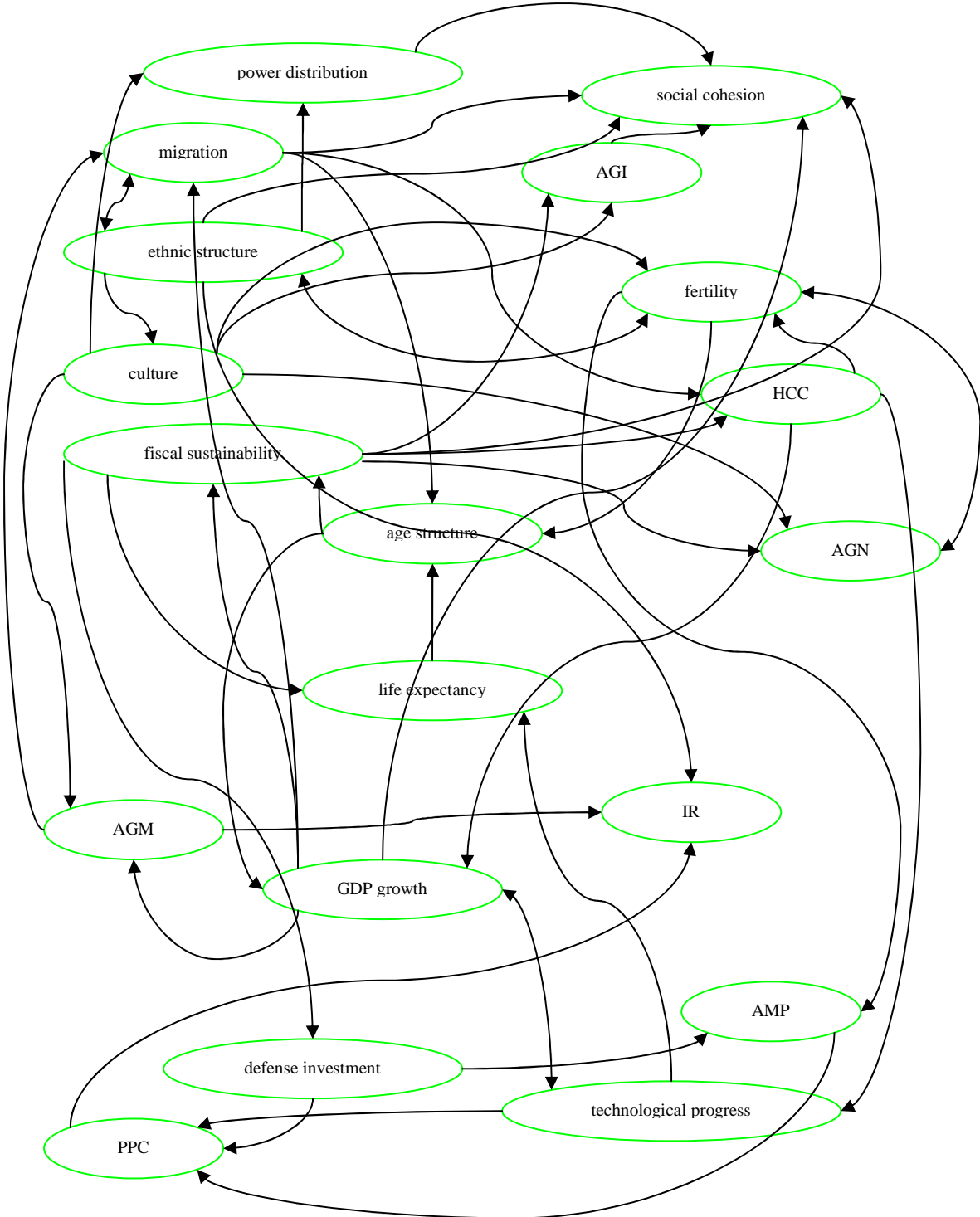
⁵⁰ A good example could be the ethnic diversity and civil war in the 20th century. A simple regression would probably show that more diverse states are more likely to experience civil war. Yet this quantitative analysis would not explain Switzerland, USA etc., or Spain.

⁵¹ The radical shifts in ethnic structure can trigger radical changes in culture assuming that the cultural background of ethnicities varies.

factors. The picture below illustrates the complexity of the problem and can serve as a map into which the boundaries of aspects will be set.

Chart I.

The 'map' of demographic security



4. The economic aspect of demographic security

Economic security can be viewed as the ability of a state to maintain the functional integrity on such conditions that the future development and the standards of living of citizens achieved in the past will not be endangered. Thus the two most important variables which will be taken here as an ‘output’ are GDP growth and fiscal sustainability. Both combined to a large extent determine whether economic security is going to be attained on an acceptable level. Ranking of countries in this aspect will therefore be established by the following measures: the changes in GDP growth caused by demographic changes and changes in percents of GDP allocated to the needs of the pension system, healthcare, long-term care etc. (in short, the impact on fiscal sustainability) triggered by ageing.

Analysis of the economic impact will slightly differ from the other parts dealing with aspects. The reason is simple. The impact of population changes on the economy is generally acknowledged, thus there is no need for the elaborate defense of the inclusion of this aspect. There are whole academic journals devoted just to the analysis of problems of population economics⁵² and I do not feel that the scope of this part permits me to achieve substantial innovation in this field. Especially the ageing of population has been analyzed in great depth. The most relevant paper which I will use is the report of EU on ageing.⁵³ The depth of analysis is signified by the mere size of the document. On approximately 450 pages only the methodology and results of the analysis are presented without the computations. This part will therefore be much more descriptive and derivate than the other parts and I will use the research already published in the field of public finance to present the overall impact on demographic changes. Nevertheless, the economic impacts are so important that they have to be mentioned and in my opinion most papers do not have enough ‘aggregated’ findings. The picture on the next page illustrates the boundaries of this aspect.⁵⁴ The goal is to present a method of evaluating security threats via analyzing the linkages between variables as presented in the picture. The evaluation of linkage between fertility, age structure, GDP growth, life expectancy and fiscal sustainability is going to be the core of this part because these relations have the gravest impact on the economy. The relations between HCC, migration, fertility and GDP growth have a lesser impact with respect to the main topic of this part.

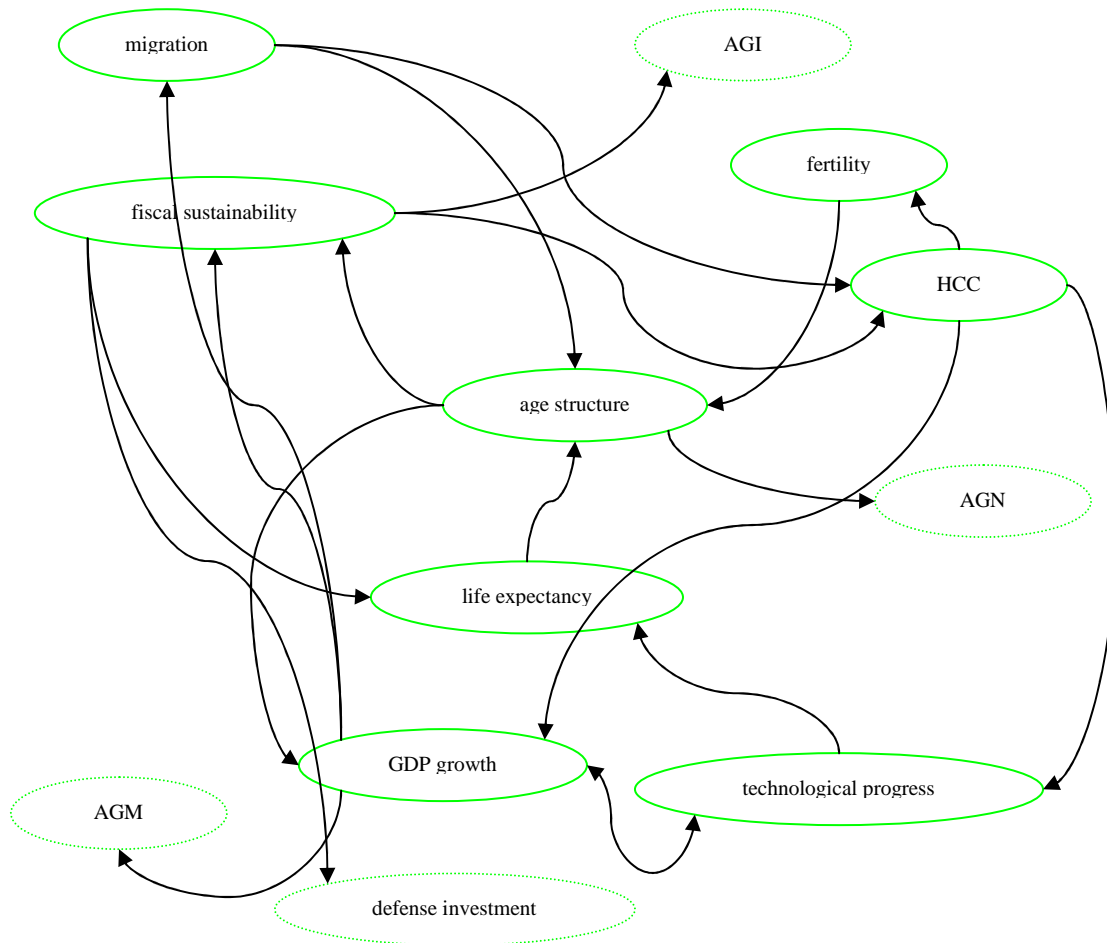
⁵² Such as Journal of Population Economics.

⁵³ Joint Report prepared by the European Commission (DG ECFIN) and the Economic Policy Committee (AWG), *The 2009 Ageing Report: economic and budgetary projections for the EU-27 Member States (2008-2060)*;

ISBN 978-92-79-11363-9.

⁵⁴ The variables marked with a punctuated line are the ones which I will analyze in another aspect. They are present in the diagram to mark the inter-aspect dependencies.

Chart II. The ‘map’ of demographic security – economic aspect



4.1 The impact of migration, fertility and life expectancy on the age structure⁵⁵

The primary explanatory variable in this aspect is the age structure. It determines the needs of the social and healthcare system and determines the labor input. Before we evaluate the impact of the age structure it is important to mention the relation of variables within the demography. This relation is, as mentioned before, directly causal. The causality is in this relation absolute, which means that there are neither other variables nor unmentioned exogenous factors which could influence age structure apart from these three variables. It is also important to mention that the age structure is ‘autocorellative’. The present age structure actually influences the future age structure more than any other variable in the short term.⁵⁶ Fertility and life expectancy are variables which determine the age structure and more importantly the dependency ration in the long-term. Migration can on the other hand directly

⁵⁵ This paragraph is included to provide basic information about the magnitude to which the demographic dynamics can influence the shape of statics. It *is not* a deep demographic analysis; the purpose is only to hint the limits of influence on various variables.

⁵⁶ It can be viewed for example on the natality gap caused by WWI. This gap was still recognizable in the age structure of many European countries ten years ago.

influence the age dependency ratio only in the short or medium-term.⁵⁷ Research focused on replacement migration showed that even large immigration waves cannot but postpone the ageing of the population.⁵⁸ On the other hand in the sufficiently long term fertility and mortality are practically the *sole* determinants of the age structure.⁵⁹ This fact has implications not only for the economic dimension of demographic security, but more importantly it should be reflected in the attitude of governments.

4.2 The age structure – influence on GDP growth

The impact of age structure on the economic variables is one of the most daunting challenges of the developed world, especially concerning European countries. There are two basic mechanisms through which a change in age structure can influence economy – a change in the labor supply or a change in demand for several public sector supplied goods such as healthcare. The first one represents the relation between age structure and GDP growth, the second one the relation between age structure and fiscal sustainability.

Let us first analyze the former relation. The movement of GDP growth can be decomposed⁶⁰ into productivity and labor input. Productivity can be further decomposed into total factor productivity (TFP) and capital deepening. Total factor productivity can be linked to technological progress; capital deepening has no relation to the topic of this thesis. As for the labor input, its influence consists of the employment rate,⁶¹ the share of the working population (which is determined by the age structure) and the change of average hours worked. If we would like to determine the overall GDP and not GDP per capita, then the total population should be included as well. But as the total population should not change much in most of the developed countries and GDP per capita is far more relevant in our consideration, we will exclude this factor from our analysis of this aspect.

A crucial step is to determine the impact of the share of the working population. Before we continue to the actual model, it is important to note that the lowering of the labor input does not necessarily mean a catastrophe. For instance in Western Europe the labor input as a whole has been shrinking since WWII.⁶² It is also important to note that increases in employment rate can outweigh the impact of age structure, and even if this would not be the case it is still reasonable to expect that the increase in TFR will outweigh the possible loss in labor input. Still, losses in GDP growth due to the age structure will be felt especially when considering their relative position to countries which will not be subjected to ageing in similar way.

The model usually used in this analysis is called the Overlapping Generations Model (OLG). It is one of the basic models used in macroeconomic analysis. I decided not to include the detailed equations in this thesis, since their description would be several pages long and

⁵⁷ The long term in this case is approximately 40 years.

⁵⁸ Given the assumption of the same fertility patterns of newcomers. See for example: Meyerson F. A. B., *Replacement Migration: A Questionable Tactic for Delaying the Inevitable Effects of Fertility Transition*; Population & Environment, Issue Volume 22, Number 4 / March, 2001 ISSN0199-0039, pp. 401-409. The implications of this research on feasibility of policies will be mentioned in part 7.3.2.

⁵⁹ The mathematical proof of this claim was provided long ago in: Lopez A., *Asymptotic Properties of a Human Age Distribution Under a Continuous Net Maternity Function*; Demography, Vol. 4, No. 2 (1967), pp. 680-687

⁶⁰ Similar decomposition as follows is used in the aforementioned EU report and its methodology is quite standard.

