University of Twente
Center for European Studies

Westfälische Wilhelms-Universität Münster
Institut für Politikwissenschaft

Supervisor: Prof. Dr. Nico Groenendijk
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Bachelor Thesis

- Fiscal Externalities in the Health Care System between Germany and Great Britain

Lars Stephan
Ofenbergstraße 21
D - 69509 Mörlenbach
Tel. (0049) 06209 4984
(0049) 0176 29130062
E-Mail: Lars.Stephan@gmx.net

Bachelor of Arts in Public Administration/European Studies
Student number: s0122424 (Enschede)
Student number: 312341 (Münster)

Content

1. Introduction

The right of free movement for citizens of the European Union is one major achievement of the process of European Integration. Free movement creates new opportunities and chances for European citizens in almost all fields of their daily life. The right to move freely is widely used by many Europeans, who choose to study, to work or to retire in different member state of the European Union. From the point of view of the member states this mobility can create distortions in their fiscal decisions, if mobility is spread uneven between the different countries. If states are subject to high amounts of mobility they are confronted with special burdens, because they might have to provide additional public goods like education, defense or health care for mobile persons others than their own citizens. This effect is called fiscal externality. It occurs, if mobile persons use services in one country without paying for the use of the services. Because of its universal scope, the welfare state is likely to experience fiscal externalities due to intra-European mobility. In this bachelor thesis I will research the scope of fiscal externalities between the health care systems for Germany and Great Britain.

The freedom of movement is laid down in article 18 of the Treaty Establishing the European Communities (TEC) and represents one of the most basic elements of the European Union. Article 39 TEC codifies the freedom of labour and regulates the free movement of workers inherent the European Union. The freedom of labour is a part of the so called “four freedoms”, which protect the free movement of goods, services, capital and labour inherent the internal market of the European Union.[1] The right to free movement of labour (art. 39 TEC) and the free movement of citizens (art. 18 TEC) are widely used by European citizens.

The concept of mobility is about push-and-pull effects caused by different economical, geographical or even climatologic profiles of different countries. But mobility is also linked to different phases in the individual life-cycle. The concept of “life-cycle mobility” is about the influence of specific needs on mobility patterns during the different stages in a life-cycle. Due to the right of free movement, it is possible that a person grows up and uses education services in one country, works in a second country and spends his or her retirement in a third country of the European Union. This person

[1] The four freedoms are laid down in art. 23-31 TEC (freedom of goods), art. 39-48 TEC (labour), art. 49-55 TEC (services) and art. 56-60 TEC (capital).

would choose three or even more different locations to satisfy different needs during his or her individual life-cycle. The right of free movements allows citizens of the European Union to be highly mobile and to spend different phases of their life in different member states of the European Union.

But what implications does life-cycle mobility have for countries of the European Union, which host a different number of citizens in different phases of their life? Country A, which hosts a high number of international students, has to pay the educational costs of these foreign students. Country B, which hosts disproportionately high numbers of seniors, has to build more facilities to keep up with the specific needs of older people. Country C suffers from the emigration of young and high-qualified members of its workforce and has to adapt its labour market on the new circumstances. These are just theoretical consequences that mobility might have on different member states of the European Union. This has monetary consequences for each single state. But migration is also a special challenge for many states, their political culture and their attitude towards mobility. In European countries, which host high numbers of immigrants, citizens might fear that foreigners from low income countries could take over their jobs or decrease the general income level. Politicians fear that the national welfare state systems might be put under pressure, which results into a race to the bottom of social security systems. A recent example is the enlargement of the European Union in 2004. Most "old member state" closed or restricted their labour markets to the citizens of the "new member states" for reasons mentioned above.

And the fear of negative effects from mobility inherent Europe is not unfounded. In many member states public welfare services are universal, offered free of charge and have low access barriers for citizens of other member states. For example the British health care system has low access barriers and can be used by foreigners without paying for the received services. It is no wonder that the British government was concerned to face additional burdens for the National Health Service (NHS) as a result of enlargement. The citizens from the "new member states" had no right to access unemployment or social systems, but they could not be excluded from the NHS. As a result, British doctors predicted thousands or ten-thousands of new patients following an unregulated enlargement of the European Union in 2007.[2]

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[2] Also see: Britische Ärzte fürchten Patientenansturm aus Osteuropa durch weitere EU-Beitritte. http://www.aerzteblatt-studieren.de/doc.asp?hl=x&docid=103629

The effect that was assumed to affect the British NHS can be described as "fiscal externality". A fiscal externality occurs, if foreign citizens use services offered by the state without paying for using the services. Fiscal externalities or spill-over effects are well-known in federal states and in the theory of fiscal federalism. Most federal states have mechanisms to prevent, to internalize or to compensate fiscal externalities. But even though fiscal externalities occur in many ways within the European Union there is no specific mechanism to countervail fiscal externalities in the European Union. Fiscal externalities are even likely to increase, due to the existing socio-economic heterogeneity in the European Union and the ongoing integration. Therefore fiscal externalities could become a distracting factor for new integration (spatial as well as political) or for bargains between governments, like for example the bargains for the multi-annual budget framework of the European Union. Important fields in which fiscal externalities can occur are the national welfare states, covering health, unemployment or pension systems.

The problem of negative impacts due to mobility is well-known in the literature. Mester assumes that mobility has negative effects for residents, if infrastructure has to be enlarged due to migration. The migrants, who caused additional investments into the infrastructure, will only pay a small amount of the additional costs and thereby create a negative welfare effect for the residents of the state.[3] On the other side, Mester recognizes also examples of positive effects coming from migration. In her study on the effects of migration, Mester notices that migrants help to finance the costs of the older generations in the social insurance systems. This is the result of the different demographic structure of the group of migrants, which have in general higher numbers of working people and lower numbers of children and pensioners.[4] Even if social transfers towards the group of migrants are recognized, migration can still have a positive effect on the national redistribution system.[5]

As described above, mobility inherent Europe is likely to create fiscal externalities on national welfare state systems. But still, research on the relevance of fiscal externalities in the European Union is rather limited. In this paper, I will concentrate on the health care system, which might suffer the highest amount of fiscal externalities compared with other welfare state services. A special emphasis will also be given to the phenomena known as "life-cycle mobility". First of all, this research should define

[3] See also Mester (2000): p. 157-158
[4] See also Mester (2000): p. 165-166.
[5] See also Mester (2000): p. 192

fiscal externalities in the health care system. Based on this definition the monetary amount for fiscal externalities should be estimated for Germany and Great Britain. The results should help to answer the question, if fiscal externalities in the health care system are a threat to the European Integration. Finally, possible solutions to deal with fiscal externalities should be presented and tested on their suitability.

Mobility affects the health care system and fiscal externalities in different ways. The freedom of movement of citizens affects the health care system as well as the freedom of labour. Therefore mobility in the health care system addresses two groups: On the one side people working in the health care system and on the other side people using health care services. Health care professionals like doctors, nurses or midwives create fiscal externalities, when they choose to work in another country than their country of training, because they take their knowledge and skills with them. These costs paid by the country of training pose than a fiscal externalities. However, fiscal externalities occurring as a result of mobility of health care professionals will not be included in this paper.

This paper will only focus on the mobility of service users. This group can be spilt up into different types of service users as well. One group consists of people, who use health care services in a different state during a short-term stay in this country, for example while they are on holiday or on a business trip. This group is already covered by the European Health Care Arrangement and will not be part of this research.[6]

A second group compromises service users, who visit a country to use special health care services, like plastic surgery, dentist services or other non-emergency operations. The services used by this group are often private health care services. Further on the national health systems have entry barriers towards non-emergency treatment of tourists. Therefore this group will also not be included in this research.

The third group is made up of foreigners, who reside in another than their country of origin, maybe to work, to conduct education like tertiary education or to spend the retirement in the country. The focus of this paper is on this third group of people, who stay on a long term basis in another country. Fiscal externalities created by this group will be the focus of this paper.

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[6] For further information on the European Healthcare Arrangement concerning citizens of the European Economic Area in the British National Health Care System see also http://www.dh.gov.uk/prod_consum_dh/idcplg?IdcService=GET_FILE&dID=71464&Rendition=Web

The central research question of this paper is: “How can fiscal externalities in the health care system be prevented of having distorting effects on the European Integration?” To find an answer for this question, several subquestions have to be answered.

First of all, the underlying concepts of this research shall be addressed. In chapter two the origins of the concept of fiscal externalities and its linkages to the concept of fiscal federalism will be mentioned. The second concept that will be reviewed is the concept of “life-cycle mobility”. Mobility and especially mobility patterns, which are linked to different life-phases, have implications for fiscal externalities. The underlying concepts and problems are already known in the literature. Therefore the methodological choice in the second chapter is literature research. For the concept of fiscal federalism different literature by Musgrave (1959/1969) and Oates (1999/2005) is used. Dahlby (1996) is the main source used for the part on fiscal externalities. Browning (1999) is used to illustrate a different view on fiscal externalities. The part on mobility is based on literature by Kley (2004), Mester (2000) and Verwiebe (2004).

After taking a closer look on the underlying concepts, the third chapter concentrates on the mobility between Germany and Great Britain. The subquestion for the third chapter is: “What does the mobility and the demography of the Germans in Great Britain and the British in Germany look like?” To get a better understanding of the mobility of the target groups, I will also take a look on the mobility of the group of all foreigners and the group of EU-25 foreigners in Germany and Great Britain. In a second step, the demographic composition of the groups of foreigners in Germany and Great Britain shall be researched. The demographic composition is important because the concept of life-cycle mobility assumes that the group of foreigners in a country is rather homogenous in its age structure. An exact picture of the demography is also important, because different age structures suggest different cost structures in the health care system. The data which will illustrate the mobility between Germany and Great Britain are provided by the Statistisches Bundesamt and by Eurostat. The data on the mobility in Germany are provided by the Statistisches Bundesamt and are dated from the years 2005, 2006 and 2007. Eurostat provided the date on the mobility in Great Britain. These data were gathered in 2003. For the part about the general mobility patterns in Europe different literature was used. The most important ideas were thereby provided by Bentivogli and Pagano (1999), Huber (2004), Kohll and Decker (1999) and Vandamme (2000).