⁶¹ Employment rate is not just a reverse of unemployment rate – the numbers of students or persons ‘outside the labor force’ are also very important components.

⁶² See: Schmitz S. W., *The Impact of Projected Demographic Developments on Growth, Long-Term Real*; The Business Review, Cambridge; Summer 2007; 8, 1; ABI/INFORM Global, pg. 136-140

there would be no original input on my part.⁶³ Nevertheless, it is necessary to mention at least the basic features and assumptions of the model.

The OLG usually works with two generations, young and old. The young generation works, the old is retired. Each generation is born as young and then in period $t=1+t_{\text{born}}$ it passes to the old and in its place comes a new young generation. In period $t=2+t_{\text{born}}$ this generation is no more. The development of the age structure is modeled through the magnitudes of respective generations. Each individual from each generation has the same intertemporal utility function. The retirees can obtain their income (and thus consumption) via government taxes (in a simple model) taken from the young generation or via savings from the time they were young. The income of the young generation consists of several components⁶⁴, such as labor income. Utility is a function of consumption. The output is given by the standard neoclassical production function. By the tweaking of the production function one can model TFR and similar features and also the capital accumulation. The more complex features, such as ‘caring’ young/old generations, can be modeled via tweaking of the utility function.⁶⁵ The long term result then may be obtained by a standard optimization of the agent’s problem.

It is therefore only necessary to choose a viable model with a set of assumptions which seem reasonable. Whatever model will be used, the results should not differ much from the empirical observations from the past. Let us suppose that a model was established and some results regarding the effect of a decreasing labor input was obtained. The annual decrease due to the shifts in age structure can then be established (projected age structure is obtained beforehand from the demographic forecasts).

This annual decrease could be the end of a purely economic analysis, but since this thesis is focused on security, an absolute value cannot be regarded as the final outcome. Further analysis should include the long term impacts. For instance, the projected impact of age structure in the EU on GDP growth is forecasted to be -0,3% annually on average⁶⁶. This does not seem too troubling, but let’s consider the following: the projected growth is 1,6% in per capita terms. Without the alterations of age structure this growth would thus be 1,9%. If we computed the 50 year difference, the results suddenly appear more troubling than how they were presented by ECOFIN. By a simple computation⁶⁷ we arrive at the result that this ageing will mean that the population 50 years into the future will be poorer by about 35% in terms of present value than it would be if no change happened. It is rather surprising that this kind of computation is not included in such a large paper as the ECOFIN report.⁶⁸ One

⁶³ If someone would like to see the whole model in the ageing framework, a nice example is provided in this paper: Meijdam L., Verbon H. A. A., *Ageing and Public Pensions in an Overlapping-Generations Model*; Oxford Economic Papers, New Series, Vol. 49, No. 1 (Jan., 1997), pp. 29-42, especially the second part of the paper.

⁶⁴ The number of components depends on the complexity of the models, most of them connected with marginal rate of return for capital or capital market in general.

⁶⁵ A caring young generation means that the young generations care about the utility of the previous generations. Caring old would mean that the young generation worries about the utility of not yet born generations. See for example: Ehrlich I., Lui F., *Intergenerational Trade, Longevity, and Economic Growth*; The Journal of Political Economy, Vol. 99, No. 5 (Oct., 1991), pp. 1029-1059. But even if the generations would not care, the bequests would still have an impact on the model if not offset by a system of annuities as shown in: Pecchenino R. A., Pollard P. S., *The Effects of Annuities, Bequests, and Aging in an Overlapping Generations Model of Endogenous Growth*; The Economic Journal, Vol. 107, No. 440 (Jan., 1997), pp. 26-46

⁶⁶ This data is from: Joint Report prepared by the European Commission (DG ECFIN) and the Economic Policy Committee (AWG), *The 2009 Ageing Report: economic and budgetary projections for the EU-27 Member States (2008-2060)*; ISBN 978-92-79-11363-9.

⁶⁷ $(1,019^{50} - 1,016^{50}) = 0,35$

⁶⁸ Of course the method used would have to be slightly more complicated – computed not with averages but with actual annual losses from each year.

implication is that the higher the projected growth, the higher the gap caused by the age structure in present value, while approximately the same in future value.⁶⁹

The question is whether there should be only one group (all developed countries) or whether there should be several groups. More groups would enable us to deal with regional differences more precisely, yet the goal is to create one rank, so even if more groups were established, there would have to be some sort of comparison. The definition of a developed country allows us to treat our subjects as one group, because there should be no outliers with very high fertility, but the demographic dynamics can still differ substantially.

One could also argue that the slowing of GDP growth can have very different impacts because of the current differences in standards of living (i.e. China vs. Germany). These impacts are nevertheless connected with the quality of public services and thus fiscal sustainability, not with GDP per se. It is more proper to discuss these issues when analyzing the relations of fiscal sustainability, not GDP growth.

Ranking of the countries could then be created by ordering the results of the following equation. Let L_t be the annual loss in the time i , G_t the growth rate independent of age structure and we have set the time limit for our analysis (for instance 50 years). Then the difference X for the subject i can be computed as:

$$X^i = \frac{\prod_{t=1}^{50} (1 + G_t^i - L_t^i)}{\prod_{t=1}^{50} (1 + G_t^i)}$$

Ranking can then be created just by sorting out the states from the biggest number to the smallest one. The rank will be cardinal and it will enable us to see the magnitude of differences.

4.3 The fiscal sustainability - relation to GDP growth and demography

The second economic variable which needs to be taken into consideration is fiscal sustainability. The relation between the age structure and fiscal sustainability tends to be the main concern of government policymakers. Especially the effects of ageing on healthcare and pension systems are one of the best analyzed problems of population economics. The relation of age structure and fiscal sustainability is intuitively easy to explain – ageing will mean more elderly, more healthcare consumption and more retirees. Again, the model of impact has been set-up for instance by Ecofin, but there are several other models including one from the Czech government dealing with forecasts for the Czech healthcare system.⁷⁰

Economic security in this framework can be understood in more than one way. For instance, given the fiscal position, the dangers to security could still be very different due to the identity of creditors. The aim of this thesis is nevertheless not connected with the public/private balance of assets. Furthermore, it is reasonable to expect that due to the large interconnectedness of the financial markets the identities of creditors can change quite rapidly and suddenly. In light of these facts it is better to securitize fiscal sustainability without the contemplation of the overall current account balance.

⁶⁹ For instance: $(1,059^{50} - 1,056^{50}) = 2,32$; The future value in this context means a percentage of GDP at the end of the projected period.

⁷⁰ See: www.kulatystul.cz

In our preliminary analysis we assumed fiscal sustainability to be dependent on GDP growth and the age structure. GDP growth has an impact on the revenues of government, thus influencing the debt. However, most of the analytical documents treat this relation only as short-term - only the unexpected shifts in growth can have this impact. If the impact of ageing is measured solely in the shifts of percents on age-related expenditures then in theory GDP growth has no influence at all. Policymakers suppose that people (and states) will adjust their expectancies. Even the analytical documents of the EU are free from thoughts of what would happen if there was rigidity in the relative levels of expenditures.

To provide an example: let's suppose diverging rates of GDP growth of USA and EU15, and a continuous rise in healthcare expenditures fuelled by innovations substantially increasing life expectancy. The citizens of EU15 are generally expecting the same level of healthcare as US citizens. At some point new technologies could only be acquired by the US citizens due to the costs. Presently made analysis supposed that EU citizens would be somehow reasonable and adjust their demand to the possibilities of their countries. In that case GDP growth would be of no importance. In my opinion it is however much sounder to suppose some rigidity in expectancies. Thus there is a possibility of the long-term relation between GDP growth and fiscal sustainability. This fact needs to be kept in mind when we attempt to somehow summarize the economic aspect as a whole.

The impact of the age structure on fiscal sustainability can be generally divided into several areas – healthcare, long-term care, pension system and education. I will only briefly explain the methods and not give a detailed description of the model for similar reasons as in the part about GDP growth.

The effect of age structure on the pension system depends on the retirement age and can be computed using forecasted age structure on the existing system. The sensitivity analysis is then usually performed to hint the effect of various parametrical reforms. Similar is the treatment of healthcare. There exists some age-specific average expenditure so one can model the expenditures by simply projecting changes in age structure to the expenditure matrix. Various scenarios can be further created based on different assumptions about mortality, technological innovation, GDP growth, employment etc.

Let's suppose that a projection of expenditures is created.⁷¹ The question now arises about the ranking of countries and the connection of previously made ranking according to GDP growth with this one. There are several options. First is to see the expenditures on social and healthcare systems as a whole and from certain threshold consider their magnitude as a security threat. The second option is to consider the absolute growth of expenditures (in percents of GDP) and third option is to be concerned about relative increase (in percents of previously allocated resources).

The first option is very loosely connected to demography, since the set-up of systems may differ greatly. It is also difficult to say when the percentage of expenditures is so high that it deserves to be securitized. The second one is the most 'objective' since it offers a clear measurement and means to compare. The relative size of change has problems in cases where the initial values were high. In these cases even drastic changes would not appear so big. Nevertheless, the best way in my opinion is to adopt the second option, because a possible bias can be solved rather than weak dependencies between variables. Furthermore, the rise of mandatory expenditures is more linked to the security of a state. Securitization is clearly more justifiable when these expenditures severely strangle the possibilities of investment in defense, active foreign policy etc.

It is necessary to explain what is meant by mandatory expenditure. In public finance, the term is usually connected with expenditures allocated directly by the law. In this thesis the

⁷¹ How to create such an expenditure model may be seen for example on www.kulatystul.cz.

word mandatory will have a different meaning. We shall see as mandatory those expenditures which are necessary to uphold the perceived level of life standards to maintain economic (and social) security. The difference between the usual definition and this one is clear – in theory it is for instance possible to change the law, abolish healthcare insurance and allocate less than 1% of GDP to this subsystem. Then the effects of the age structure on healthcare would cease to be important. Yet this approach would be totally unfeasible politically. Every society may of course perceive the mandatory level of various public goods differently. We will assume that the level which a particular society achieved now will be also felt as a condition sine qua non in the future (in terms of GDP percents). It is a simplification of a sort because this perception may eventually change, but in most cases it is reasonable to expect that the change would be upwards so the share of mandatory expenditures will not lower.⁷²

The ranking should primarily reflect the absolute change in mandatory expenditures due to age related spending. As for taking into consideration the share of mandatory expenditures as a whole, I think that its inclusion would bring more harm than good to the method. There is usually a correlation between the overall level of GDP and some types of spending such as healthcare,⁷³ so the ranking would favor the poorer countries. Furthermore, despite the fact that the overall level of mandatory expenditures may constitute a problem, this is not connected to the topic of this thesis. The purpose is to create a ranking with respect to aspects of demographic security, not security in general.

Finally, a note should be made about the difference of impacts in countries with very different levels of living standards. One could argue (for example on the aforementioned example of China vs. Germany) that to measure on one scale the impact to such different nations is not correct. It could be true if we were conducting a solely economic analysis. But as we are contemplating economic security it is obvious that nations with different settings will have different standards of economic security. The only assumption which we will implicitly make by omitting this factor is that the relative perception of security will change equally (no matter the nominal GDP level) with equal change of the expenditure structure and magnitude of expenditures.

Let's therefore suppose that we have the numbers regarding the shift in mandatory expenditures due to age structure changes, so we can create a rank. We should now consider the method of combining this rank with the previous GDP growth oriented one.

Let the annual shift in percents of GDP spent due to ageing be s^i . By the combination of loss from mandatory expenditures and loss from GDP growth we could obtain the sum of 'opportunity costs' (let's denote them OC^i) of a government for a change in age structure.

$$OC_t^i = \frac{\prod_{t=1}^{50} (1 + G_t^i - L_t^i)}{\prod_{t=1}^{50} (1 + G_t^i)} * \sum_{t=1}^{50} s_t^i$$

By ranking countries according to this equation we will have calculated opportunity costs of the government. Thus we managed to construct a single rank which can be easily interpreted.

⁷² The pension system and healthcare are from macroeconomic point of view luxurious goods. One can clearly see this for instance on the OECD statistics.

⁷³ See for example OECD Health Data, http://www.oecd.org/document/16/0,3343,en_2649_34631_2085200_1_1_1_1,00.html

There are nevertheless a few remarks which still need to be done. The first is about the dimension of the result. It has none. It does not directly represent a monetary value, nor a percentage of something. By the multiplication of this value with initial GDP we would gain a number with the currency value – a ‘proper opportunity costs’. But this would inevitably ruin the equation for its primary purpose because for countries with larger initial GDP this cost would be much higher. By this omitting we came to results unskewed by GDP.

The second note should be made about the time dimension of the result. The number marks only the ‘costs’ in one final year of the analysis. If we would like to sum up the cost for the whole period the math would be slightly more complicated.

4.4 The human capital and its securitization

The relations between human capital and other demographic and economic variables is an area which is not often directly securitized. Yet even in this area there are first signs that the security implications of various changes in human capital should be taken into account. The most visible example is the term ‘brain drain’. Originally used in 1950s in the UK by the Royal Society to describe the outflow of highly skilled workers to the USA, nowadays it is probably the most important (policy-wise) aspect of emigration in developed countries⁷⁴. The question is whether to include this factor directly into the ranking of countries. It is clear that it cannot be incorporated into the above created ‘economic’ ranking, because there is no way to add up the numbers with a so different nature. Nevertheless, one can always perform separate ranking simply on the basis of statistics of international migration (not taking into account the fact that qualitative characteristics are not always present in migration statistics in all developed countries). But the time dimension of our analysis makes it impossible to perform such a ranking regarding the outflow of the highly skilled because it is not possible to forecast it decades into the future (because of the relatively little scale of outflow). Highly skilled migrants usually do not migrate in tens of thousands and in case of a quantitative approach it is necessary to have a relatively robust sample (robust with comparison to the whole population). The situation can be deemed different in developing countries, where the highly skilled, rare as they are, may migrate more significantly (for some Central American countries the emigration rates of people with tertiary education was reported more than 50%)⁷⁵.

Instead of focusing on the factor of emigration I will attempt to describe other possible relations of human capital. The reason in this case is not to create ranking, but to provide a basic understanding which may help us in dealing with other aspects (such as the policy-institutional aspect) and to complete the picture of relations of variables in our analysis. Even in the case of migration there are processes which can be forecasted and thus policymakers should count them in their considerations. The mass migration of the less skilled can for example alter the HCC. More importantly, there are studies suggesting that the educational attainment of the second generation (children of original migrants) differs substantially from the native population. The case study on Germany⁷⁶ shows that the attainment of the second generation can in case of some ethnicities (in this particular case Turks) vary in terms of tens

⁷⁴ See for instance: OECD Policy Brief, *International Migration of Highly Skilled*, July 2002, OECD, <http://www.oecd.org/dataoecd/9/20/1950028.pdf>

⁷⁵ More details can be found in: Carrington W. J., Detragiache E, How extensive is the brain drain?; Finance & Development; Jun 1999; 36, 2; pg. 46-49

⁷⁶ Worbs S., *The Second Generation in Germany: Between School and Labor Market*; International Migration Review, Vol. 37, No. 4, The Future of the Second Generation: The Integration of Migrant Youth in Six European Countries (Winter, 2003), pp. 1011-1038

of percents from the results of the native control group. Generally, there tends to be great differences not only between natives and migrants, but also between various migrant groups.⁷⁷ These differences could have not only obvious implications in terms of social cohesion, but they are also interesting policy-wise. It means that migration policies should have included at least some recognition to such empirical findings and the resulting approach can therefore have the time dimension lasting several decades. A more detailed consideration of policymakers' responsibility in this area will be given in part 7.3.2.

The last important relation to mention is the connection of HCC and fertility. It is quite surprising that in materials dealing with projection of fertility no attention is paid to the fact that education attainment has a grave impact. Let's consider the case of the Czech Republic. There is evident negative correlation between the level of education and the number of children.⁷⁸ Yet long-term forecasts still count with rises in both education levels and fertility for most countries.⁷⁹ The policymakers in the area of childcare and various schemes of supports for mothers should keep this aspect in mind as well.

5. The social aspect of demographic security

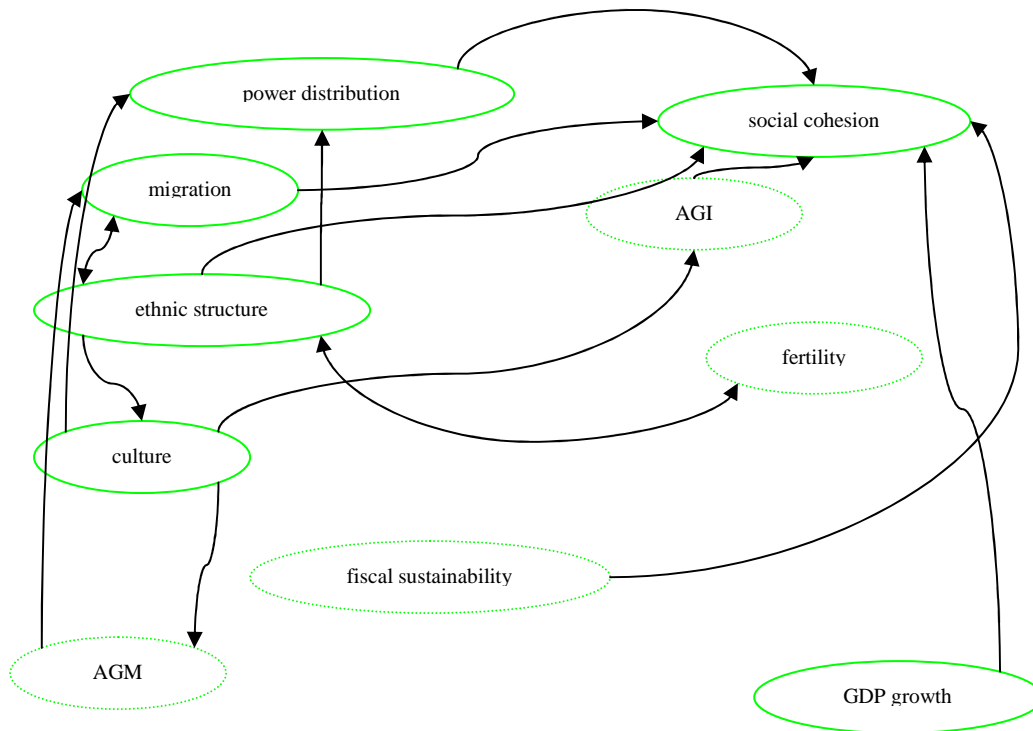
The changes in population may endanger not only economic prosperity, but also represent a grave danger to social cohesion. In the case of developed countries the danger usually lies more in the ethnic structure, migration and related phenomena than in the changes of age structure. For this reason our analysis will differ from those conducted for less developed countries. The researchers in these cases are usually primarily occupied by the so-called youth bulges. The underlying theory claims that most of these conflicts are caused by extraordinarily big proportions of young men (app. 20-30 years old) in the population in the time of the conflict. Since a large proportion of young men in a population is not a problem that developed countries will encounter for the next 60 years, our focus will differ. However, one must not fail to mention that there are exceptions. The youth bulges are not an issue in the general population, yet in certain countries there are minorities which can experience youth bulges in the near future. The combination of a minority youth bulge and fears of the majority from shifts in ethnic balance may fuel the conflict. Generally speaking this problem can be still addressed by the analyzing of ethnic structure rather than age structure.

⁷⁷ See for instance: Farley R., Alba R., *The New Second Generation in the United States*; International Migration Review, Vol. 36, No. 3 (Autumn, 2002), pp. 669-701

⁷⁸ Some indirect evidence is provided for example here: [http://czso.cz/csu/2006edicniplan.nsf/t/360034A5ED/\\$File/400806a1.pdf](http://czso.cz/csu/2006edicniplan.nsf/t/360034A5ED/$File/400806a1.pdf). It is quite a pity that the available datasets cannot provide us with age specific fertility rates for educational levels. Otherwise one could use the projected rise in educational attainment into the forecasted total fertility rates.

⁷⁹ See for example aforementioned report of EU – statistical appendices.

Chart III. The ‘map’ of demographic security – social aspect



5.1 The time dimension in the social aspect

The time dimension of our analysis of the social aspect differs from the others. In case of the economic aspect it is possible to create a forecast of the impacts of demographic changes. The institutional aspect is specific, since we are evaluating present attitudes which could form future development. The IR aspect enables us to at least follow the long term trends.

Social security is different. One cannot create a forecast of social cohesion 50 years into the future. It is insufficient just to assess the current situation, because in 50 years the situation could be quite different. There are also no recognizable long term trends which the author of this thesis is aware of signifying the shifts in the relations between variables.

Our approach should therefore consist of several steps. First it is necessary to operationalize social cohesion, then to suggest a way to operationalize the relations between variables based on the past dependencies⁸⁰ between our newly created measure of social cohesion and the rest of the variables. And finally project, if possible, the rest of the variables to the future (this step is possible for all independents short of power distribution) and predict the future values of social cohesion on the base of these future values.

⁸⁰ This part of the analysis will be done only theoretically, as the dataset for such task is not currently available.

5.2 The operationalization of social cohesion

The relations between social cohesion and the other variables are difficult to measure. The problem is not only in the fact that social cohesion may be influenced by many other 'invisible' exogenous variables, but also in the fact that it is difficult to establish some sort of measurement of social cohesion itself. Before we will proceed to the operationalization of these relations we will first have to determine how to measure social cohesion. The method of operationalization should not ignore the aforementioned constraints of democratic society.

There are generally two ways to measure such a variable. One is to question the people directly about their perception of social cohesion. The other is to determine some 'objective' measure independent of peoples' immediate feelings. In my opinion it is better to devise some measure independent of momentarily perceived feelings. Such feelings may be altered by some recent events in an unprecedented way, but the security of a state should be constructed primarily with respect to long-term development.

On the other hand an 'objective' measure is quite difficult to obtain. The method should be justifiable and not completely arbitrary. In order to fulfill these conditions it is best to start with the definition and aforementioned constraints of society. When these constraints are somehow threatened one may assume that security is at stake. The operationalization should therefore proceed in the direction of determining the measure of the common vision of society among its members and positively formed relations between the people with different backgrounds. The magnitude of threats to democratic society, which stems from the deviation from such a state, could be considered as the proper measure of the social aspect of demographic security.

The signs of ethnic hatred, intolerance aiming at disrupting the democratic order are in my opinion the best determinants of such magnitude. The problem is again that the measurement of such an abstract variable is difficult. Furthermore, it again can be influenced by national methodology. Let's consider the case of the Czech Republic and USA. If we wanted to measure hatred for example by the number of hate speeches, the classification would surely differ.

A serious threat for social cohesion is very improbable if there are no organized groups which promote intolerance or hatred. It is possible to measure the security aspect of cohesion via estimating the strength of political movements which are threatening it. It is therefore necessary to develop a model for the evaluation of power of such a movement. This model should be constructed in such way that it enables us to do an international comparison. Before the detailed 'plan' of the model will be introduced I should mention one more methodological decision which has to be made. The question is when a movement can be regarded as extremist and thus aimed at disrupting social cohesion.⁸¹ It is necessary to obtain some sort of a definition. According to a common definition, being an extremist means to advocate or resort to measures beyond the norm. In our case the norms have already been set-up in part 2.2. The opposition of these groups against the principles of the democratic society should be consistent⁸² and we should use methods which enable us precise operationalization. In my opinion, the methods of welfare economics are perfect for such a task. It is not enough to judge this just from the election results and from manifestos of the extremists. If ethnic tensions are to cause serious trouble to the state and economy, probably much more than a few percent of voters will be needed by extremists. On the other hand, we know from history that often the consent of the majority is not needed, all that may suffice is quite a small minority firmly determined to deal with the ethnic issues in a possibly violent way.

⁸¹ The question regarding the relation of demographic changes and extremism will be dealt with after the construction of the model.

⁸² In order to distinguish the rhetorical 'slip' of some representative from the consistent party view.

The evaluation based on elections does not take into consideration the most important factor which can decide - the determination of the voter and his preparedness to sacrifice to the extremists' cause much more than one Friday afternoon by going to vote. It is necessary to evaluate the number of people who are prepared to do more, measure their determination and thus evaluate the danger posed by the movement. Such movements often have paramilitary and other uncommon types of organizations where their supporters spend their leisure time. Also, it is necessary to evaluate the relative importance of extremist agenda in the thought system of their supporters. What is for example the comparative importance of unemployment issues vis a vis ethnic issues? Only after dealing with these problems can we in my opinion truly evaluate the scope of the danger. For the one truly convinced extremist usually poses a bigger threat to economy as well as security of the state than many "protest voters". This is also where the welfare economics come in. I intend to use its methods to evaluate the firmness of the extremist' determination. The purpose of this part is therefore to design research in a such way that we will go through monetary means, concepts like willingness to pay (WTP) and the value of leisure time spent in political extremists' organizations, to be able to distinguish between the real danger and mere discontent of some without deeper consequences.

5.2.1 Assumptions of the model

This section will provide the model with the necessary assumptions, list all simplifications which I am aware of and point out possible shortcomings of my approach. The first assumption deals with the "objectivity" of the ethnic issues – whether the majority⁸³ has some objective reason to be worried about the growing numbers of immigrants, their behavior etc. For the purpose of this part this problem does not play a role at all. I do not intent to deal with the normative problems, only evaluate the power of political movements. Thus it is not important from the chosen point of view whether the voter of the movement is somehow inwardly persuaded that the aims of the movement are good per se, or he believe that the extremist agenda is the only one which is able to deal with the real issues (i.e. unemployment). The only measurement will be conducted with respect to the zeal of the voter, not with respect to the causes which instigated that zeal.

For the model to be unbiased there is an assumption which has to be applied. The common member or voter cannot expect some direct (in terms of share on power) reward for joining the movement. By this I do not mean that this member cannot expect some rewards in terms of fulfilling the manifesto of the movement (for example: "By expelling the immigrants we will reduce unemployment."), but in the model I will assume that the member doesn't care for possible public offices, nepotism etc. nor is he expecting that, perhaps in the future, the membership in the movement will be beneficial to his/her career in a direct way. It is therefore necessary to restrict research only to relatively weak extremist movements, not the movements which represent an immediate threat to the democratic state (for example NSDAP in 1932 was already too strong, but NSDAP in 1924 would be the ideal research case, in the Czech Republic of 2010 the ideal case would be DSSS). This is obviously limiting, because even the member of a very weak extremist movement can trust in the "final victory", but in my opinion the rationale behind this conviction is not correct. Furthermore, if we were to conduct some evaluation based on the probability of the movement being victorious and the common member getting some share of power, I believe the results would suggest that the real chances (and thus monetary value of this conviction) are from the point of this analysis

⁸³ In case of the minority extremist, whether the minority has some real reason to revolt against majority because of discrimination etc.

negligible. This restriction is also in line with our set of research subjects. States where extremist movements are already threatening democracy itself are not in the area of research of this thesis.

The whole evaluation should have two stages. In the first one the research subjects are the members of the extremist movements, in the second one the respective movements should be compared and the basic hypothesis about the danger which they pose corroborated via econometric tools. The second stage should also provide an opportunity to include the relations of other variables to social cohesion. In this part I will only deal with the first stage. The primary research subjects of this submodel will therefore be voters, sympathizers or members of the movement.