In the fourth chapter, the fiscal externalities in the health care system caused by mobility will be examined. The first subquestion of this chapter is: "How does mobility cause fiscal externalities in the health care sector?" In the first part of this chapter I will answer the question, if the spill-over effects caused by foreign residents in the health care system can be interpret as fiscal externalities? If the answer to this question is yes, it should be possible to deduce them from the general definition of fiscal externalities. The second subquestion of this chapter is: "Which amount do the fiscal externalities have in monetary terms?" If a clear definition of fiscal externality in the health care system can be established, it should be possible to put it into monetary terms. The monetary figure of fiscal externalities should help to identify the extent of its distorting effect on the finances of the health care systems and on the European Integration. The exact methods used, will be explained in more detail in the chapter. The data used for the estimation of fiscal externalities are provided by the Office for National Statistics, the Department of Health and by the NHS on the British side and by the Statistisches Bundesamt and the Bundesministerium für Gesundheit on the German side.

The leading subquestion in chapter five is: "How can fiscal externalities be prevented or internalized?" As mentioned before, fiscal externalities and the resulting distortions could become hindering to the process of European Integration. The last chapter of this research should therefore look at solutions for the question, how fiscal externalities in the health care system inherent the European Union could be dealt with. Different possible solutions to deal with fiscal externalities will be presented in chapter five. The different solutions are based on the work of Dahlby (1996), Gramlich (1977), Groenendijk (2003), Sinn (1997) and Oates (1999).

At the end of the paper the findings of this research should be presented and placed into a bigger context in the conclusion in chapter 6. A solution for fiscal externalities inherent the European Union will be presented and different unsolved problems for the presented solution will be mentioned.
A list of the used literature and other sources can be found in chapter 7.
Chapter 8 contains the different Annexes. In Annex A and B different data on mobility and the demographic composition of the researched groups in Germany and Great Britain will be presented. Annex C and D give detailed data on the estimation of the fiscal externalities caused by British citizens in Germany and Annex E and F give the same data for the case of German citizens in Great Britain.

2. Underlying concepts

In this chapter the theoretical concepts, which will be used in this research, should be elaborated. These concepts are fiscal federalism (chapter 2.1), fiscal externalities (chapter 2.2) and life-cycle mobility (chapter 2.3). During the short presentation of these theoretical concepts I will look on the origins of the theories and on its relevance for this research. Different definitions will be mentioned and elaborated in respect to the overall topic of the research.

2.1 Fiscal federalism

The theory of fiscal federalism has developed over time and many authors contributed in different ways. As Musgrave claimed "there is no distinct theory of fiscal federalism. Rather, we deal with a composite of models, pointed at various facets of the problem".[7] Leading authors are Tiebout (1956), Musgrave (1959/1969) or Oates (1999, 2005). They dealt with some of these various facets. Fiscal federalism is about "(…) to understand which functions and instruments are best centralized and which are best placed in sphere of decentralized levels of government. This is the subject matter of fiscal federalism."[8] "Functions and instruments" refer to the assignment of different state functions and financial instruments to different level of government in a state.

Musgrave divided the different functions of the state in three categories. Based on his work the main functions of the state are to "(1) secure adjustments in the allocation of resources; (2) secure adjustment in the distribution of income and wealth; and (3) secure economic stabilization."[9] By carrying out these functions the state faces different problems in the distribution of welfare effects and the distribution of the tax burdens.[10]

Musgrave defined the three functions of a state, also known as the Musgrave`s triad[11], but did not link the different functions to different levels of government. This "facet of the problem" was tackled by Oates in 1972. He described the "decentralization theorem", which says that "local outputs tailored to the demands (and particular conditions) of each jurisdiction will clearly provide a higher level of social welfare than

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[7] Musgrave R.A. (1969): Theories of fiscal federalism. In: Public finance, 24 (1969), p.521, as quoted by Groenendijk 2003: p.2
[8] Oates (1999): p. 1120
[9] Musgrave (1959): p. 5
[10] See also Musgrave (1959) and Musgrave (1969)
[11] See Groenendijk (2003) p. 10

one in which a central government provides a single, uniform level of public output in all jurisdictions."[12] This theorem is widely recognized and is used to justify decentralization of state functions.[13]

Based on the decentralization theorem, the fiscal federalism theory assigns the stabilisation function and the income redistribution as the responsibility of the central level of state. Decentralized levels of governments are rather limited in influencing unemployment or the level of price stability.[14]

The case of allocation is more difficult. Based on the decentralization theorem, decentralized levels of government should provide be in charge of resource allocation. "Decentralized levels of government found their primary role in the provision of efficient levels of "local" public goods – that is public goods whose consumption was limited primarily to their own constituencies."[15] But the central state has also a role in resource allocation: Non local goods or so called "national public goods" can still be provided by centralized government. [16] Therefore the question, if a public good should be provided by centralized level or decentralized level, is a question of cost efficiency and meeting the public demand. The issues of club good, consumer mobility and paternalism can also be reasons for or against decentralization.[17]

The problem of consumer mobility was tackled by Tiebout. Tiebout assumes that the mobility of consumers create more homogeneous communities. Here resource allocation can than be achieved in a more effective way.[18] Anyway, mobility can not be assumed per se for all households, Oates stresses the point that "gains from decentralization, although typically enhanced by such mobility, are by no means wholly dependent on them."[19]

Fiscal federalism is also about the division of fiscal instruments or the "tax-assignment problem"[20] In general the decentralized levels of government should use benefit taxes and should avoid non-benefit taxes on mobile units. Centralized levels of government are more appropriate to use taxes on mobile units. Grant systems and revenue sharing

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[12] Oates (2005): p. 351
[13] See also Hausner (2005)
[14] See also Oates (2005): pp. 351-352
[15] Oates (2005): p. 352
[16] See also Oates (2005): pp. 351-352
[17] See Groenendijk (2003): pp. 3-4
[18] See also Tiebout (1956)
[19] Oates (1999): p. 1124
[20] Oates (2005): p. 352

between the different levels of government are an essential part of the fiscal federalism as well.[21]

Different problems or shortcomings of the theory of fiscal federalism are discussed in the literature. Problems are the imperfection of information or the missing of hard budget constraints in intergovernmental grant systems.[22] Groenendijk concentrates his critic on the fact that fiscal federalism can only offer a guideline for real state constructions or on the non-recognition of personal interests of decision makers. Additional costs due to a decentralized state design are also not considered.[23]

In recent years the "Second-Generation Theory of Fiscal federalism" (SGT) emerged as a result of these critics. The SGT does recognize information problems and the behavior of policy makers, like their tendency to increase the own budget. One main finding is that "The case for decentralization depends not only on differences in taste, but on the potential for better local control or "accountability" under decentralized provision."[24] Another emphasis of the SGT lays on the issue of budget constraints and fiscal bailouts between different levels of government.

2.2 Fiscal externalities

A key element of the fiscal federalism theory is the phenomena of Interjurisdictional spillovers. If Interjurisdictional spillovers can be measured in a fiscal way, they can be called fiscal externalities.

A rather broad definition of fiscal externalities is offered by Dahlby: "Interjurisdictional fiscal externalities occur when a government's tax and expenditure decision affects the well-being of taxpayers in other jurisdictions either: directly by charging their consumer or producer prices or their public good provision, or indirectly by altering the tax revenues or expenditures of other governments."[25]

This paper will deal with one special kind of fiscal externality. Only this kind should be described at this point. In this research fiscal externalities occur between two countries (horizontal) and are caused by differences in the in the contributions into the health care

[21] See also Oates (1999): pp. 1124-1130
[22] See also Oates (2005): 353-354
[23] See also Groenendijk (2003): pp. 10-12
[24] Oates (2005): p. 358
[25] Dahlby (1996): p. 398

system by taxes or social contributions[26]. The fiscal externalities which are researched in this paper can be called a direct horizontal tax externality. Dahlby offers a definition for this case as well: "A direct [horizontal] tax externality occurs when part of the tax burden is borne by individuals who do not reside in the jurisdiction which imposed the tax."[27] In chapter four this definition will be further elaborated and adjusted to the problem of the research.

Fiscal externalities create problems because "Fiscal externalities lead to non-optimal tax and expenditure decisions if government have biased perceptions of the total marginal cost of raising revenues and total marginal benefit from their expenditures."[28] The results are welfare losses. Therefore governments try to internalize fiscal externalities or built grant systems to avoid the negative effects.

A third possibility to deal with fiscal externalities is to prevent them. The prevention of fiscal externalities is in the centre of Browning's work. He challenges the common thinking that fiscal externalities create inefficiency. In Browning's view "fiscal externalities (…) do not necessarily imply any inefficiency. If there is inefficiency associated with the fiscal externality, it reflects the distorting effect of the policy (…) that creates the fiscal externality."[29] His solution to deal with fiscal externalities is to remove the policy that causes inefficiency, which is manifested in fiscal externalities.[30] Browning may have a point in his argument. But the transferability from the case of his research onto other cases has to be proven first. It does not seem reasonable that the prevention of fiscal externalities on European Union level may be easier or more efficient than installing a fiscal grant system. This discussion will be picked up in the fifth chapter. At this point the common thinking should be the leading theory of this paper.

2.3 Mobility, migration and life-cycle mobility

In the following the concept of mobility should be elaborated in more detail. The link between mobility and migration should be explained and different theories of migration will be mentioned.