There is yet another shortcoming to mention. The model will not deal with the possible correlations between the zeal of the average member and the ability of the movement to attract new voters/sympathizers (be it negative or positive). In fact, the ability of the movement to attract new voters is taken as exogenous. This is in line with the previous assumptions about “rationality” of ethnic worries. Since the ability to attract newcomers is determined by the gravity of problems (and many more exogenous and hardly measurable observables such as persuasiveness of the leaders) it would not make sense to try to analyze this aspect in this model.

5.2.2 The basic ideas of the model

The model should be, according to my opinion, based on the revealed preferences rather than on the stated preferences. Generally, people are somewhat reluctant to state their political preferences, but in case of an extremist movement it is clear that the revealing of preferences could possibly even have legal consequences and thus it is unlikely that the researcher would be able to get unbiased results. Our previously mentioned assumptions about the “objectivity” allow us to assume that the time the voter spends on political activities is a good proxy for evaluation of the value the extremist agenda has for him. We still have to ask them – but not about the political purposes of the organization or their commitment, but only about the time they spend on political activity, travel costs and their income.

The next step is to create the definition of the “commodity” of which we will try to determine the value. Is it the fulfilling of the political manifesto or does the membership and participation in extremist’ activities have some “recreational value”? Again, this question is resolved due to the previously mentioned assumptions. It is not important (at this moment), whether the extremist is attending demos or planning various actions because he/she enjoys it, but important is the fact that it supports the movement. I will therefore assume that there is a recreational value in these activities and the main commodity, of which the value I will try to evaluate, will be precisely this value. The reasoning behind this simplification is as follows: from the sociological point of view there is surely a difference between the member who attend such activities simply because he enjoys demonstrations and throwing stones at the police, and the member who does that because he is convinced that it will help to fulfill the manifesto. From the point of welfare economics we can nevertheless assume that either way he is receiving some utility – if he enjoys these activities than it is “classic” recreational value, if he does that for the “greater” purpose he is receiving utility from the good feeling about himself, and his help from his point of view can be regarded as a form of charity (in the sense that the subjective recreational value in this case originates from the feelings similar to the feeling for charity work in leisure time).⁸⁴

⁸⁴ In reality it’s probable that most of the participants will gain some mixture of these two utilities. A person who hates crowds and direct participation in violence would rarely participate in such activities (although there is a

The next methodological decision is whether to use something similar to the travel cost method (TCM) or rather something resembling the hedonic pricing method. This is nevertheless an easy one. Since we are evaluating the value of activity and we do not know in advance the price, it is clear that TCM is more suitable for our purposes, in our case combined with sunk costs from not utilizing leisure time in some other way. The recreational value of a site will be replaced by “recreational” value of the movement - somehow summed recreational utilities of sympathizers. Nevertheless, there are some modifications of this method which will be necessary.

Finally, it is necessary to decide on what dataset we should evaluate these values of movements. The group of all voters of the movement can serve as a basic theoretical dataset. We know the number of voters exactly (because election results are published). As for the people who could sympathize with the movement but do not vote for it, we can assume that the value of the movement for them is negligible – not sufficient enough for them to sacrifice one Friday afternoon in four years.

5.2.3 Dataset – reasoning behind the sampling

In the previous part I mentioned the nature of the questions the persons should be asked in the dataset. However, there is a great problem in finding the unbiased sample. Let’s suppose that we know election results and thus the number of the potential members of the movement. The next number which we could theoretically observe is the number of people participating in demonstrations and other actions planned by the movement, the scarcity of such actions etc. However, the observed action can be only a fraction of the real activity, because this kind of movement can organize various activities where outsiders are not permitted to watch. It is therefore necessary to ask people how often they conduct activities for the movement.

There are generally two possibilities regarding sample selection. We can either ask people during demonstrations or happenings of the movement or we can ask people “randomly” on the street, establish whether they vote for this particular movement and if the answer is yes, then proceed with further questions. Both approaches have pros and cons. If we ask people on demos there will be some bias, because only the relatively active ones would go to these events. On the other hand, asking people on the street would be costly, because we would need a very large sample to get enough supporters. Questions about political preference could also trigger “false” answers, because some could be reluctant to admit their “extreme” preferences (for instance the preferences of the communist party are often underestimated in surveys because some are ashamed to admit they are voting for it). On the other hand, if one is to attend a happening, one should not have problems with answering the questions truthfully. The problem is generally the same as the “on the site” vs. “off the site” questioning in standard TCM. In this particular case I’d prefer the “on the site” method because of the previously mentioned problems with the truthfulness of answers. By choosing the “on the site” method we can also focus more attention on the group which interests us the most (the active participating members of the movement) and we can therefore construct a more detailed questionnaire.⁸⁵ What remains to be dealt with is the problem of multiple visits.

Furthermore, it is reasonable to expect that preparations for a demonstration are for the average member quite costly (flags, banners, special outfits).

possibility that some of the intellectual elites of the movement can be of this nature). For the person who enjoys violence but lacks the political conviction, it is irrational to risk worse criminal charges for racial hatred and more rational to satisfy his/her needs for example during a football match or a simple pub fight.

⁸⁵ It is also possible to maintain ‘on the site’ method as a government agency.

5.2.4 Specification of the model

We have already established clearly the dependent variable in the model (the power of the movement). It is therefore necessary to fully establish the independent variables. The value for an individual member should be according to my opinion measured in relative terms. It means that the monetarized utility should be weighted with income. The power of the movement should be therefore expressed as

$$P = \sum_{i=1}^K \frac{U_i}{I_i}$$

where P represents power of the movement, K the number of sympathizers (voters), U_i monetarized utility of the sympathizer and I_i his/her income. The purpose of the model is the evaluation of the distribution of U_i/I_i in the K population of all the voters of the movement. The reason for this weight is simple. In politics, the power of the extremist mass movement rests in the numbers and the zeal of the followers rather than in their affluence.

Since K is easily obtainable because of election statistics and I_i is at least in theory obtainable by a simple question⁸⁶ (moreover it is quite probable that in case of these movements the fear of higher earning individuals to reveal their income will not be an issue), the biggest challenge will be to evaluate U_i and its distribution. In the previous part we decided that: U_i should reflect travel costs, direct costs and we should probably somehow count in the opportunity costs of voting for this particular party. Let's start with the estimation of the travel costs.

We decided that the best method is to ask people directly during the happenings of the movement. The questions should somehow help us to determine the costs of participation. The first questions should be about travel time, travel costs and direct costs associated with flags, banners, apparel etc. The second set of questions should be oriented at finding out how often the person participates. For this purpose we should distinguish between several types of happenings. For instance, the meeting of the local cell in a pub and discussion about further tactics is to be regarded as a political activity, but the travel costs will be different and we should also count in the problems regarding multiple purposes for the "trip". Therefore, the questions in this part should be as follows: How often do you participate on demonstrations such as this? How often do you participate on the local meetings of the cell? How often do you participate on miscellaneous activity such as outdoor training etc.? Then we should proceed to the questions regarding costs of each of these activities.

It seems reasonable to divide activities into approximately 3 groups – low cost local, high cost high profile and miscellaneous⁸⁷. For each of these types we should determine not only the costs for the particular member, but the overall distribution of costs as well because it will be needed later. It is reasonable to admit that this kind of questioning may prove difficult and to obtain realistic answers (or to obtain answers at all), the questions would have to be asked with great care and conviction.

By now, we have the sample (let's denote it S) of answers about the travel costs, direct costs, income, leisure etc. We can therefore obtain the monetized utility of the individual as:

$${}^S U_i = \overline{c}_l * n_i + \overline{c}_h * n_i + \overline{c}_m * n_i$$

⁸⁶ Some difficulties could arise with respect to persons without admitted income or with very low income. In these cases we should estimate some lower bound of real income by a reasonable lower bound of consumption or by some legal constraint such as the minimal wage.

⁸⁷ In equations with the notation *l*, *h* and *m*.

where n is the number of “visits” in a chosen time period (preferably a year) and c the average perceived costs of a “visit”. The variable c should be calculated as the average direct costs of participation plus the average travel costs and opportunity costs of leisure⁸⁸. It is reasonable to ask the persons about the average and not about the costs of the present happening, because one can hardly assume that the interviewee would enumerate all his/her past participations and remember all costs and times of travel. Furthermore, it is reasonable to expect that cost can differ substantially between various happenings and the already very difficult task of the interviewer should not be made harder still by insisting on questioning during many types of happenings, which would be required if the questions were not focused on averages. The opportunity costs of leisure should be determined by the income and subjective gap between the utility by spending leisure by attending happenings, and by some other leisure activity. Thus the time of the more affluent costs more. This effect will partially close the possible utility gap between the affluent ones, for which the direct travel costs and direct costs could be negligible, and the poorer ones, for which these costs may represent the main part of the “expenses”. To put these concepts into an equation:

$$\overline{{}_x c_i} = \overline{{}_x D_i} + \overline{{}_x T_i} + \overline{{}_x L_i} = \overline{{}_x D_i} + \left(\overline{{}_x T_i} + \overline{{}_x \tau_i} * {}^o O_i \right) + \left[\overline{{}_x \tau_i} * {}^o O_i \right]; x = l, h, m$$

This leads us to several problems. First of all we have to solve the problem of computing ${}^o O$. The computation of ${}^o O$ is quite straightforward. Let ${}^w \tau$ be the time spent by earning money and ${}^{\min} I$ the minimum income, then:

$${}^o O_i = \frac{\max(I_i, {}^{\min} I) + {}^l \tau_i * (I_i / {}^w \tau_i)}{{}^w \tau_i + {}^l \tau_i} \text{ for } {}^w \tau > 0 \text{ and } {}^o O_i = \frac{\max(I_i, {}^{\min} I)}{{}^w \tau_i + {}^l \tau_i} \text{ for } {}^w \tau = 0$$

Apart from delivering obviously extreme results for rich annuitants working a few hours a week, this model will deal with both unemployed and “normal” employed interviewees. Outliers could be further adjusted by setting a hard cap to ${}^o O$. In my opinion, this problem will be solved by the fact that in the end we divide the costs by the income of the individual. The possible extreme values of the affluent will be therefore weighted by a much higher income.

5.2.5 Sample vs. population

We have until now constructed the costs of the participation for an individual interviewee in the sample. The most difficult part still lies ahead. From the findings of individual utilities we should somehow deduce the distribution function of the sample and contemplate about the behavior of the whole population⁸⁹. This will not be, because of “on the site” questioning, an easy task.

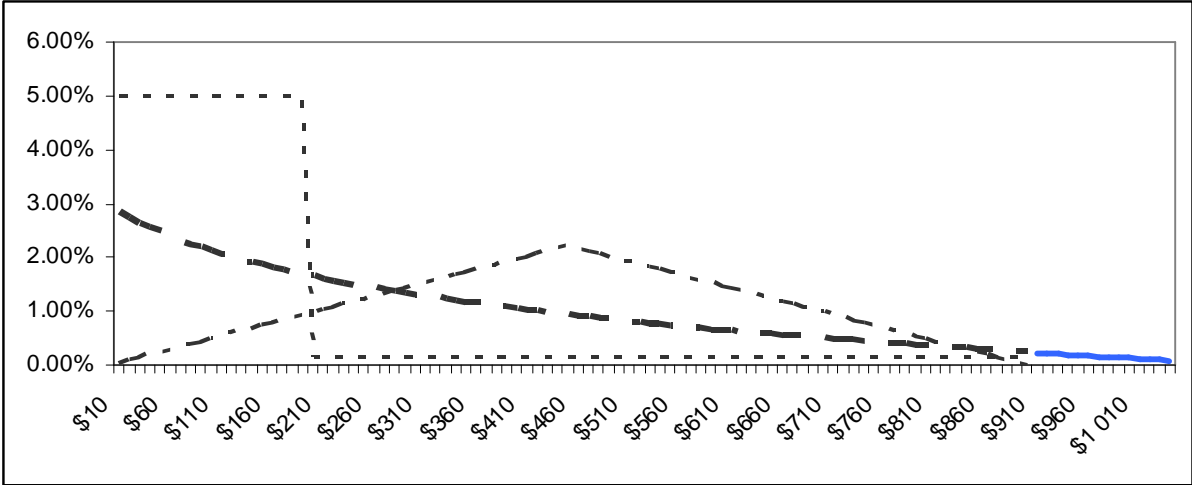
First, let’s find the distribution function. It is clear that we are not observing a random sample from the population. Still we can assume that the people regularly frequenting rallies (i.e. those likely to be interviewed) are also those with the highest costs. We can therefore obtain from interviewing the right part of the distribution – assuming that the interviewees are

⁸⁸ The notations will be as follows: Opportunity costs of leisure L , Travel costs T , direct costs D , leisure time ${}^l \tau$, time spent on political activity as ${}^p \tau$, leisure time spent some other way ${}^o \tau$. This difference should represent the potential gap – the utility from ${}^p \tau$ if the participant would not feel the “joy” from the political activity itself. The costs of travel can be further dissect to direct costs of travel ${}^d T$ and opportunity costs of time spent traveling computed as ${}^l \tau * {}^o O$.

⁸⁹ Here, the term population is used in the statistical meaning of the word.

the most active part of the movement. How big this part will be would depend on the proportion of those attending the interviewed events to the whole electoral population. The basic idea of what data we will obtain by the interview is best understood from the Graph I. The blue line represents the example of that which we may find by questioning. The black lines are the examples of uncertainty we face regarding the rest of the population.⁹⁰ To establish the shape of distribution function of the rest of the voters we should use some standardized values based on historical research of successful⁹¹ extremist organization in the subjects' history or in the history of the highly culturally similar subjects to make sure we respect the cultural differences of various systems of political participation. The standardization would adapt the shape of historical value of distribution according to the 'tail' obtained by the empirical research. This approach would be no problem not even in the Anglo-Saxon countries. Despite the fact that these countries have no such comprehensively successful extremist party in the history as for instance Germany the evaluation could be made on the base of KKK in 1950s or similar organization.