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[26] In the following I will assume that social insurance contributions have the same relevance for fiscal externalities as taxes.
[27] Dahlby (1996): p. 398
[28] Dahlby (1996): p. 397
[29] Browning (1999): p. 13
[30] See also Browning (1999): pp. 13-17

Based on the definition of mobility by Mester, migration is only one possible kind of mobility. It is characterized by spatial mobility in a geographical system, which results in the change of residency.[31]

The mobility of German and British citizens between both countries is a case of international migration. Based on a definition by the United Nations from 1976, mobile persons, who are researched in this work, are defined as migrants, when: "a person who changes his or her country of usual residence. A person's country of usual residence is that in which the person lives, that is to say, the country in which the person has a place to live where he or she normally spends the daily period of rest. Temporarily travel abroad for purposes of recreation, holiday, business, medical treatment or religious pilgrimage does not entail a change in the country of usual residence."[32] Migrants can further be divided between "short-term" (3-12 month) and "long-term" (more than 12 month) migrants. They can also be differentiated by their reason for admission[33]

The reasons for migration are multifaceted. In most cases the decision for migration is based on a bunch of reasons. Different reasons are emphasized by different migration-theories like the *neo-classical labour market theory*, *socio-scientific labour market theories*, the *theoretical migration approaches* or the *sociological mobility theories.*[34]

Especially the sociological mobility theories with its emphasis on the connection of social and spatial mobility seem important in respect to life-cycle mobility. It highlights that different stages of the life-cycle are linked to different social status. A change in the social status (like education, starting a family or retirement) is often linked to spatial mobility. On the other side spatial mobility (e.g. moving to a new job) is likely to be linked to a new social status (e.g. promotion to head of a local office). Social status and its change during a life-cycle are likely to cause spatial mobility and the other way around. The right to free movement in the European Union makes it more likely that migration does not have to stop at national borders.

To sum up, the mobility which will be researched in this paper is defined as international migration.[35] Further on spatial mobility is linked to social mobility and can be associated with special life-cycles. The review of spatial mobility should include a review of social mobility and its link to the different life-phases. Therefore the

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[31] See also Mester (2000): p. 7-8

[32] United Nations (1998): Recommendations on Statistic of International Migration, Revision1, Department of Economic and Social Affairs Statistiv Division, Statistical Papers, Series M. No. 58, Rev. 1, New York: United Nations, S. 9, as quoted by Kley, Stefanie (2004): p. 18

[33] See also Mester (2000): p. 11-12

[34] See also Verwiebe (2004): p. 70-71

[35] In the following the more general term mobility will be will used instead of migration

demographic structure of mobile groups is important as well, because age-groups will be more likely to be mobile than others.

3. Mobility between Germany and Great Britain

In this chapter the mobility between Germany and Great Britain will be examined. To answer, if mobility causes fiscal externalities, the first step is to analyze the actually mobility. As mentioned before, mobile groups are not homogeneous in regard to their demographic composition. People in some phases of their life-cycle or people with a special social status tend to be more mobile than others. Mobile persons are likely to be different in their average demography from the general population of a state. Different age groups contribute in different ways to the financing of the health care system and use health care services in different monetary amounts. A closer look on the mobility and the demography of foreign groups is vital to assess the influence those groups have on a state and thereby creating fiscal externalities.

In this chapter data will be presented on the number of German citizens in Great Britain and British citizens in Germany. Further on the demographic composition of those groups should be analyzed. Therefore the foreign citizens will be categorized in age-intervals of five and ten years. For a better understanding of the numbers the target groups of this research will be compared to other groups in both countries Those comparison groups are the general population, the group of all foreigners in the country and the groups of EU-15 citizens in both countries.[36] The used data are provided gathered by different statistical organizations, as the Statistisches Bundesamt (Germany), the Office for National Statistics (Great Britain) and Eurostat (EU).

In this chapter I will first have a look on today's mobility in Europe (chapter 3.1). In the second part I will concentrate on the British citizens and their demography in Germany (chapter 3.2) and in the third part on the German citizens in Great Britain (chapter 3.3).

3.1 Mobility in Europe in general

The right of free of movement, as we know it now, is based on the Treaty of Rome, which is the first step of the process of European Integration. Even though the Treaty of Rome only administers the free movement of labour, this provision can be understood as the origin of mobility legislation in Europe. The concentration on mobility for the

[36] While data on the whole EU-27 or the EU-25 is not available, data of the EU-15 from the years 2005/06 will have to do. The EU-15 also shapes a group, which is more comparable to Great Britain in social and economic spheres.

group of workers reflects the economic orientation of the first European treaty. But it also points to the fact that mobility in Europe is in most cases caused by labour. Other phases like education or retirement are seen as steps before or past the working life. By the Single European Act in 1987 the free movement of persons was introduced. The Maastricht Treaty in 1992 detached the right of free movement from the economic sphere and converted it into a fundamental right of the European Union. Further on legislation on non-discrimination on the basis of nationality became more important and enhanced mobility in Europe.[37]

But while the right of free movement was stretched beyond the sphere of labour[38], migration within the European Union is still low compared to the United States of America. In their study Bentivogli and Pagano come to the conclusion that the relative low rate of migration in Europe is caused by the higher sensibility of European citizens towards risk factors.[39] Huber sees "housing market imperfections, high long-term unemployment rates and excessive employment protection"[40] as reasons for low migration in Europe. Kohll and Decker add the problematic issued of different languages, long distance, information deficits and differences in the strucutre of the states, in respect to taxation or social systems, as additional reasons. [41]

Low mobility is interpreted as a serious problem in the literature. Zimmermann sees Europe stuck in a situation of an "immobile labour force and the eurosklerosis phenomenon"[42]. He and other authors demand the opening of the European labour market to non-EU-citizens as an important step in the future of the European migration policy. While EU-citizens can use their fundamental right of free movement, mobility inherent Europe is stark restricted to EU-foreigners.

The observation that mobility is historically linked to labour strengthens the impact of the life-cycle mobility. If mobility is linked to labour, this will have implications on the mobility patterns of the different groups and the demography of mobile persons.

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[37] See also Vandamme 2000: p438-439
[38] See for example Kohll and Decker 1999: Public Health Insurance and Freedom of Movement within the European Union
[39] See also Bentivogli and Pagano 1999: p. 757
[40] Huber 2004: p. 623
[41] See also Kohll and Decker 1999: p. 5
[42] Zimmermann 2005: p.447

3.2 British citizens in Germany

After the introduction to the general mobility patterns in Europe, this part shall give an overview of the mobility and the demography of British citizens in Germany. For a better understanding of the presented data, the group of British citizens in Germany should be compared with the group of the general population in Germany, the group of all foreigners in Germany and the group of EU-15 foreigners in Germany. The data presented in this chapter are provided by the Statistisches Bundesamt and are dated by the 31.12.2006. All data presented in this subchapter can be found under Annex A.

At the end of 2006, 96.507 British citizens were residents in Germany. Additional 22,500 members of the British armed forces and 30.000 civil servants and dependents were sited on bases in Germany.[43] These are not part of the research, because soldiers and dependents are not registered by German authorities. Soldiers, civil servants and dependents receive medical care on the British military bases and do not use services of the German health care system. This general case is different for around 1.600 dependents, who are working in the German economy. They loose their dependence status, are registered by German authorities and are also covered by the German health care system.

The group of all foreigners in Germany is made up by 6.755.811 persons. This group represents 8,2 per cent of the general population of Germany. The group of EU-15 foreigners is made up by 1.650.579 persons and stands for 2 per cent of the general population of Germany.[44] This means that 0,46 per cent of all EU-15 citizens (except Germans) live in Germany. The group of British citizens represents only 0,117 per cent of the general population of Germany. Only 0,17 per cent of all British citizens live in Germany, compared to 0,46 per cent of all EU-15 citizens. Therefore EU-15 citizens choose almost 2,7 times more often to live in Germany than British citizens do.

In the next step the demography of British citizens, who choose to reside in Germany should be reviewed. In graph 1 the demography of the group of British citizens in Germany is compared with the demography of the general population of Germany. The comparison shows that the demographic composition of British citizens in Germany differs from the general population of Germany. Until the age of 25 British citizens are

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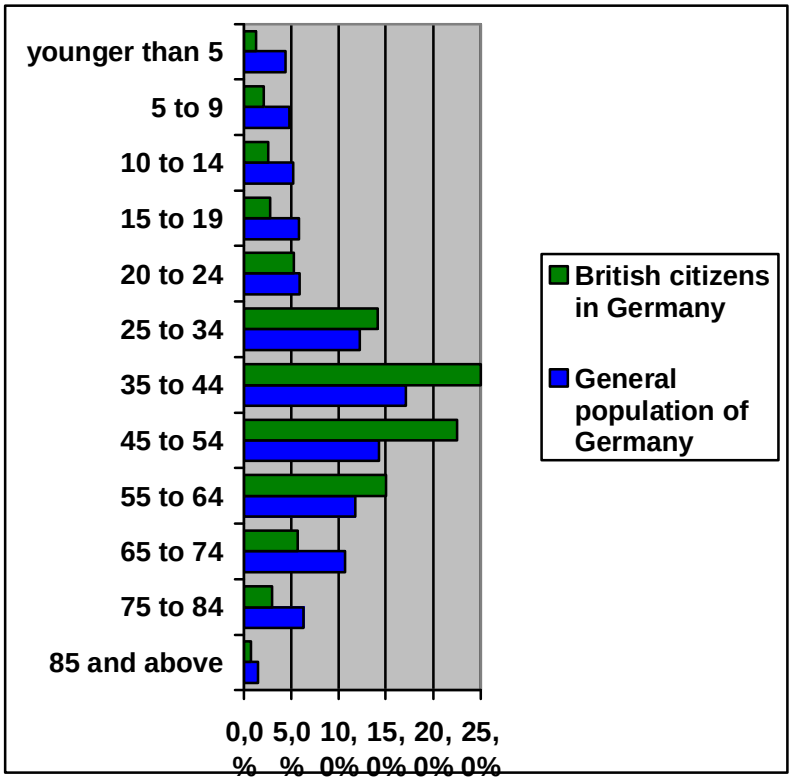
[43] See also in „British Forces in Germany, on the webpage http://www.bfgnet.de/Documents/english_bro.pdf

[44] The EU-15 group represents the member states of the European Union before the enlargement of the European Union in 2004.

Graph 1: Demography of the general population of Germany versus British citizens in Germany



Source: Own graphic data provided by Statistisches Bundesamt
data from 31.12.2005

underrepresented, compared with the general population in Germany. In the age group between 25 to 65 years British citizens are overrepresented, with a climax between 35 and 55. British citizens in the age over 65 years are highly underrepresented. 76,81 per cent of the British citizens in Germany are between 25 and 65 years old and 47,6 per cent are between 35 and 55 years old. If we assume that the average working-life is between the age of 15 and 65 years, the demographic allocation of British citizens in Germany is highly accumulated in the age group, which is linked to the working-life. This observation is assisted by the rapid fall of the number of British citizens in Germany above after the age of 65, the legal retirement age in Germany. While the age group between 55 and 65 years is made up by 14.496 citizens, which represent 15,02 per cent of the British citizens in Germany, the age group between 65 and 75 only comprehends 5.470 people, which represent 5,67 per cent of the total British population

in Germany. The available data support the theory that British citizens are more likely to reside in Germany during the age of 25 to 65 years or in terms of their social status in the age of the working-life, than they do before or after the working-life. The demographic structure of the group of all foreigners in Germany and of the group of the EU-15 foreigners in Germany show similar patterns, like the demography of British citizens in Germany. Foreigners in Germany concentrate in regard to there age mainly on the age groups between 25 and 55 years. But in relation to the other groups of foreigners in Germany, the group of British citizens shows special characteristics as well. In the comparison groups the climax of accumulation is between 25 and 35 years, while the groups of British citizens have their highest accumulation between the age of 35 and 45 years. Also the next age interval between 45 and 55 years is relatively bigger than in the comparison groups. The decline after reaching the retirement age is more drastic in the groups of British citizens compared to the other groups.

The conclusion for the group of British citizens in Germany shows two trends. The first trend is that mobility of British citizens to Germany is rather small, compared with the group of EU-15 citizens in Germany. Based on the migration theories this could be seen as the relative lack of income difference between Germany and Great Britain compared with other countries, like the EU-15 countries. On the other side, even between high developed countries an exchange of highly skilled labour is needed. This could explain the mobility of British citizens to Germans.

The second trend is that the demography of British citizens in Germany differs from the general demography in Germany. The concentration on “older age groups” with a climax between the age of 35 and 55 years, make it likely that the residence of British citizens is related to the working-life of British citizens. This is also reflected by the strong decline of the number of British citizens in Germany after reaching the retirement age.

3.3 German Citizens in Great Britain

This chapter shall give an overview on the mobility and the demography of the German citizens in Great Britain. For a better understanding of the presented data three comparison groups will help to illustrate the situation of German citizens in Great Britain. These groups are the General population of Great Britain, the group of all foreigners in Great Britain and the groups of EU-15 foreigners in Great Britain. The

data presented in this chapter are provided by Eurostat and are dated from 2003. All data presented in this chapter can be found under Annex B.

Based on the data by Eurostat 79.950 German citizens live in Great Britain by 2003. This means that 0,14 per cent of the general population of Great Britain are German and 0,097 per cent of the German citizens choose to live in Great Britain. Thereby the probability for an EU-15 citizens is 2,5 times higher to life in Great Britain, than it is for a German citizen. The group of German citizens living in Great Britain is influenced by a special group, the group of students. In 2002, 13.337 students with a German citizenship stayed in Great Britain.[45] This means that 16,7 per cent of German citizens being resident in Great Britain are students. The existence of this special group will have different implication throughout this research.

To be able to interpret this data, the data three comparison groups should be reviewed in the following. Based on the data by Eurostat, the general population of Great Britain in 2003 was 58.485.000 people. The group of all foreign was made up by 2.760.031 people, which represent 4,73 per cent of the general population of Great Britain. 914.032 people or 1,56 per cent of all people living in Great Britain were EU-15 citizens. Thereby 0,24 per cent of all citizens of the EU-15 (except British citizens) lives in Great Britain.

In the next step the demography of the German citizens in Great Britain shall be reviewed. Graph 2 shows a comparison of the demography of the German citizens in Great Britain and the general population in Great Britain. The demographic composition of German citizens in Great Britain differs in some ways from the demography of the general population of Great Britain. In the age groups until the age of 20, the German citizens are underrepresented. In the age between 20 and 45 years, German citizens are overrepresented, compared with the general population of Great Britain. Especially the number of German citizens in the age between 25 and 35 years shows a high overrepresentation. Almost 25 per cent of the German citizens living in Great Britain are in this age, but only 13,4 per cent of the general population of Great Britain is in this age. In the age above 45 years, German citizens in Great Britain are underrepresented, especially in the age group between 55 and 65years. 71 per cent of the German citizens in Great Britain are cumulated in the age between 15 and 65 years, which are relevant for the working-life. Almost 43 per cent of the German citizens in Great Britain are between 25 and 45years old. Other interesting specific features of the

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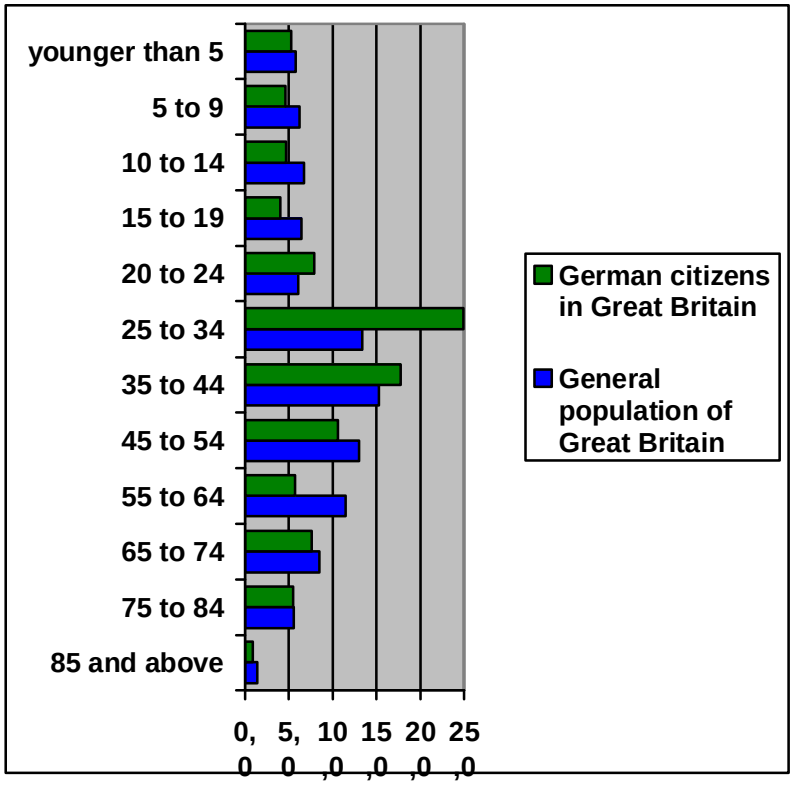
[45] See also Bremer, Annelene (2005): p. 15

Graph 2: Demography of the general population of Great Britain versus German citizens in Great Britain



Source: Own graphic data provided by Eurostat data from 2003

group of German citizens in Great Britain are e.g. that 61 per cent of group are female. This could explain another specific feature, the high number of German children in Great Britain. While 18,7 per cent of the German citizens are under 20 years old, only 11,6 per cent of the EU-15 citizens in Great Britain have the same age. Another observation is that the number of German citizens above the age of 55 years is relative stable. While the age groups above 55 years show in general a decline, the number of German citizens in these age groups is much more stable. The number of citizens in the group of general foreigners and EU-15 foreigners halves between the age of 55 to 64 years and the age of 75 to 84 years. In the case of German citizens in Great Britain, the number stays stable between these age groups. The number of German citizens between 65 and 74 years is even 27 per cent higher than the number of German citizens between 55 and 64 years.

To conclude on mobility and demography of German citizens in Great Britain, three main findings should be mentioned.

The first finding is the unexpected high number of German citizens under the age of 20 years.

The second finding is that the group of German citizens in Great Britain is dominated by females. Females dominate the age groups between 20 to 44 years by between 56 and 59 per cent. In the age above 45 years females represent between 70 and 77 per cent of German citizens in Great Britain. The data could be interpreted in the way that female German citizens choose more often to stay in Great Britain for their whole life than male German citizen do. The mobility pattern to stay in Great Britain for the whole life finds also confirmation in the high number of German children and the high number of old Germans.

The third finding is the high concentration of German citizens between the age of 25 and 44. This accumulation is influenced by the high number of German students in Great Britain. However this pattern exists also for the groups of all foreigners in Great Britain and the group of EU-15 foreigners in Great Britain. This suggests that the British labour market pulls specially people in the early stages of their working life. This mobility pattern could be the result of a high number of students in Great Britain and a high number of students, who decide to stay in Great Britain beyond their time of study.

3.4 Conclusion on mobility between Germany and Great Britain

The comparison of mobile British citizens in Germany and mobile German citizens in Great Britain shows some interesting trends. First of all, the mobility of both groups towards the other country is low compared with the number of EU-15 citizens. Only 0,17 per cent of all British citizens live in Germany (0,46% of all EU-15 citizens except Germans live in Germany) and only 0,14 per cent of all German citizens live in Great Britain (0,24% of all EU-15 citizens except British live in Great Britain). The theories on mobility would explain this finding by the relative lower welfare differences between Germany and Great Britain, compared with the EU-15 states an the resulting higher levels of “push and pull effects” towards Germany and Great Britain.

A second trend is that Germany hosts more British citizens, EU-15 citizens and in general foreigners than Great Britain does, in total as well as in relative terms. The reasons for this trend are unknown.