Graph I. – problem of distribution of opportunity costs



5.3 The relations between social cohesion and other variables

The whole purpose of the model created in the previous part was to operationalize the concept of social cohesion in such a way that it enables us to measure the influence of other variables in a clear way. We should therefore now assess the relation of migration and ethnic structure to social cohesion. The integration policies (AGA) will be briefly dealt with in part 7.3.3. The operationalization of these relations is in my opinion the most difficult task of the whole creation of the framework of demographic security.

5.3.1 The operationalization of culture

It is difficult to devise such operationalization of this variable, that it cannot be criticized as incomplete and limited. Nevertheless in case of this thesis this variable was included in order

⁹⁰ However, in the sample of interviewees there probably will also be outliers which will be in the area of uncertainty.
⁹¹ Successful means the movement which took power at least for some period of time or caused at least widespread civil unrest or civil war.

to complete the picture of complexity of demographic security and thus the operationalization will be strictly aiming at finding the parts of 'culture' influencing relations, which was allocated to this variable, namely to the integration and migration policies. The purpose is to develop the qualitative measurement which on one scale can capture the very restrictive policy of for instance Japan and on the other hand liberal policies of traditionally inflow countries. The key to this task is in my opinion the notion of nation state and the perception of political nation. The most interesting and usable for the purposes of this thesis is the concept of ethnos vs. demos. This difference is widely used in the case studies, so there is enough material to draw the inspiration and methodology from when conducting an evaluation. To describe briefly the difference between ethnos and demos approaches to the nation and identity building: "...demotic nationalism which aims at homogenizing culturally heterogeneous populations included arbitrarily into political units according to democratic principles, (and) ethnic nationalism aiming at the inclusion of each major ethnic society into one state of its own..."⁹² Furthermore the perception of the nation need not necessarily be demos *or* ethnos, but the whole problem can be seen as a continuum with pure demos perception on the one end and the pure ethnos perception on the other.

It is necessary to mention, that such operationalization is not without the additional assumption. It has been stated before that the perceptions (opinion polls etc.) aren't in our case usable, because one cannot predict their outcomes decades to the future. Yet one can assume that in case of most of the developed countries these views are relatively stable. There are case studies are showing that the basic position on the scale of ethnos vs. demos did not necessarily change even in the case of major political shifts and wars.⁹³ Thus we can obtain by the measurement (opinion poll) of perception today or perhaps partially by the literature research (similar articles as for Germany can be found on many other nations).

In the part 3.2.3 it has been claimed that the culture can also influence fertility and related policies. This obviously has very little to do with the perception of the nation state. This part of cultural background should be therefore operationalized differently. The most often used of preferences in this area is Personal ideal family size measurement⁹⁴ or some related number. In the empirical regression analysis itself (where all other economic and social variables would be included) one can also consider these preferences as a responsible for the residual sum of squares and try to correlate Personal ideal family size with these residuals.

5.3.2 Ethnic structure, power distribution and social cohesion

It is relatively easy to imagine situations in which the ethnic structure of a state can lead to a disruption of social cohesion. A clear case of this situation is Lebanon, where the uneasy interethnic relation led to decades of civil strife. On the other hand, there are cases where a multi-ethnic state functions without any difficulty in maintaining social cohesion (Switzerland). The goal of this part is therefore to mark the possible mechanisms through which ethnicity can influence cohesion.

⁹² Francis E. K., *The Ethnic Factor in Nation-Building*; Social Forces, Vol. 46, No. 3 (Mar., 1968), pp. 338-346

⁹³ See: Kurthen H., *Germany at the Crossroads: National Identity and the Challenges of Immigration*; International Migration Review, Vol. 29, No. 4 (Winter, 1995), pp. 914-938

⁹⁴ Used almost excessively for instance by the EU and EU-linked researches. See for instance: Federal Institute for Population Research, *The Demographic Future of Europe – Facts, Figures, Policies Results of the Population Policy Acceptance Study (PPAS)*;
http://www.bosch-stiftung.de/content/language1/downloads/PPAS_en.pdf

To do that, we should first contemplate the relation between ethnic composition, culture and power distribution. We have already operationalized social cohesion. To do the same with ethnic structure is easy. It is only necessary to keep in mind the dynamism of this variable, which is hinted by its connections with fertility and migration. The people can be aware not only of simple composition, but also of this dynamism and both compounds can affect their political preferences. The hypothesis that fear of a rapid change of composition can be a greater motivator than the ethnic structure itself, should not be taken lightly. As for the technicalities, there are countless possibilities. For instance, a tweaked Herfindal index⁹⁵ applied on state and ethnicities instead of market and enterprises, weighted somehow by the speed of change, could be a good way to recode ethnic structure into a simple number (or a set of numbers if we wanted to keep the speed of change and diversity separated).

The operationalization of power distribution is more difficult, especially if political parties are not created on the base of ethnic identities. A very convenient reasoning is provided in the case study on Germany also dealing with the problem of immigration.⁹⁶ Power distribution can generally be understood in many ways. In this thesis power distribution is understood as a distribution of the ability to push through the agenda of various groups, in our case mainly ethnic ones. The aforementioned case study offers two main 'levels' of participation which can be achieved by a newly arrived immigrant. The first one is inclusion into the system of welfare, usually dependent on the number of years in employment in the receiving country. The second one is citizenship, allowing an individual to participate in politics.

This basic division between economic and political power sharing is correct, yet in my opinion, a more subtle differentiation is needed, especially in the case of political power. As for economic power, the focus should be on the measurement of legal obstacles of gaining access to welfare and the equality in job opportunities. The access to welfare could be measured for example in terms of the difference between possible *ceteris paribus* claims of a citizen and a mere resident in various situations. The equality in job opportunities could be operationalized via the percentage of jobs on the labor market available only to citizens (for instance government jobs).⁹⁷ The real economic situation of an ethnic group could also be taken into account, for example by analyzing the difference between the average per capita income of the ethnic groups (standardized according to age, education etc.).⁹⁸

Political power distribution is more complex and harder to measure. Citizenship is surely the clear, visible and countable unit of analysis (one could for example measure the percentage of citizens between various groups), but there are many cases where all minorities have a sufficiently high percentage of citizens and yet may feel marginalized.⁹⁹ There is again the problem of differentiating between subjective feelings which may be felt in ethnic communities and the reality of state politics. We have already decided that the 'subjective' measures are not practical for our purposes because of policy-orientation of this thesis and time dimension. As for the objective measures, one could count the members of ethnic groups in the political bodies of the state weighted by the number of residents. The question remains

⁹⁵ For the definition of Herfindal index see <http://financial-education.com/2008/11/25/herfindahl-index/>

⁹⁶ Halfmann J., *Immigration and Citizenship in Germany: Contemporary Dilemmas*; Political Studies (1997), XLV, p. 260-274

⁹⁷ This is possibly omitting the fact that many more jobs can be *de iure* for all, but *de facto* only accessible by citizens. Nevertheless the *ceteris paribus* clause in this case means that possible discriminatory behavior based on ethnicity is not an issue for this measure.

⁹⁸ The problem is that there has been many observed cases of differing performances between various ethnicities not only in case of wealth, but education as well.

⁹⁹ Whether this feeling is 'just' or not is for our purposes irrelevant. Consider for example Basques in Spain, Magyars in Slovakia or Roma in Central Europe.

how to specifically operationalize this measure in such way that we can forecast it in the long term.

The most interesting way is in my opinion provided by the extrapolated time series of such measure. The application of aforementioned weight should provide us with the trend decomposed on the influence of population composition and the influence of 'culture'. This way we can also gain a tool how to describe the relation between the population composition and the culture. The future population composition forecasts themselves are easily obtainable and so are the past statistics. It is however unclear whether such time series can be obtained in case of all developed countries, especially smaller ones such as for instance in the case of Bulgaria and Bulgarian Turks. This problem could be possibly solved by the use of instrumental variables, using the assumption of influence of culture on the power structure. The qualitatively operationalized culture could serve as a proxy to the power distribution, where the unknown power distribution for some smaller subjects could be estimated via culture.

To sum up the approach presented in the part about social security provides us with the methods how to: operationalize all the relevant variables, test the relation between them and finally, on the base of results of these tests, population forecasts and aforementioned analysis establish the measure of risk for various subject in the future.

6. The IR aspect of the demographic security

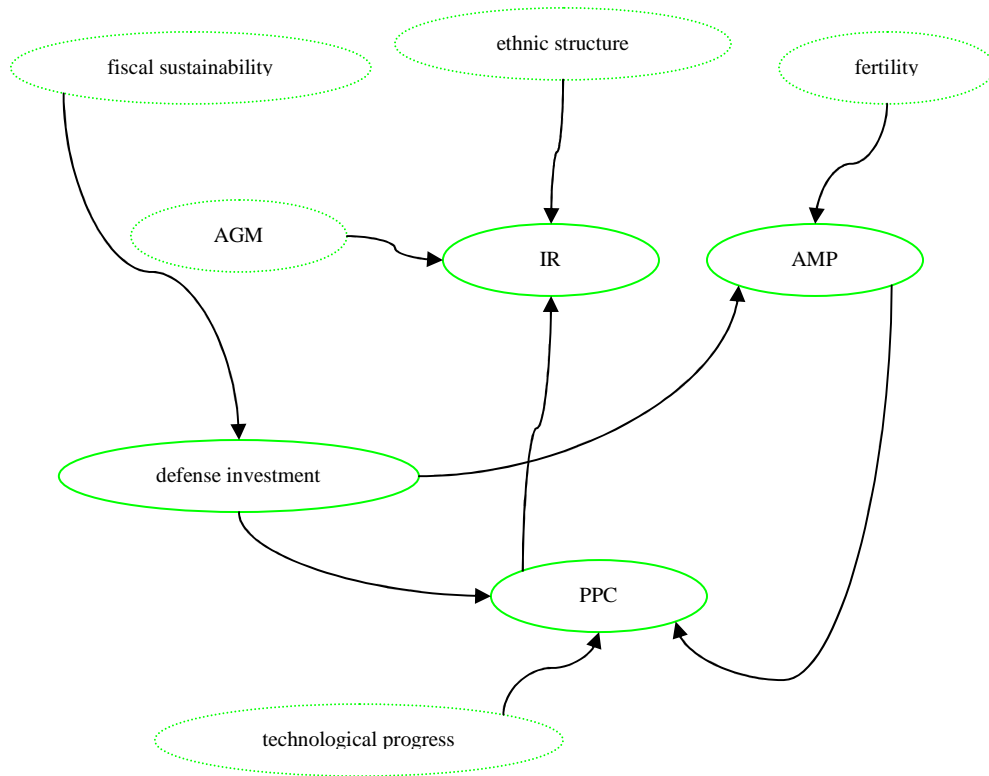
This part of the thesis will deal with the direct impact of demographic changes on the position within the international system (denoted as IR). This is also the main dependent variable of this part. This variable however in my opinion cannot be sensibly quantified. It is better to use the qualitative approach. Thus the ranking in this part could only hint the gravity of possible impacts of demographics on IR, but not in the exactly measurable units.

Before we will proceed to the analysis of relations, it is necessary to remind the boundaries of this aspect. The basic concept can be viewed on the scheme which follows and has been set up in the part 3.2. This part will therefore not deal with the possible economic consequences (for instance poorer and more indebted could mean less influential). As for the social consequences, the ethnic structure can form to the large extent the foreign policy¹⁰⁰ so the social aspect will not be entirely omitted, but we will analyze only this possible influence, not the possible influence of civil strife etc. The reasons for these constraints have already been hinted – the purpose of this thesis is establishing of framework of demographic security. If we would go on with analyzing the secondary impacts the variables would became too tangled. Furthermore the impact of economic slowdown or civil unrest on IR is quite traditional topic, no matter the causes of these events. The omission is therefore justifiable from the methodological view as well as from the point of view of keeping the paper as little derivative as possible.

This part will thus deal only with the possible impacts of ethnic composition, migration policies and perhaps most importantly the defense capabilities.

¹⁰⁰ See: Davis D. R., Moore W. H., *Ethnicity Matters: Transnational Ethnic Alliances and Foreign Policy Behavior*; *International Studies Quarterly*, Vol. 41, No. 1 (Mar., 1997), pp. 171-184

Chart IV. - The IR aspect



6.1 The operationalization of status within the international system

The most important in case of this factor is the operationalization of dependent variable. The proper conduction of this task will enable us later to arrive on qualitative method still capable of creating ranks. The operationalization of IR will be thus done to the large extent utilitarian with this methodological goal in mind.

For our purpose it is convenient to divide the IR into the two dimensions. The first one is the need for cooperation (induced by the demographic state of affairs). The second one is the ability to induce coercion and eventually project power. Each of these dimensions should have set of criteria to describe the situation of the subject.

6.1.1 The need for cooperation

As hinted on the scheme of our framework this variable should be connected with the migration policies. Thus the more proactive policies, the bigger the need to cooperation. It is also undeniable that the need for the cooperation can be determined by many other endogenous factors, such as geographical location of the subject.¹⁰¹ Nevertheless this should not hinder the possibilities of evaluation of change in IR due to the demography.

The first question is therefore whether the subject seeks cooperation in the matters of migration (or in some other area related to the demographic issues such as aforementioned social ones) with other subjects. If not, then we can assume that his position has not been

¹⁰¹ For instance it is interesting to observe the quite specific conditions of Italy (for example its exposure in the AENEAS projects).

influenced. Nevertheless basically all developed states pursue in some form the cooperation in this area. The US-Mexico cooperation deepens,¹⁰² Japanese pursue quite comprehensive policies of cooperation regarding so-called Nikkei communities¹⁰³ and the subjects in EU are bound to cooperate by their membership. The scope of this cooperation should be therefore the primary issue to analyze. The secondary one should be oriented on the question how this cooperation improve/worsen the relation between the subjects and cooperating states.