Another interesting trend is the different migration pattern in relation to the sex. 60 per cent of the British citizens in Germany are male and the male ration is relative stable and valid for all different age groups. On the other side 61 per cent of the German citizens in Great Britain are female. The relation between the sexes is not stable in the case of German citizens in Great Britain. The number of female German citizens in Great Britain is higher in the age groups above the age of 20 years and reaches a rational of 70 up to 77 per cent above the age of 45 years. At the same time the number of German children in Great Britain is unexpected high. This suggests that a high number of German women choose to stay and to start a family in Great Britain. This fact could result in a lower female German workforce in Great Britain, than the numbers suggest.

A fourth trend is the difference in the demographic composition of the reviewed groups of foreigners. British citizens in Germany are cumulated in the age groups between 35 and 54 years. German citizens in Great Britain are concentrated in the age groups between 25 and 44 years. This mobility pattern of German citizens in Great Britain is similar to the mobility pattern of EU-15 foreigners and the group of all foreigners. But the concentration of British citizens in Germany in the age groups between 35 and 54 years is in not reflected in the comparison groups. British citizens in Germany are in average older than the foreigner of the comparison groups. Germany seems to be most attractive to British citizens between 35 and 54 and Great Britain is most appealing to German citizens between 25 and 44.

The last main trend is that British citizens in Germany concentrate more on the age groups, which are relevant for the working-life. While 85 per cent of the British citizens in Germany are between 15 and 65 only 71 per cent of the German citizens in Great Britain are between 15 and 65.

Some of these observations will have implications for the following chapter on fiscal externalities in the health care system.

4. Fiscal Externalities in the Health care sector

This chapter will deal with the estimation of fiscal externalities in the health care system. To answer the fifth subquestion, which amount do the fiscal externalities have in monetary terms, the health care systems has to be examined on its financing and on its expenditure side. On the financing side, different financial sources of the health care systems shall be examined, measured and in monetary terms and sized down to a individualized contribution into the health care system. On the expenditure side of the health care system, the expenditures for the individual citizens based on their age shall be reviewed. Both the contributions into the funding of the health care system and the used services of the health care system should be estimated for the groups of British citizens in Germany and of German citizens in Great Britain. The fiscal externalities, which are the aim of this research, will be the difference of the contribution on the income side and the used services on the expenditure side.

Before turning to both countries, I will first concentrate on the theoretical concept of fiscal externalities in relation to the health care system (chapter 4.1). A brief introduction into the German health care system (chapter 4.2) will be followed by the calculation of the fiscal externalities of the British citizens in Germany (chapter 4.3). After a short introduction into the British health care system (chapter 4.4) the fiscal externalities caused by German citizens in Great Britain will be calculated (chapter 4.5). The main findings of this chapter will be reviewed in the conclusion (chapter 4.6).

4.1 What are fiscal externalities in the Health Care Sector?

In chapter two, which described the underlying concepts of this thesis, fiscal externalities were defined. In this subchapter the link between the general definition of fiscal externalities and fiscal externalities in the health care sector shall be elaborated.

Dahlby defines a direct horizontal tax externality in the following way: “A direct [horizontal] tax externality occurs when part of the tax burden is borne by individuals who do not reside in the jurisdiction which impose the tax.”[46] Instead of explaining fiscal externalities purely on the bases of residency, I want to use another approach towards fiscal externalities. Fiscal externalities do not only occur, in the case of a

[46] Dahlby (1996): p. 398

residency in another jurisdiction. It is also feasible that a person does not use services in the same monetary amount of which he would be entitled to, in respect to his contribution into the system. In the case of a mobile person, who lives only for a limited period of time in a special jurisdiction, the social contribution principle based on system, in which those who can pay do pay for those who can not pay, is not feasible. Monetary amounts, which are over- or underpaid in respect to received services during a special period of time will create a fiscal externality on individual bases. An adjusted definition of fiscal externalities is: “a fiscal externality occurs when part of the tax burden is borne by individuals, if they do not use the proportional amount of services.” In this case the state receives partially income without providing any services. If this is a positive fiscal externality for one state, it is also a negative fiscal externality for another state. Another state provides services without receiving payment for the offered services. The negative definition of fiscal externalities is “a negative fiscal externality occurs, when a state provides services which are used by individuals who do not pay for the services”. In this case the state has to compensate a negative finance gap.

Based on Dahlby’s general definition for horizontal tax externalities, a definition for fiscal externalities in the health care sector is: “A negative fiscal externality between different jurisdictions would occur if an individual from jurisdiction A uses the health care services in jurisdiction B, without paying for it. A positive fiscal externality would occur, if an individual from jurisdiction A finances the health care system in jurisdiction B without using its services.” As mentioned before, the mechanism of solidarity, in which the amount of payments and received services differ in different life- phases, is problematic in relation to foreigner, who only resides for a special life-phase in a country. To solve this problem this research will not look at the individual foreigners, but at the group of foreigners in the host country. When the solidarity-principle is only valid for people of the same citizenship, fiscal externalities by this group should be considered in their entirety. Based on this theoretical approach the group of German citizens in Great Britain and the group of British citizens in Germany will be researched on their relevance of creating fiscal externalities.

4.2 The German Health Care System

The German health care system is a system of statutory health insurance in which employees are mandatory insured in one of about 300 statutory health insurance. If their income is above a certain level employees can opt out of the mandatory system and join a private health insurances (in 2004 the level was an monthly income of 3487,50 €). Self-employed, civil servants and other not employed groups can also choose to join a private health insurance.

The health system is regulated by the "corporate government framework" (korporatistische Steuerung). The federal government only creates the framework and supervise the health care system. But the different actors of the health care system negotiate costs of healthcare services, the scope of the health care services or other operational issues.

In 2004, 10,6 per cent of the German GDP was spend on the health and therefore in the health care system. This equals the amount of 234 bn €. Additionally 59,1 bn € were paid as income benefits, which are not health care services, but purely monetary transfers. The main share of the total spending of 234 bn € was provided by the *Gesetzliche Krankenversicherung* (GKV)[47], with 56,3 per cent of the total amount. Out of pocket payments contribute 13,7 per cent and the *Private Krankenversicherung* (PKV)[48] contribute 9 per cent of the total 234 bn €. Other contributors to the funding of the health care system in Germany were the *Soziale Pflegeversicherung* (SPV)[49] with 7,5 per cent, public budgets with 6,2 per cent and others like the *Gesetzliche Rentenversicherung*[50], the *Gesetzliche Unfallversicherung* (GUV)[51] and employers with 7,3 per cent.[52]

In this study I will examine the fiscal externalities in regard to the members of the GKV. Therefore the entry conditions for British citizens into the GKV are important. The GKV covers all employees, students, trainees, pensioners, farmers and unemployed

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[47] "Gesetzliche Krankenversicherung" is the generic term for the mandatory health insurance in Germany

[48] „Private Krankenversicherung" is the generic term for the private health insurance in Germany

[49] „Soziale Pflegerversicherung" is the generic term for the mandatory nursing care insurance in Germany

[50] "Gesetzliche Rentenversicherung" is the generic term for the mandatory pension fund in Germany

[51] „Gesetzliche Unfallversicherung" is the generic term for the mandatory accident insurance in Germany

[52] See also Statistisches Bundesamt(2006): p. 11

(only registered unemployed). Civil servants and self employed are free to join the GKV. Spouses and children (until a certain age) of GKV-members are covered by the GKV as well.[53] In 2004, 70.271.279 people were insured in the GKV. 33.808.646 members of the GKV were liable to contributions, another 16.816.442 members were pensioners and therefore also liable to contributions and 19.646.191 members were covered by the insurance as family members.[54] The remaining 12.081.721 citizens were insured in the PKV, members of other systems (like the military forces) or had not insurance. They will not be considered in this research.

The entry criteria to the GKV do not differ on the basis of nationality. Therefore British citizens are insured in the GKV, if they are members of one of the above mentioned groups. I will assume in the following, that the population of Germany and the British citizens in Germany are similar in their health care insurance patterns.

4.3 Fiscal Externalities in the German Health Care System

In this chapter I will examine the fiscal externalities caused by British citizens in Germany. First I will look at the funding of the health care system. How much money do British citizens in Germany contribute to the funding of the German health care system? Secondly, I will look at the expenditure side. How much money is spend on health care services for British citizens in Germany? The difference between both amounts is the fiscal externalities caused by British citizens in the German health care system. For the estimation of fiscal externalities in the German health care system, I will use data from the year 2004.

Before examining the German health care system I want to limit the area of this research. The German health care system has different sources of funding, but not all of them will be used in this research. Parts not included in the calculation of fiscal externalities in the German health care system are out of pocket payment and contributions from the private health insurances. Out of pocket payments are directly paid by the patients for received services. In the case of private health insurance, members pay an individualized amount based on their health risk structure. Both payments are personalized health care contributions and are in conflict with the idea of

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[53] See also http://www.bmg.bund.de

[54] See also Bundesministerium für Gesundheit (2006): p. 158

fiscal externalities, because there is no difference between the person, who receives and who pays for the services. To exclude those payments, the research will only concentrate on payments done by members of the GKV, which are not personalized. The relevant amount of healthcare expenses paid by members of the GKV is in total 185 bn €.

In this thesis I will use he hypothesis that British citizens are similar to the total population of Germany in socio-economic terms and in their health status. The only recognized difference between the population of Germany and the British citizens in Germany is the difference in the demographic structure.

To analyze the payments into the health care system, I divided the population of Germany into different groups. The groups are: persons in the age under 15 years; working persons in the age between 15 and 65 years; non-working persons in the age between 15 and 65years; people in the age above 65 years. Each group has different characteristics, which result in different amounts of contributions into the German health care system. In the following I will look how the different groups contribute into the funding of the health care system.