The following question should be therefore asked in my opinion about the migration-related cooperation:

- Did the subject proclaim the need for cooperation with sending, transit or receiving country?
- Did the subject stated, that in his opinion it is necessary to strengthen the cooperation in this area?
- Did the subject allocate some money to specific projects in the cooperating countries to meet the goals of the migration policy?
- If yes, then how large percentage of whole budget devoted to the migration policies are spend on such projects?
- Did the cooperation in this area triggered the change in the overall relationship or did the subject state that such change is needed because of this cooperation?

The answers tot these question should give us enough means to evaluate the ‘need for cooperation’ dimension of the IR aspect.

The answer to the first question gives the basic idea about the existence of the need for cooperation. The answer to the second question is giving us the about the dynamics of the process.¹⁰⁴ Such proclamations are usual from the subjects who have faced or are currently facing the great inflow/outflow of migrants.¹⁰⁵ The answer to this question furthermore enables us to perform another analysis, such as to make a conclusion about the need for cooperation and the concentration indexes.¹⁰⁶ The answer to the third one is the good indicator of depth of the cooperation. Such projects require often cooperation in other areas, if not for other reason then for the controlling of money sent to the cooperating states. The good examples are the AENEAS¹⁰⁷ projects of EU, which are facilitating cooperation with many African countries such as Libya. The percentage from the whole migration-related spending allocated on such projects may further put more exactly the importance o such cooperation. Finally the answer to the last question gives us the information about the impact which such cooperation can have on the IR in general. The last question is somewhat harder to asses than the previous one. To take again the example of Libya and EU, one may argue that this cooperation was crucial to the improvement of relations, but one may also assign this importance to some other area, such as energy politics. The measurement in this area and subsequent assessment is methodologically particularly tricky. As in the economic and social

¹⁰² Although the primary reason in this example is rather crime related.

¹⁰³ See: <http://www.mofa.go.jp/policy/emigration/nikkei.html#intro>

¹⁰⁴ Nice case study which provides us with the example how such assessment can look is for instance:

Boswell C., *The 'External Dimension' of EU Immigration and Asylum Policy*; International Affairs (Royal Institute of International Affairs 1944-), Vol. 79, No. 3 (May, 2003), pp. 619-638

¹⁰⁵ Compare for instance the language of European Council communiqués (Tampere, Laeken, and Seville) and actual immigration waves.

¹⁰⁶ The concentration index means some measure to establish the share of cooperating country on the total inflow/outflow/transit of the migrants. The hypothesis could be for instance could that the basic determinant for cooperation is not the overall number of migrants but rather the share of the country on the total amount.

¹⁰⁷ For basic overview see: Aeneas programme, Programme for financial and technical assistance to third countries in the area of migration and asylum, Overview of projects funded 2004 – 2006, http://ec.europa.eu/europeaid/what/migration-asylum/documents/aeneas_2004_2006_overview_en.pdf

aspects it may be wise to use some monetized value. Nevertheless, better than to consider the absolute value of allocated resources (which may differ between energy and migration substantially) it may be better to observe the relative increase between the subject and cooperating state in the various areas. For instance, if there is a doubt, whether the shift in relations was caused by the cooperation of migration politics or some other area, one can compare the relative increases of resources allocated in these areas. This method of operationalization should ensure that it will be possible to create the rank of the subjects according to their involvement in international cooperation.

6.1.2 The fertility, availability of military personnel and IR

The second dimension in which the demographic development is connected with the IR is military, availability of the military personnel and subsequently impacts on power projection capabilities. There are several mechanisms through which the declining (or rising) fertility can influence these other variables. The first is the direct lack of the manpower as experienced by some nation in full-scale wars of the past. However, such situation is extreme and belongs rather to the area of strategic army studies. The more relevant is the contemplation of possible constraints due to the limited labor market supply. This problem can moreover hit not only army of conscripts (where the size of the force is directly dependent on the size of the population cohort), but the professional armies as well. The stress on the labor market would force the armies in the medium term to increase the salaries, thus tighten the budget in other areas. This could lead to the negative synergy with fiscal tightening caused by the other aspects of demographic change, leaving the armed forces severely weakened.

However, there is third mechanism, more interesting, easy to measure (using directly fertility as a proxy) and perhaps even more relevant than the second one. As one could observe in the last decade, the most important constraint regarding power projection in the case of developed countries lied not in the material requirements, but in the resolution and commitment to use force. The acceptance of casualties plays a crucial role in the decision-making process. The question is, whether the fertility can influence the acceptance. There are many researchers claiming that it does. The most comprehensive study on this topic is in my opinion article „Where are the great powers? At home with the kids”¹⁰⁸. The article provide a deep analysis of strategic behavior of the Great Powers (USA, UK, France, Germany and USSR) as well as tactics of their troops in the battlefield in case of deployment and claims that the rather timid approach of the last few decades is correlated to the fertility and the decrease in the number of sons. The author thus suggests the military leaders to adopt either the foreign legion scheme or the Ghurka scheme to avoid the opposition caused by the worries of the parents. The view that the acceptability of casualties is the main factor in the assessment of power projecting capabilities is still relatively non-mainstream, but in the business there are already those, who see the opportunity and adjust their offers. There is even a detailed study showing that this business model is increasingly important in the military industry. The shift in perception of what is possible in power projection is very clearly visible in the following quote of Volker Ruhe, former German Minister of Defense made in 1998 „If we didn't have the most modern aircraft and didn't have, for example, the possibility to conduct verification by unmanned drones over Kosovo, it would be irresponsible to deploy troops”¹⁰⁹. The correlation of acceptance of casualties and fertility provide us with a way how

¹⁰⁸ Luttwak E., N., *Where are the great powers? At home with the kids*; Foreign Affairs; Jul/Aug 1994; 73, 4; pg. 23

¹⁰⁹ Niklas Schörnig N., Lembcke A. C., *The Vision of War without Casualties: On the Use of Casualty Aversion in Armament Advertisements*; The Journal of Conflict Resolution, Vol. 50, No. 2 (Apr., 2006), pp. 204-227

to operationalize the relation between the variables. It is however clear, that such relation is not between the availability of manpower and current fertility, but between AMP and fertility levels 20-30 years in the past. According to Vasquez¹¹⁰ there are also other non-demographic factors such as democracy or the conscription system (volunteers and professionals tend to have higher casualties than the involuntarily conscripted). Such results can be hardly attributable to the training itself, because professionals are likely to be better trained. The difference in tactical doctrines is to 'blame'. This gives us even more arguments, because it is likely that these doctrines are made precisely on the base of casualty acceptance. On micro-level, the decision whether to join the volunteer or professional army is surely influenced by the personal and family risk acceptance and since the family risk acceptance is influenced by number of children we can infer that the doctrines are in the long term influenced by fertility. Thus the lagged fertility can be directly linked to the manpower issues and indirectly to the PPP.

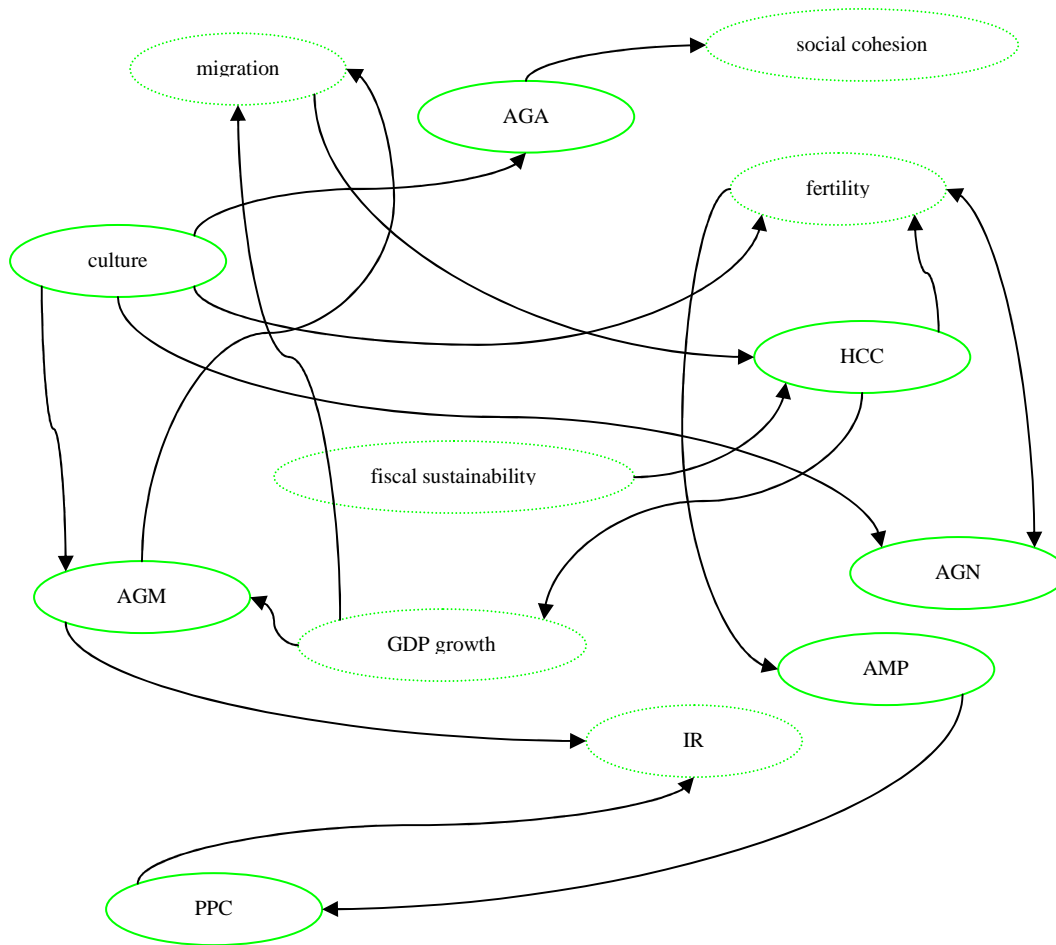
The ranking of countries in this particular area can therefore be based on a simple fertility statistics forecasted for the future. There are several implications. For instance the forecasts for larger parts of Europe tend to be higher (in terms of Total fertility rates) than the numbers from the last two decades. Since we concluded, that there is a link between fertility and PPP, the lowest point of PPP resourcefulness from the point of view of demographic security should be expected to come around 2030 and then the situation of the most of the subjects should gradually improve.

7. The institutional aspect of demographic security

This part of the thesis will introduce the policymaking dimension into the framework. In my opinion the institutional aspect is also the most important one, as the policies are the tools thorough which the subjects of analysis can influence their future performance. The method of evaluating will be similarly to the previous part qualitative. This part will include more relations between variables than the others, because as the last part it should somehow enclose the system and mention inter-aspect dependencies. The relation will be analyzed especially in the part about assessing the policies.

¹¹⁰ Vasquez III J. P., *Shouldering the Soldiering: Democracy, Conscription, and Military Casualties*; The Journal of Conflict Resolution, Vol. 49, No. 6 (Dec., 2005), pp. 849-873

Chart V. - The institutional aspect



7.1 The method of evaluating the institutional aspect

As mentioned before, the institutions in case of this thesis means the policies of the state. When evaluating policies across the states there is a difficulty in what to use as a measure of success or failure. It is especially difficult in case of demographic security since there is no worldwide consensus on what is good and what is bad in the area of fertility or migration. The states can therefore pursue entirely different goals, all of them rational and uncontroversial. There is also great diversion in both initial conditions and forecasted demographic development. Our measurement thus cannot be based on some given ideal set of policies, against which all the subjects will be tried and ranked according to the magnitude of difference between the ideal policies and their own ones.

Yet there are still ways how to evaluate the goals and policies of the subjects and general awareness of the problems which can the future population composition bring. The evaluation with respect to the goals should analyze their clarity and rationality of the explanation - why they are pursued. It should be also assessed whether these goals are long-term or short-term and generally how the time dimension is handled. The evaluation of policies should consist of the assessment regarding their relation to the goals, cost vs. benefits and sensitivity analysis, the analysis of their possible side effects and their mutual compatibility and supportiveness.

There are three main variables of our framework– integration policies, fertility policies and migration policies - which should be assessed. As for the labor market policies (which can be used either to offset the impact of ageing or to promote fertility) I will mention in the analysis only those with possible impact on the demographic variables).

In the next paragraphs I will always first present the way how to assess the approach of the subject and then attempt to give the example of the goal or policy to demonstrate how these particular approaches can be evaluated. Most of the examples will be taken from the EU policy papers, because EU issues the papers on demographic problems quite often and most of them are relatively easy to assess and perhaps criticize.

7.2 The assessment of the goals

7.2.1 The goals – clarity

The clarity of the goals is important not only as a prerequisite to the control of their fulfillment through the time, but also as a sign, that the basic consensus on the issue has been found and there is a will to at least clearly formulate the wishes of the state. The clarity should be expressed not only in possibly numerically stated goals (if the goals enable numerical expression), but also in the word expression itself. The blurry specification can be viewed as a tool to rather avoid the problem.

The question which should therefore be asked during the evaluations is as follows:

- Does the subject formulate goals regarding the demographic future?¹¹¹
- Does the subject clearly acknowledge the degree of security difficulties which can happen because of demographic development?
- Does the subject clearly formulate its particular goals in the area of fertility, migration, integration?
- Do the formulations enable the subject to control the fulfillment of the goals through the course of time?
- Is the language used in the formulations clear in a manner that suggest the deep commitment to their fulfillment?

The answers to these five questions should provide us with enough material to judge the clarity of the goals. The first four ones are quite straightforward, the fifth ones deserves a further explanation – thus the part of the example demonstrating the analysis of this question will be less brief.

The example of how goals can and perhaps should not be expressed is Commission Communication¹¹² issued by the EU in 2006. The EU acknowledges that there is going to be major change in terms of population age distribution. It thus proposes the five point plan how to deal with these changes:

1. Promoting demographic renewal in Europe

¹¹¹ This is the first step, for if there are no goals present then it makes no sense to perform the rest of the analysis. It should be also noted that the laissez faire is in the area of demography a valid goal, if it is properly explained. Thus if the subject proclaim, that it has no interest in influencing fertility, controlling migration etc. it cannot be viewed per se as insufficient or wrong if there is a clear reasoning behind this decision.

¹¹² COMMISSION COMMUNICATION, *The demographic future of Europe – from challenge to opportunity*; Brussels, 12.10.2006, COM(2006) 571 final, http://ec.europa.eu/employment_social/social_situation/docs/com_2006_571_en.pdf

2. Promoting employment in Europe: more jobs and longer working lives of better quality
3. A more productive and dynamic Europe
4. Receiving and integrating immigrants in Europe
5. Sustainable public finances in Europe: guaranteeing adequate social security and equity between the generations¹¹³

The first step in evaluating of clarity¹¹⁴ should be the analysis of the language used in their formulations. Let's start with the title of Communication - 'The demographic future of Europe – from challenge to opportunity'. The word challenge is usually associated with problem, so one can assume, that the EU acknowledges that there is a problem which needs addressing. Yet the expression is watered down by the claim, that these challenges can be somehow transformed into the opportunities. We can nevertheless assume that the answer to the first two questions (existence of the goals and the acknowledgment of the problem) is positive.

In the five points plan itself the four plans are quite clear and straightforward. The question whether to accept migrants is answered. The commitment to promote integration is present. The points 2., 3. and 5. are also clear. The only possible problem lies in the so called demographic renewal. However in the explanatory paragraphs there is a statement, that the issues of demographic renewal are falling birthrates and that there is a need to increase them. The third question regarding the clarity could therefore be also answered positively, because the focus of policies in all areas has been set out.

As for the fourth question this Communication does not offer any particular specification, but it is not reasonable to expect some from this kind of output and the EU published many other papers more focused on specific details. Nevertheless if the policy of the subject were evaluated just by this Communication the answer to the fourth question would be negative.

The more interesting is the analysis of the last question – whether the language used shows determination to really solve the problems. Let's again look at the title. The notion that the challenge could turn into the opportunity is ambiguous. It suggests that perhaps the demographic processes could turn beneficial for the EU. However the fiscal report mentioned previously dismisses any possible economic advantages (the only areas in which the lower expenditures are to be expected are education and unemployment benefits, in both cases the decreases are slight).¹¹⁵ One can hardly think of the area in which the further ageing could be rather an opportunity than a challenge (considering the fact that the overall population size will not fall). The title can therefore be seen as a excuse for possible inaction.

More importantly, the ideologically most controversial part (pro-natalist policy) is not properly labeled, but hidden in term demographic renewal. The very obscure terminology was already criticized by prominent scientists in the field of demography. W. Lutz noted (with a degree of sarcasm rarely present in the academic papers) that the term renewal cannot mean anything else than the pronatalist policy – unless the EU wishes to hasten the demise of the older generations.¹¹⁶ The term renewal was criticized by Jonathan Grant and Stijn Hoorens¹¹⁷ as hypocritical.

¹¹³ Ibid.

¹¹⁴ This set of goals formulate by EU will be used as an example in all subparts about the assessment of goals. This particular Communication should provide an example of evaluation, *not* to serve as a comprehensive evaluation of the EU policies on the subject.

¹¹⁵ See: Joint Report prepared by the European Commission (DG ECFIN) and the Economic Policy Committee (AWG), *The 2009 Ageing Report: economic and budgetary projections for the EU-27 Member States (2008-2060)*; ISBN 978-92-79-11363-9, p. 165.

¹¹⁶ Lutz W., *Adaptation versus mitigation policies on demographic change in Europe*; In Vienna yearbook of population research 2007 / editor Wolfgang Lutz ; managing editor Tomáš Sobo

Such terminology therefore does not signify the strong political commitment. Thus the answer to the fifth question would be negative.

7.2.2 The goals – assessment of *raison d'être*

The assessment of *raison d'être* is important mainly as an indicator of duration of the goals one set. The specifically lengthy time dimension of demographic security makes it for instance almost impossible to pursue the goals, which are somehow linked to the election cycles. This assessment should therefore not only bring further hint about the deepness of the commitment and background analysis, but also provide us with the information about the time dimension and endurance of the goals.

The following questions should be in my opinion asked about the *raison d'être* of the goals:

- Are the goals formulated as a outcome of strategy to avoid security risks?
- Is there a deeper analysis of needs of the subject as a background to the decision about the goals?
- Are the reasons of the goals somehow linked to the election cycle?

Let's consider the first one and the example from EU paper. The subchapter of EU Communication devoted to demographic renewal states that action is necessary. As a *raison d'être* for introducing low fertility rates as a problem is used following reasoning: "...surveys show that in all EU countries couples would like to have more children."¹¹⁸ It is quite understandable that they do, provided that methodology of obtaining the data consist of mere asking "How many children do you want to have?" and comparing the results with actual family sizes in the respective countries. The whole logic of this question is however in my opinion fundamentally flawed as long as it's not accompanied by mentioning some additional budget and time restraints of potential parenthood. It is a similar question to "Would you like to have a larger apartment?" Some people would not, but to ask this kind of question without hinting possible trade-offs is methodologically tricky (similar argument was pointed out by Wolfgang Lutz¹¹⁹, when he wrote that it is plausible to expect most of the Europeans to want to have more vacation days on Caribbean beaches, yet no one is issuing a Communication because of it).

The problem of defining the demographic goals by the wishes of the people has several dimensions. The first one is methodological. It is not clear whether to take as a goal Personal ideal family size or Actual intended family size. The second one, much more important from our point of view is the changing nature of the peoples' wishes. What if, for example ten years from now, the people would want to have lower children that they actually have today? This may seem nowadays improbable, as Personal ideal family size is still quite above the actual total fertility rate in all developed states, but there are signs that this may

¹¹⁷ Grant J., Hoorens S., *Does the Commission's report adequately address the key issues of the demographic future of Europe?*; In Vienna yearbook of population research 2007 / editor Wolfgang Lutz ; managing editor Tomáš Sobo.

¹¹⁸ COMMISSION COMMUNICATION, *The demographic future of Europe – from challenge to opportunity*; Brussels, 12.10.2006, COM(2006) 571 final, http://ec.europa.eu/employment_social/social_situation/docs/com_2006_571_en.pdf. On the other hand the paper also points out the sub-replacement total fertility rate as a problem which needs addressing.

¹¹⁹ Lutz W., *Adaptation versus mitigation policies on demographic change in Europe*; In Vienna yearbook of population research 2007 / editor Wolfgang Lutz ; managing editor Tomáš Sobo

change.¹²⁰ Is it possible that in this case the EU should adopt the policies actually discouraging the parents?

Most importantly, the wishes of the people have no direct relation to the security concerns of the state. Hardly anyone would consider sane to organize defense of the state and composition of the army on the basis of the wishes of the population. Yet the fertility policy, which could have in the future graver security implications than direct disposable raw power is still considered to be safe in the hands of public opinion. Surely no one can be forced to have children when he doesn't want to, but the nature and the magnitude of pro-natalist policies should be viewed as a security concern, if they aspire to have a long-term effect. Furthermore, this approach suffers from logical inconsistency. If the subject would decide, that the fertility is not to be securitized, then the overall fertility rate should not be an issue at all. If on the other hand the total fertility rate is used as an argument then it makes no sense to base the policy on micro-analysis of individual utilities. For this reason the answer to the first question in case of the policy of EU in this area should be negative. As for the other subparts, the migration policy is based mainly on the perceived economic needs and the integration seems to be oriented in the similar way. Yet these parts at least do not miss the long-term strategic vision, although this vision is based primarily on the economy and the lack of interdisciplinarity could be viewed as an omission.

The answer to the second question on the other hand is in the case of EU positive. There are detailed analysis of the problem not only from the demographic and economic point of view, but from the social as well and the last few years EU even acknowledges the impact of especially migration policy on the foreign relations as can be seen in the following quote: "It is also the European Union, with its international weight, its commercial role and its international cooperation relations with the Mediterranean, African and Latino-American regions, which can engage in partnerships indispensable to the management of migration flows, a prerequisite for the success of immigration policies."¹²¹

As for the ties to the election cycle, the position of EU is quite unique, so the other example should be found. The most recent change of migration policy is to be observed in the United Kingdom and its immigration policy.¹²² The recent (2008) net yearly inflow was estimated roughly at 170 000 individuals. The new government pledged to substantially decrease the number (according to the manifesto of the Conservative party to the mere tens of thousands per year).¹²³ This would mean a 50% change from one year to another one. This kind of change cannot be explained by nothing else than the fundamental difference between the goals of the new and old government¹²⁴ and very different assessment of the threats and benefits of immigration. It is besides the point which side is right in its assessment, the Labour or Coalition¹²⁵, but it is clear that the relevant parties in UK did not reach the basic consensus about the issue which would enable them to construct the long-term viable policy. UK may therefore serve us as a perfect example of the country where the answer to the third question would be negative, because the basic consensus about the nature of goals (for

¹²⁰ See: Goldstein J., Lutz W., Testa M. R., *The emergence of sub-replacement family ideals in Europe*; Population Research and Policy Review; Dec 2003.

¹²¹ COMMISSION COMMUNICATION, *The demographic future of Europe – from challenge to opportunity*; Brussels, 12.10.2006, COM(2006) 571 final, http://ec.europa.eu/employment_social/social_situation/docs/com_2006_571_en.pdf.

¹²² See: The Coalition: our programme for government, http://www.cabinetoffice.gov.uk/media/409088/pfg_coalition.pdf

¹²³ http://media.conservatives.s3.amazonaws.com/manifesto/cpmanifesto2010_lowres.pdf

¹²⁴ One could argue that the economic crisis and rise in unemployment could trigger such change, but interestingly the social cohesion, not the unemployment is given in the programme as a reason for change.

¹²⁵ and due to the difference in the priorities they can be in a sense right both

instance social cohesion) has not been found and the subject thus tend to oscillate between very different demographic policies.

7.3 The assessment of the policies

In this part not only the framework for assessment will be presented, but the relations between institutional variables and the rest are going to be further explained. As mentioned before, the policies can be only evaluated with respect to the goals that are to be reached. Thus the relation to the goals should be on of the most important dimensions of analysis. The basic question is obvious: Can the proposed policies lead to the outlined goals? Yet to evaluate ex ante the impact of particular policy is in the area of demography tricky, and in the other relevant areas, such as the social cohesion policies perhaps even trickier.

7.3.1 The fertility policies

The whole problem can be demonstrated on the example of pronatalist policies. The EU claims that the pronatalist policies are „realistic because international comparisons underline the effectiveness of family and other policies consistently implemented by some countries over several decades to create conditions supportive of those who wish to have children.“¹²⁶ But there is really no consensus in the scientific community about the long-term effects of the fertility policy. It is a fact that in the short to medium term the government can increase the fertility rates. Such policies were pursued for instance in the seventies in the Czechoslovakia. But the extent to which the policies truly raise the total fertility rate permanently and not only influence the timing of the births are in general quite disputable.

The case study from Sweden conducted by A. Björklund¹²⁷ supports the hypothesis that there is a possibility for policymakers to influence fertility. His case study compared Sweden with other Scandinavian countries in the age when Sweden pursued more pronatalist policies than its neighbors. This way he want to deal with the problem of how to asses influence of other factors than policies (he claims that these factors should be similar in all this countries). The family policies introduces at the observed time consist mainly of increasing availability of day care, increased maternity leave, introduction of and then increases in “care for sick children”, possibility for parents to work part time and direct cash support per child. Björklund argues that there are several ways how policies can cut costs of having child. First is reducing foregone earnings, second direct costs and third loss of human capital due to interruption of labor market participation. Swedish policies dealt with first and second aspect of costs. He also pointed out that when the policies in question were introduced, pronatalistic argument didn't play a role in political discussion. Finally he finds out that there is a possibility to influence fertility rate as well as timing and unfortunately also increase fluctuations. The negative correlation between education and Total fertility rate (TFR) seems to be uninfluenced by policies.

¹²⁶ COMMISSION COMMUNICATION, *The demographic future of Europe – from challenge to opportunity*; Brussels, 12.10.2006, COM(2006) 571 final, http://ec.europa.eu/employment_social/social_situation/docs/com_2006_571_en.pdf.

¹²⁷ Björklund A., *Does family policy affect fertility? Lessons from Sweden*; Journal of Population Economics 19:3–24 (2006)

G, Neyer¹²⁸ on the contrary argues that family policies are likely to exert different results in different context. She also points out interesting findings from previous researches, such as correlation between rates of female labor participation and fertility. While in 1970s countries with low participation enjoyed high fertility rate and vice versa, in 1990s situation was quite the opposite. Aforementioned applied for Western Europe, for Eastern Europe patterns were also different. She furthermore claimed that family policies can exert only indirect impact on fertility via impact on gender relations. For example mechanism which determines the level of subsidies during the maternal leave can be quite different, while statistically the overall level can be the same. The differences – i.e. whether the level is somehow based on partner income, how the families with more than one child are treated (if the second child and next ones provides more in allowances or less than the first child) play important role. However, she finds out that even if policies have impact on childbearing behavior, it is not necessary that they will have impact on TFR as well. Also policies aimed to decrease gender gap and policies directed at employment and income maintenance seemed to be more efficient than explicitly fertility-focused policies.

There are also case studies which found out that policies hadn't had impact on fertility or the results were insignificant. As an example I choose paper from F. G. Castles.¹²⁹ She argues that traditional values and employment structure (and thus policies) have a very little impact, offering cross-time correlation between indicator design to measure traditional values and employment structure and TFR as an argument. She also notes a very interesting mistake of economists predicting unemployment regarding preferences. The economists according to her make a mistake, because they take preferences¹³⁰ of women as given and don't count with possibility of change. In my opinion this mistake is a very important one, not only stressing difficulties of pronatalist labor market policies, but also supporting of argument about ever-changing nature of the results of opinion polls and their low usefulness in long-term policymaking.