The first way GKV-members finance the health care system is by paying health care insurance contributions to the GKV. In 2004 GKV-contributions amounted to 140,12 bn €. These contributions are paid by the working population between 15 and 65 (107,38 bn €) and by the pensioners (32,74 bn €).[55]

The second financial source is the SPV, which is attached to the GKV. The scope of inclusion of the SPV is slightly smaller compared to the GKV and is therefore negligible. The contribution to the SPV are paid by the working population between 15 and 65 (14 bn €) and by the pensioners (3,51 bn €).[56]

The third way, members of the GKV contribute to the funding of the health care system is through the public budget. To estimate the contributions of the public budget, I divided the public budget into three different clusters, which differ in regards to the population paying taxes into each cluster. The taxes of the first cluster are only paid by the working population between 15 and 65 years and amount to a total of 66,4 bn €. Only 5,41 per cent of the total public budget is allocated to the health care system. Therefore 3,59 bn € of the first tax cluster are allocated to the health care system. Further on only 85,36 per cent of the population of Germany are members of the GKV.

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[55] See also Bundesministerium für Gesundheit (2006): p. 128

[56] See also Bundesministerium für Gesundheit (2006)A: p. 40-41

3,07 bn € of the taxes paid by members of the GKV in the first tax cluster are allocated to the health care system. The taxes in the second cluster are paid by the working population between 15 and 65 years, the not-working population between 15 and 65 years and the population above 65 years. The amount of taxes paid by the members of the GKV in the second tax cluster, which are used to finance the health care system, are 3,61 bn €. The taxes in the third tax cluster are paid by the whole population. The contribution of members of the GKV into the funding of the health care system amounts to 5,71 bn € in this tax cluster. Altogether the members of the GKV contribute 12,39 bn € through the public budget into the financing of the health care system.[57]

The fourth financial source of the health care system is contributions of the GRV, of the GUV and contributions by the employers. These contributions are paid by the working population between 15 and 65 years. The membership in these social insurances is not linked to the membership in the GKV. The total amount has therefore to be adjusted to the members of the GKV, which represent 85,36 per cent of the total population of Germany. The members of the GKV are contributing 15,2 bn € into the funding of the health care system, by paying contributions into the GRV, the GUV and by contributions of their employers.[58]

After identifying the different funding sources of the health care system the next step is to break these amounts down to the individual members of the different groups. The average results are that a person under 15 years contributes 81,25 € per year into the funding of the German health care system, a working person between 15 and 65 years contributes 4.238,8 €, a not working person between 15 and 65 years contributes 141,29 € and person above 65 years contributes 2.931,35 €.

These data are now used to estimate the contribution of the group of British citizens in Germany into the German health care system. As mentioned before I will assume that the rate of membership of British citizens in Germany is equal to the rate of membership of the total population in Germany. The final result is that the groups of British citizens in Germany contribute in total 246.373.045 € or 2.992,38 € per person and per year into the funding of the German health care system. If the group of British citizens in Germany would have the same demographic composition as the general population of Germany, British citizens would only contribute 216.964.870 € in total or 2.635,16 € per person. Thereby an average British person in Germany contribute 357 €

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[57] See also Bundesministerium der Finanzen (2004): p. 53
[58] See also Statistisches Bundesamt (2006): p. 11

in total terms or 13,6 per cent in relative terms more into the funding of the German health care system than a person of the general population does. The data used for the calculations of the contribution of the group of British citizens into the German health care system can be found under Annex C.

In the second part of this chapter I will estimate the monetary amount of services used by the British citizens in Germany, which are members of the GKV. The available data make it possible to calculate the individual amount based on gender and age (six different age groups). Health care services consumed by people less than 45 years do only represent a small monetary amount. Health costs per person increase drastically above the age of 45 years. Further on, health care costs are higher for females than they are for males.[59] Based on the available data, British citizens in Germany, which are insured in the GKV, use health services with a monetary value of 191.475.889 € in total or 2.326,36 € per person and per year. If the group of British citizens in Germany would have the same demographic composition like the general population of Germany, British citizens would use services with the monetary value of 216.964.870 € in total or 2.635,16 € per person and per year. This means that health care services used by an average GKV-insured British person in Germany have an monetary amount, which is in total terms 308,8 € or in relative terms 11,75 per cent lower compared to an average citizen of the population of Germany. The used data for the calculations of the used services of British citizens in Germany can be found under Annex D.

To conclude, I want to calculate the fiscal externalities caused by British citizens in the German health care system. Therefore the monetary amount of contributions by GKV-insured British citizens in Germany, into the funding of the German health care system has to be compared with the monetary amount of services used by the same group. The group of British citizens contributes 246.373.045 € and they use services with a monetary amount of 191.475.889 €. The gap of 54.897.156 € in total or of 667 € per person are paid without receiving any services in return pose a fiscal externality. In relative terms this means that 22,3 per cent of the contributions paid by GKV-insured British citizens in Germany are fiscal externalities.

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[59] See also Statistisches Bundesamt (2006): p.28

4.4 The British Health Care System

The British health care system was founded in 1948 as a universal system. The "National Health Service" (NHS) is run by the state and offers almost all health services in Great Britain. For additional services or services of better quality 11,5 per cent of the population of Great Britain have private health insurance policies.[60] The NHS is divided into the NHS England, NHS Wales, NHS Scotland and NHS Northern Ireland, which are organisational independent.

The Department of Health is on the top of the NHSs' organisational structure and has the political responsible for the services delivered by the NHS. It controls 10 NHS Strategic Health Authorities, which are responsible for the policy and the fiscal implementation on regional level. Different NHS Trusts run the health system on the operational level. The most important kinds of NHS Trusts are the 152 NHS Primary Care Trusts, which spend around 80 per cent of the NHS's budget.[61] The NHS employs most doctors, nurses and other staff directly and is Europe's biggest employer with 1,3 million employers.[62]

For this research the access conditions of German citizens in Great Britain in the NHS system are important. Access barriers to the British health care system are in general low. Anyone, who is a resident or is taking up permanent resident in Great Britain, is allowed to use the services of the NHS free of charge, except for the common charges for services. Anyone, who is engaging employment or is self-employed in Great Britain, has the same rights to access the NHS. Spouses, civil partners and children are also covered by the NHS, if they are living or going to live in Great Britain on permanent basis. The intent to live in Great Britain on a permanent basis has to be proved before accessing the NHS. However, the range of accepted documents is broad and the level of control is low. Foreign students can access the NHS, if they are going to attend a full-time course of study with duration of more than a half year. If the course of study lasts shorter than 6 month, students are still able to access the NHS, but services are only free of charge for health condition that arose after the arrival in Great Britain.[63] To sum up, the access to the NHS has low entrance barriers. I can be assumed that all German migrants in Great Britain, which are the objects of this research, are able to access the NHS free of charge.

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[60] See also Light (2003): p. 27
[61] See also http://www.nhs.uk
[62] See also BBC (2006)
[63] See also Access Information for the NHS

In the fiscal year 2003/2004 the state provided the NHS England with a budget of 91,462 billion €. 88,014 billion € were allocated as resource budget and 3,613 billion € were allocated as capital budget. Additional 3,519 billion € were raised by charges and receipts. In the fiscal year 2003/2004, 13,96 per cent of the British budget was spend on the health care system.[64] In relation to the GDP, 8,1 per cent of the British GDP were spend on health care.[65]

The level of funding in the British NHS is in general lower than in comparable countries. However, the government started to increase the level of funding in the end of the 1990s. For the fiscal year 2007/08, a budget of 129,389 billion € is forecasted, which is an increase of 41 per cent compared to the fiscal year 2003/04 and an increase of almost 70 per cent compared the fiscal year 2001/02.[66]

4.5 Fiscal Externalities in the British Health Care System

In this subchapter I will examine the fiscal externalities caused by German citizens in the British health care system. Therefore I will first look on the income side of the NHS and in a second step look on the expenditure side of the NHS. For the estimation of fiscal externalities in the British health care system, I will use data of the fiscal year 2003/04.[67]

The first part of this chapter is dedicated to the question, in which way the German citizens in Great Britain contribute to the funding of the NHS. The NHS is funded by the state and thereby on the level of citizens by tax contributions. It is essential to recognize that not all taxes are paid by all groups simultaneously. The calculation will result in an individualized amount of contributions into the funding of the health care system for each person. Based on this data, I will be able to determine the monetary amount of contributions into the funding of the British health care system by German citizens. In the second part of this chapter I will asses the monetary amount of NHS services, which are used by German citizens in Great Britain. I will use the same methodology I used in chapter 4.3.

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[64] See also DOH annual report(2006): p. 129
[65] See also http://www.oecd.org
[66] See also DOH annual report(2006): p. 129
[67] The fiscal year for the NHS starts in the beginning April and ends at the end of March.

In this chapter I will again use the hypotheses that German citizens in Great Britain are similar to the general population of Great Britain in social-economic terms and in their health status.

To assess how much taxes the individual persons contribute, I divided the general population of Great Britain into seven groups: persons under 15 years, male working population between 15 and 65 years, female working population between 15 and 65 years, male non-working population between 15 and 65 years, female non-working population between 15 and 65 years, persons over 65 years and students.[68]

In 2003/04 the general budget of Great Britain was 655,38 billion €. Out of this budget 91,462 billion € or 13,96 per cent were allocated to the British NHS. At his point I will set up the assumption that the budget of the NHS is provided in equal terms by of the British budget. To measure the individualized contribution into the budget, I divided the income side of the British budget into ten categories. These categories are Income Tax (25,07 per cent of the general British tax revenue), National Insurance Tax (15,96%), Vat (15,21%), Net Borrowing (7,79%), Corporation Tax (6,19%), Fuel Duties (5,02%), Council Tax (4,14%), Business Rates (4,03%), Tobacco/Alcohol/Gambling (3,74%) and Other (12,85%).[69]

The taxes listed in the ten categories above are not paid equally by the whole population of Great Britain. It is necessary to determine, which tax is paid by which group of the population. I will assume that the Income and National Insurance Tax is only paid by the groups of the working population. The Vat, Net Borrowing and Other taxes are paid by all groups of the population. The tobacco, alcohol and gambling tax is paid by all groups of the population with the exemption of the children under 15 years. The fuel duties, council tax and business rates are paid by all groups of the population with the exemption of children and students. The corporation tax is not paid directly by any group of the population.[70]

Based on this assumption it is possible to calculate, how much taxes each group generate in each tax-category and thereby how much money each individual of each group contributes to the funding of the NHS. The result is that persons in both working groups contribute 2.348 € per person; persons of the two groups of non working

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[68] See also data provided in chapter 3. Note that the rate of employment in Great Britain is for males 77,8 per cent in the age group of 15 to 65 years and and for females 65,6 per cent in the age group of 15 to 65 years. Data provided by Eurostat.