These examples of opinions from academia were mentioned to explain the impossibility of ex ante evaluating of achievability of policy. However it is certainly possible to evaluate the costs of certain policies, especially those using direct subsidies to the population or otherwise connected with the budget of the subject. The budgetary implications should be then compared to the several projections of outcome of policy, ranging from optimum, in which the policy achieve its goals to the null-variant, where the policy has no impact at all. If such analysis is performed and policy still pursued, then one can assume that the overall risk/benefit is truly acceptable to the subject.

7.3.2 The migration policies

The case of migration policies differ because of different time lag between the introduction of policy and results. The fertility policy can be truly considered successful/unsuccessful after at least ten years to ensure, that the change was not only temporary. The migration policy on the other hand is generally considered to be short term solution to the labor market vacancies and thus the time lag is usually considerably shorter. To view migration policies only as a rather short term solution is proper also because of the research about the replacement migration

¹²⁸ Neyer G., *Family policies and fertility in Europe: Fertility policies at the intersection of gender policies, employment policies and care policies*; Max Planck Institute for Demographic Research, WORKING PAPER WP 2006-010 APRIL 2006

¹²⁹ Castles F. G., *The world turned upside down: Below replacement fertility, changing preferences and family-friendly public policy in 21 OECD countries*, *Journal of European Social Policy* 13(3), 209-227.

¹³⁰ Regarding the trade-off between childbearing and employment or human capital.

issues. The interesting case study on Europe was written by J. Bijak, D. Kupiszewska and M. Kupiszewski.¹³¹ Their quite sophisticated model reveals that the maintaining of population size alone cannot reverse or even significantly slow down the process of ageing.

The relation between economic variables, migration and policies also has to be mentioned. There are doubts whether in medium-term and long-term the migrants are really beneficial for the native population. A question arises whether immigrants are a net fiscal burden or not. If they are, then the entire concept of immigration gains appears to be in long term view nonsensical. Question however applies only to low-skilled migrants, immigration of high skilled people is usually considered non-controversial and from the economic point of view beneficial.¹³² Some studies found out that immigrants represent a positive fiscal externality to the pension system. The case study on Germany conducted by H.-W. Sinn¹³³ is showing that skilled immigrant dynasty from the point of view of pension systems actually present double contribution with comparison to the newborn native child in terms of present values. However, he assumes immigrant to be successful in the labor market and does not undertake an analysis of employment patterns not only immigrants, but also their descendants. According to A. Razin and E. Sadka¹³⁴ H.-W. Sinn also sees migration as either bad (welfare state driven) or good (driven by wage and productivity difference). Their study found out that the low skilled migrants (defined as educated below high school standards) usually represent a considerable fiscal burden in short and medium-term view. In the very long-term the results can be quite different, if the evaluation is done through net fiscal cost/benefit for native population.

When analyzing the migration policies of the subject the following should be therefore assessed: Whether the policymakers count with the long-term costs and risks, whether the policy is influencing the HCC and if this influence is probable, then if the measures to minimize threats and maximize opportunities are incorporated. Finally, because of relation with the economic growth, the sensitivity analysis of need of labor market should be done for various economic outlooks.

7.3.3 The integration policies

The impact of integration policies is in my opinion impossible to assess directly. Even if one would use the operationalization created for social cohesion in the part 5.2 the dissection of the influence of state policies and 'culture' is still extremely difficult. Furthermore, even if some policy has been effective in the past in case of one subject, it is not clear whether the same policy will be also successful in case of other subject. The time dimension also does not allow us to assess the policies in this area according to their direct results, as negative outcomes are often visible not for the first generation migrants, but only for their descendants (the case with labor market success was already mentioned in the previous part). As a best way how to evaluate can be therefore in my opinion deemed the assessment of complexity of policies accompanied with the same procedures as in case of fertility policies. Since exact ex ante analysis of benefits is hardly possible, one should also promote the policies which have

¹³¹ Bijak J., Kupiszewska D., Kupiszewski M., *Replacement Migration Revisited: Migratory Flows, Population and Labour Force in Europe, 2002–2052*; JOINT EUROSTAT-UNECE WORK SESSION ON DEMOGRAPHIC PROJECTIONS

¹³² The projects for attracting the highly skilled are also much less controversial from the point of view of social aspect if not for other reason than for the simple fact that highly skilled people do not tend to migrate en mass.

¹³³ Sinn H.-W., *The Value of Children and Immigrants in a Pay-as-you-go Pension System: A Proposal for a Partial Transition to a Funded System*; CESifo Working Paper Series, Working Paper No. 141, 1997

¹³⁴ Razin A., Sadka E., *Welfare Migration: Is the Net Fiscal Burden a Good Measure of its Economics Impact on the Welfare of the Native-Born Population?*; CESifo Economic Studies, Vol 50, 4/2004, 709-716

results controllable partial results. Last but not least the integration policies are partly dependent on public budgets (if the laissez faire approach is not used). Every policy should therefore include sensitivity analysis dealing with the situation of cut budgets or even the total abandonment.

7.4 The relation of policies and the goals

In the area of relations of policies to the goals the primary assessment should in my opinion concentrate on the side effects and especially on the potential impacts of these effects on the other goals of the subject than the primary goal, for which the policy was introduced. The reasons for focusing on side effects have been already hinted in the previous part. It is unlikely that the state would adapt some policy without expecting the gains in the area of *raison d'être*. However there may be a situation in which the adopting of policy will hinder the other priorities of the subject. Let's consider the example of fertility policies and human capital. The fertility policy can have either synergic effect or can on the other hand discourage women from fully developing their human capital and be successful on the labor market. These kinds of synergies should be crucial to the assessment. The basic question should therefore be, if the relation of policy to the all relevant goals is clear. The secondary analysis should then focus on the alternatives, especially on those which promise to deliver better synergies.

To sum up the approach of the state should be assessed via careful analysis of questions regarding goals and then the policies should be considered with special attention to the costs, synergies and sensitivity analysis. The only question remains how to create a rank from the answers to the particular questions which should be asked about goals and policies. There is no method which would not be susceptible to criticism. However, to avoid the accusation of too arbitrary judgment the assessment should in my opinion proceed from the more general features (goals) to the less general ones (policies).

8. Conclusion

The main contribution of this thesis is a fact that deals with the demographic security in its entirety. The methods proposed in all parts were designed with respect to the original goal – possibility of comparison between various countries. The design was also adapted to the fact, that demography is a science which enables researchers to relatively accurately forecast decades into the future. On the other hand the slow motion of demographic systems makes it practically impossible to devise short-term solution to the emerging problems. The demography as a social science is in this aspect in the unique position and the approach used in thesis exploited this fact as fully as possible.

The basic unit of analysis in this thesis was a state, not only because of many advantages from the theoretical point of view, but also because the data search for such unit should be much easier than for any other unit of analysis. The term developed was used for those states, who fulfill criteria regarding certain demographic, economic and socio-political conditions. The thesis was divided into several parts, first ones aiming at introducing the concept as such, latter ones dealing with various aspects.

The definition of security as perceived in this thesis was not exactly as the one which Barry Buzan introduced, but his definition was taken more as a standing point from which

slightly altered definition, more suitable for dealing with the demographic phenomena, could be devised.

The differences between demographic situation and its relation to security and economy or social system and their relation to security was also emphasized in the first part. The difference lies in the lack of normativity in the demography. One cannot per se say, that lower the fertility, better or vice versa. In economy, there are measures (such as wealth or utility) about whose we can say the more the better. This difference called for the specific approach and creation of “map” of relation between certain demographic variables and economic, social and other aspects of security in order to fully capture the complexity of relations. Such map was created in the part 3.2. The direct securitization of demographic development was not chosen. The fact that the subjects of analysis are states which at least in theory promote equality and non-discriminatory policies made it impossible to consider for instance the changes in ethnic structure as a threat per se.

The complexity of demographic changes called also for careful choice of variables. In the past, when the age structure of almost all populations was quite similar the simple size of population could give relevant picture about the human capital of the state (together with some qualitative measure such as literacy or generally education). The author of this thesis is aware that such approach is no longer possible. It has been demonstrated in the first part of thesis on the example of EU that population size ceased to be a good measure. More subtle analysis was required. For this purpose the demographic variables was divided into dynamic and static ones. The division enabled the basic orientation and for the reader less familiar with demography also basic understanding of how the demographic systems work.

The population static is generally describing the current state of population, primarily age structure. The population dynamics is connected with the change, most important variables from this area represented by fertility, mortality and migration. The inclusion of all variables was one by one defended by various arguments in order to present the system which will be complex and yet not too confusing. The environmental aspect of demographic security was dropped from consideration, because the population size of developed countries should not increase substantially. The demographic situation will not likely have impact on environmental security of these countries.

The term developed as used in this thesis implied several restrictions. The population politics are still quite controversial issue and there are policies, which developed state committed to non-discriminatory approach cannot even consider. On the other hand, the ability to somehow influence the demographic future of the country is crucial. The difficulties which rise from this “conflict” were described in part 2.2. The limitations implied by human rights paradigm were incorporated into the analysis, strictly dividing permissible policies from those, which are not seen in this thesis as permissible.

The part 3.1 was devoted to the methodological discussion. The reasons introducing for chosen methods were presented. The terms aspect and variable were also introduced in order to deal with the complexity of the issues when still maintaining the possibility of creating of rank of countries. The aspect served as a part of the whole system of demographic security, enabling the use of various methods. The economic implications of demographic development for instance could be hardly measured by the same means as institutional capabilities of state for dealing with demographic changes.

The problem of interdependencies between variables was also recognized and solution presented in form of “map” of demographic security. The terms dependent and independent variables were used in such manner to match the challenges stemming from these interdependencies. Furthermore the list of variables was presented. This list was not created arbitrarily, but step by step by considering the causal relation between demographic variables and economic, social and other phenomena. In order to avoid criticism for not recognizing the

alternative explanation of some phenomena connected with demographic development also miscellaneous variables was included to complete the picture.

The part 3.2 was dedicated to the defense of chosen variables and their dependencies. I have chosen to include five “demographic variables” – fertility, life expectancy, ethnic structure and human capital composition. As for the economic variables, the GDP growth and fiscal sustainability was included. Both of these variables have direct connection to ageing and thus their inclusion was quite obvious. The inclusion social variables are more open to questioning. I have decided to somehow translate the possible effect of demographic changes (in this case mainly changes in ethnic structure). The social cohesion and power distribution was introduced and their definition presented.

The actual demographic projection and its impact on social and economic life is one issue, but since the accuracy of projections enables government to actually try change the outcome through the decades it was necessary to include also some qualitative variables describing attitude and awareness of government about the issue. For that reason the institutional variables were added. The last but not least “IR” variables were introduced in order to enable the discussion of effect of demography on availability of military personnel, power projecting capabilities etc.

After the completion of the system as a whole the demographic security was then examined from the point of view of various aspects – economic, social, institutional ones as well as from the point of IR. Each of these aspects was dealt with in the separate part.

The economic aspect of demographic security was is the one which has already been analyzed by many studies, not only by academics but by various governmental institutions as well. The findings of these studies was thus taken into the account and the part 4 of the thesis was oriented mainly on the introduction of method of creating a rank of countries and dealing with some less known causal relations.

The part 5 was dedicated to the social aspect of demographic security. The academic writing in this area has so far oriented mainly on case studies and there is no comprehensive theory which would enable the creation of rank of the countries. I have therefore decided to use the relatively newly established branch of economics – so-called welfare economics and try to build a model from the point of view of this field. The model presented in this part offer a possibility of creation of rank as intended. It is true, that there are countless of other possible methods of operationalization of social variables, but the one used in this thesis are quantitatively measurable in term of money, which is not common.

The IR aspect is in my opinion together with institutional aspect not suitable for quantitative methods at all. Subsequently the qualitative measurement was applied again in such way to ensure the possibility of ranking. The IR aspect was divided into two parts, one dealing with possible effect of migration policies, other with the change in power projection capabilities due to the demographic changes. The attention was also paid to the psychological effect of diminishing fertility. The implications of linking fertility and power projection capability could be policy-wise numerous. Furthermore the qualitative measure was devised to operationalize the dependence on cooperation needed to implement working immigration policies.

Last but not least the institutional aspect was analyzed and the variables within this aspect operationalized. The fertility, migration and integration policies were provided with the basic framework and the method was established of how to qualitatively rank the sets of policies and goals of various subjects. This part was partially based on the criticism of EU papers written by several renowned scientists who participated in the debate about demographic future of Europe. Nevertheless their criticism was lacking the structure needed to create ranking of subjects even in this aspects. Such a structure was provided by setting up

several key questions and thus enabling ranking by testing whether the policies and goals of the subjects are matching criteria set by these questions.

The security implications of demographic changes are many, in very diverse fields and connected with other problems in a complex way. This thesis presented the issue in its entirety, describing the demographic security as a system of intertwined variables. The several key aspects were established. Furthermore, the approach of how to evaluate the severity of risks and thus compare the risks for various subjects was suggested in for every aspect. As for the operationalization of variables, the special care was given to the demographics one. In the previous part the system was introduced including the constraints, the relations between variables have been identified and analyzed. The every aspect was then presented in a way, that should enable to create a assessment of security risks. In case of the social and economic aspect the suggested quantitative methods should enable us to create a rank relatively easily. In case of IR and institutional aspect there is a great difficulty in devising of methods which wouldn't be susceptible to criticism for arbitrary choice with regards to operationalization. However, the proposed methods should ensure that the basic picture of the state of affairs for every subject can be drawn.

The demographic security of developed states is quite unexplored field of the research. This thesis provided the basic framework, into which in the future the case studies can be put and various states compared.

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