[69] See also Department of Finance (2005): p. 250

[70] A matrix of the different kind of taxes and the different groups of the population can be found in Annex C.

persons between 15 and 65 years and the people over 65 years contribute 898€ per person. Each student contributes 632€ and each child under 15 years contribute 560€. These individual contribution rates can be transferred to the German citizens in Great Britain. German citizens in Great Britain contribute 108.666.260 € in total or 1359,18 € per person to the funding of the NHS. If the demographic composition of the German population in Great Britain would be similar to the demographic composition of the general population of Great Britain, the German population would contribute 117.470.139€ in the funding of the NHS in total or 1469,20 € per person into the funding of the NHS. Thereby an average German citizen in Great Britain pays in total terms 110,02 € or in relative terms 7,5 per cent lower contributions into the funding of the NHS than an average person of the British population.[71] The data used for the calculation of the contributions of the group of German citizens in Great Britain into the funding of the British health care system can also be found under Annex E.

In the second part of this chapter I will look at the expenditure side of the NHS. I will thereby assume that the available data on expenditure by age groups for hospital and community health services are transferable to all health care expenditures of the NHS.[72] The available data set distinguishes between 7 different age groups, which consumes different amounts of NHS services per year: 0-4 years: 2.809 € (this does also include the costs for births), 5-15 years: 465 €, 16-44 years: 918 €, 45-64: 1.177 €, 65-74 years: 2.856 €, 75-84 years: 4.952€, above 85 years: 10.999 These costs per person can be transferred to the group of German citizens in Great Britain. Based on the available data, German citizens in Great Britain use health care services in a monetary amount of 111.138.142,7 € in total or of 1.390 € per person. If the demographic composition of the group of German citizens in Great Britain would be the same as of the general population of Great Britain, German citizens would have used health care services in a monetary amount of 117.470.139 € in total or 1469,20 € per person. This means that health care services used by an average German person in Great Britain have an monetary amount, which is in total terms 79,2 € or in relative terms 5,4 per cent lower compared to an average citizen of the population of Great Britain. The used data for the

[71] Please note that the part of the corporation tax that contributes to the NHS funding as well, is not included in those figures. The corporation tax contributes 5,666 billion € into the NHS, which would equal 97€ per person of the general British population.
[72] Note that the available data only cover 60 per cent of the total health expenditures of the NHS.

calculations of the used services of German citizens in Great Britain can be found under Annex F.

To estimate the fiscal externalities caused by German citizens in Great Britain the contribution of German citizens in Great Britain into the funding of the NHS have to be compared with the monetary amount of the health care services used by the German citizens in Great Britain. This research shows that the group of German citizens in Great Britain consumes more health care services than they finance. While they contribute 108.666.260 € into the funding of the NHS, they use services in a monetary amount of 111.138.142,7 €. In monetary terms the group of German citizens cost the British health care system 2.471.936 € or 30,92€ per person and per year. Thereby the group of German citizens creates a negative fiscal externality in the health care systems of Great Britain.

4.6 Conclusion on fiscal externalities

Before concluding this chapter, I want to return to the subquestion of this chapter: "Which amount do the fiscal externalities have in monetary terms?" In this chapter I estimated the fiscal externalities in the health care sector caused by mobility and thereby answered the previous question. Even though the estimation of fiscal externalities is based on some hypotheses, the results offer some interesting new insights.

In the case of British citizens in Germany, the research shows high positive fiscal externalities for the health care system of Germany. British citizens contribute 246.373.045 € into the health care system, but only use services in a monetary amount of 191.475.899€. They create a positive fiscal externality in the monetary amount of 54.897.156 € in total, or of 666,75€ per person. In relative terms this means that 22,3 per cent of the contributions of British citizens into the German health care system are done without receiving any services in return.

To understand the reason for these fiscal externalities, a closer look into the income and expenditure side of the German health care system is needed. The GKV is mainly financed by social insurance contributions, which are paid by the working population between 15 and 65 years and to some extend by pensioners. A working person between 15 and 65 years contributes almost 4.240 € into the health care system, but a not

working person only contributes around 140 € into the system. Pensioners contribute around 2.930 €. On the expenditure side, health care expenses do rise with an increasing age. Persons younger than the age of 65 years create in average at most costs around 2.670 € (male) or 2.950 € (female). But persons above the age 65 years debit the health care system in average with around 5.440 € (male) or 5.790 € (female) and above the age of 85 even with around 12.700 € (male) or 16.630 € (female). In their demographic composition, British citizens in Germany are cumulated in the age group between 15 and 65 years, which represents the main contribution payer is the health care system. The group of British citizens is also underrepresented in the age groups above 65 years, which are most expensive in regard to the use of health care services. By paying in average higher contributions into the health care system and using a in average lower amount of health care services, the group of British citizens in Germany create a high fiscal externalities. Thereby these fiscal externalities are the result of the demographic composition of the group of British citizens in Germany. At this point I want to refer to Mester, who predicts that migrants help to finance the health care expenses of the older generations in the host country.[73] This theory of Mester is backed up by this research. British citizens' help to finance the health costs of the older generations in Germany by their contributions into the German health care system.

However, the second part of the research seems to contradict these findings, because the outcome is different than the outcome predicted by Mester. German citizens create negative fiscal externalities for the British health care system. While German citizens contribute 108.666.260 € into the funding of the British health care system, they use services in a monetary amount of 111.137.950 €. Thereby they create a negative fiscal externality of 2.471.690 € in total or of 31 € per person. After all the size of this negative fiscal externality is marginal, as the expenses top the contributions by 2,3 only per cent.

The question arises, why the British case is so different from the German case. A closer look on the income and the expenditure side of the British health care system gives an explanation. The British health care system is financed by tax and taxes linked to a working-income are a big share of the overall tax revenue. In Great Britain the working population between 15 and 65 years do contribute the highest individual amount to the funding of the health care system, with approximately 2.350 €. The group of not-working people between 15 and 65 years and the group of people above the age of 65

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[73] See also Mester (2000): p. 166-167

years contribute around 900 €. Each student only contributes around 630 €. On the expenditure side the level of used health care services is correlated to the age. People younger than 65 years debit the health care system in average with at most 1.100 € and students in average use health care services in a monetary amount of only around 860 €. But the costs of health care services rise drastically with increasing age. People in the age between 65 and 74 years create costs of 2.680 €, in the age between 75 and 84 years the costs increase to 4.650 € and people older than 85 years create in average costs of 10.320 €. Based on the demography of German citizens in Great Britain, a positive fiscal externality for the British health care system could be expected. Even though German citizens are almost equally represented in the older age groups, which represent high levels of usage of health care services, the number of German citizens in the age between 15 and 65 years is higher compared to the general demography of Great Britain. This suggests a positive fiscal externality for the British health care system. But in the case of fiscal externalities caused by German citizens in Great Britain a special group has to be taken into account: Almost 17 per cent of the German citizens in Great Britain are students. This reduces the number of working German citizens in the age between 15 and 65, which contribute the highest amounts to the funding of the British health care system. Further on students only pay low contributions into the health care system. These contributions do in average not even make up for costs created by students. The decrease of the number of "high-amount contributors" causes a shift in the balance of fiscal externalities. To some extend, the derivation may also be explained by the fact that the German population in the age of the workforce contains more female citizens, who have a lower participation rate in the workforce and therefore contribute less into the into the funding of the health care system. The result is a small negative fiscal externality for the British health care system. This finding is not in line with the theory of Mester. Nevertheless, positive fiscal externalities for the British health care system could be expected, if the unique effect of a high amount of students in Great Britain would not exist.

The finding of this chapter is that additional costs in the health care system caused by migration are not likely to occur for the hosting country. In fact this research suggests that the country of origin of the migrants will suffer negative effects as a result of the migration. These findings are only valid for the financing of the health care services. If investment into the health care infrastructure is needed additionally as a result of migration, as it is suggested by Mester, than the overall outcome could be different.

This research suggests that special characteristics of the group of migrants always have to be taken into account. In the case of German citizens in Great Britain the group of students causes special distortions. In the case of Mediterranean countries a special emphasis may be given to the group of pensioners.

Finally to estimate the fiscal externalities in the health care system between Germany and Great Britain, the fiscal externalities caused by British citizens in Germany and the fiscal externalities caused by German citizens in Great Britain has to be compared. In the German health care system positive fiscal externalities of 54.897.156 € are caused by British citizens and in the British health care system negative fiscal externalities of 2.471.690 € are caused by German citizens. This means that the overall balance between the German and the British health care system represents a positive fiscal externality for the German health care system in the monetary amount of 57.368.846 €.

5. How to deal with fiscal externalities in the health care system?

So far this research shows that fiscal externalities in the health care system caused by mobility exist at least in Germany and Great Britain. It is reasonable to assume that fiscal externalities exist between other countries of the European Union as well. The existence of a whole network of fiscal externalities between each of the 27 member states could be problematic, because fiscal externalities can create fiscal distortions in the single member states and become a threat to the process of European Integration.
In this chapter I will present general solutions for the problem of fiscal externalities and transferred these solutions to the problem of fiscal externalities in the health care system. The first solution is based on Browning and aims to prevent fiscal externalities from occurring. (chapter 5.2) The second solution consists of the internalization of fiscal externalities by transferring the responsibility of the health care system to the European level. (chapter 5.3) The design of an intergovernmental grant system to balance the appearing distortions is the third solution. (chapter 5.4) But before dealing with possible solutions, the question if fiscal externalities in the health care system are a threat to the European Integration should be answered. (chapter 5.1) The end of this chapter should give a conclusion on solutions for fiscal externalities. (chapter 5.5)

5.1 Do fiscal externalities pose a relevant threat for European Integration?

Fiscal externalities are only a threat to the process of European Integration, if the financial redistribution caused by fiscal externalities reaches a certain extend, which would put states into the need to start some kind of actions against fiscal externalities. These actions could pose a threat to the right of free movement in Europe if they aim to decrease the fiscal externalities by reducing the rights of free movement. But what is the amount of fiscal externalities, which states are willing to accept? Do the monetary amounts caused by German citizens in Great Britain and by British Citizens in Germany already qualify to start some kind of actions? The absolute amounts of fiscal externalities are low compared with the overall spending in the health care system of both countries. But what if the fiscal externalities caused by the citizens of all 27 member states are taken into account?

The acquired data could be used to make a projection on the fiscal externalities the citizens of the EU-15 could cause in Germany and Great Britain. The citizens of the EU-15 would have caused fiscal externalities with a monetary amount of 124.077.131€ for the British health care system in 2004, if the special group of students is not considered. This amount represents only 0,14 per cent of the total health care spending of the British health care system. The case is similar in Germany. The fiscal externalities caused by EU-15 citizens in Germany in 2004 can be assumed to be 730.446.342€. This represents only 0,39 per cent of the health care spending in the GKV. If the amount of the fiscal externalities is compared with the total spending on health care, fiscal externalities do not seem to have the power of causing relative distortions. However, as both amounts are positive it is rather unlikely that Germany or Great Britain would take actions to reduce this source of money.

Maybe another approach will give a more useful answer. Fiscal externalities occur as a result of an EU-policy (free movement). Therefore it may be reasonable to compare the amount of fiscal externalities in each country with the contributions of each country into the EU-budget. In 2004 Great Britain contributed 11.682.500.000 € into the EU-budget and was a net-contributor to the EU budget with 2.864.900.000 €. The fiscal externalities caused in the health care system equal 1,06 per cent of the total contribution of Great Britain into the EU-budget.[74] Germany contributed in 2004 the absolute amount of 20.229.800.000 € into the EU-budget and was a net-contributor with an amount of 7.140.400.000 €.[75] The fiscal externalities in the health care system equal 3,61 per cent compared to the total contribution of Germany into the EU-budget. Are fiscal externalities in the amount of 3,6 per cent of the contributions into the EU-budget high enough to cause enough distortions in the economy of a member state, to get the member state to take actions against these distorting effects? The numbers for Germany and Great Britain do not provide a definite answer. But in the case of a country that suffers negative fiscal externalities in the health care system and that maybe also contributes more into the EU-budget, than it gets out of the EU budget, the question is likely to be Yes.

However, fiscal externalities caused in jurisdiction A have also to be balanced with the fiscal externalities caused by the citizens of jurisdiction A in other jurisdictions. Fiscal externalities caused in Great Britain and in Germany have to be balanced with the fiscal

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[74] See also EU budget 2004: p. 63
[75] See also EU budget 2004: p. 63

externalities caused by German and British citizens in the other EU-15 member states. Without this comparison the question of the impact of fiscal externalities can not finally be answered. But still it seems possible that singe member states could be subject of relative high fiscal externalities, maybe also as the result of a special effect in the composition of the group of foreigners, like it is the case for Great Britain. Therefore it should be assumed in the following that fiscal externalities are able to pose a relative threat to the European Integration and that measures have to be take to deal with fiscal externalities in the health care system to prevent damage to the European Integration.

5.2 Solution 1: Prevention of fiscal externalities

The first solution for handling the problem of fiscal externalities is based on Browning. Browning argues that "it (fiscal externalities) reflects the distorting effect of the policy (…) that creates the fiscal externality. Fiscal externalities themselves do not cause any new inefficiency in resource allocation."[76] Browning's solution is to change the underlying system so that fiscal externalities do not occur anymore.

The first step is to analyze the underlying policy in order to find the reason for the distorting effect. In our example the underlying policy is the solidarity principle. Solidarity means that those who can pay finance the system and do also pay for those who can not pay. Thereby interpersonal fiscal externalities are a common concept, which is also transferred to the groups of foreigners. Solidarity is the underlying concept in the financing of the German GKV and of the British NHS. To prevent fiscal externalities between different persons or groups, like the groups of foreigners, would mean to abolish of the concept of solidarity.

It could also be argued that the problematic underlying policy, which causes fiscal externalities, is the extension of the solidarity principle to foreigners. The solution to this problem would be not to allow foreigners to access the mutually supportive community of the health care system. Instead foreigners could use the services of the health care system, but the services would have to be paid by the health care system of the foreigners' home country. Sinn proposes a similar solution called "Nationality Principle".[77] An solution like that would create new problems, like the non-comparability of different health care systems, different cost structures or the issue of

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[76] Browning (1999): pp. 13-17
[77] Sinn (1997): p. 16

taxing or paying social insurance contributions to a health care system in another state than the state of residency. Therefore the idea of the "Nationality Principle" is not a reasonable solution for the problem of fiscal externalities in the health care system.
However, Browning's concept could be useful in cases, which are different from the case analyzed in this thesis. In the case that fiscal externalities occur from taxation of mobile objects on low levels of government, it would be better to prevent fiscal externalities from occurring, by adjusting the tax system, than to build a grant system to balance the fiscal externalities.

5.3 Solution 2: Internalize fiscal externalities

A second solution to deal with the problem of fiscal externalities lies in the theory of fiscal federalism, in more detail in the assignment of task between the different layers of government. If the health care system would be managed on European level, fiscal externalities created by mobility between different member states would be internalized. But is the European level the appropriate level to provide health care services?
The division of tasks between different levels of government is a basic element of the theory of fiscal federalism. So which is the appropriate level for the public good of health care? Oates defines that "Decentralizes levels of government have their raison d'etre in the provision of goods and services whose consumption is limited to their own jurisdictions."[78] Otherwise "economy of scale" effects or "centralization to prevent spill-overs" suggest a centralized provision of public goods. Does heterogeneity in health care preferences justifies a decentralized provision of health care services? If not, health care services should be centralized from the theoretical point of view.
Heterogeneity in the preferences towards health care would demand heterogeneity in health issues, e.g. different health care profiles in different geographical regions of Europe. It is questionable that a relevant difference in the demand for health care services exists throughout Europe, which would justify a national health care provision. But different living standards and economic conditions are relevant for the demand of health care services as well. The economic wealth of a society is likely to influence the level of health care services, which is considered as necessary, e.g. in the sphere of high

[78] Oates (1999): p. 1121.

specialized and therefore expensive health care services. As a result e.g. the Latvian health care system has lower standards and services as the Dutch health care system, e.g. in relation to the available treatment for cancer patients. Different income levels make it likely that in wealthy jurisdictions more expansive and specialized health care services can be delivered by a health care system than in poorer jurisdictions. Therefore economic heterogeneity is a argument for decentralized health care provision.

Apart from economic reasons, I would like to consider political reasons as well to define the appropriate level for the provision of health care services. The discussion on a future European welfare state provides arguments similar to those that could be used in this discussion. One author in this discussion is Kleinmann.[79] The prevention of social dumping, the linkage between the internal market and social policies or the need to fulfill the idea of a European social citizenship favors the idea of a European welfare state. On the other side arguments like the shortcomings of the European institutional building, the failure of social-democratic players on European level, the heterogeneity of social services in Europe or the unwillingness of member states to give up sovereignty on social policies adverse a European welfare state.

The missing heterogeneity of preferences towards health care services inherent the European Union does in my view support a centralized provision of health care services in Europe. But the economic differences between the member states of the European Union make a strong argument against a European health care system. But even more important, national governments will not be willing to give up the sovereignty over the health care system. Therefore the centralized provision of health care services is not a reasonable alternative for the internalization of fiscal externalities in the health care system.

5.4 Solution 3: Built intergovernmental grant system

The third solution is to internalize fiscal externalities by creating an intergovernmental grant system. A grant system would have to compensate the negative impact of suffered externalities in monetary terms.

Grant systems are an important part of the theory of fiscal federalism. However, Dahlby draws to attention that before creating an intergovernmental grant system, another

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[79] See also Kleinmann (2002)

possibility should be considered: “in some cases it may be better to re-assign tax powers or expenditure responsibilities rather than try to design a system of grants that will make an unsatisfactory tax and expenditure assignment function properly.”[80] This would point into the direction of Sinn’s “Nationality principle” that was already mentioned before.

Intergovernmental grants can be in horizontal direction (e.g. between different member states of the European Union) or in vertical direction (e.g. between the member states as lower level and the European Union as superior level). The literature on fiscal federalism recognizes three different categories of grants. The first category internalizes spillover benefits to other jurisdictions, the second ensures fiscal equalization across jurisdictions and the third aims to improve the overall tax system.[81] Based on Gramlich, the third category of intergovernmental grants is justified by political-institutional reasons. In this case the federal government collects taxes and passes parts of this revenue on to lower level of government in the way of a closed-ended categorical grant. This kind of grant can be used to finance the implementation of services on local level, which are assigned from the federal level.[82] Oates emphasized the issue of revenue sharing and the possibility for the federal level to levy taxes more progressively than local level is able to. On local level progressive taxation is not advisable, because it can be avoided by mobility.[83]

The second category of grant ensures fiscal equalization across jurisdictions. The justification is to enhance equity between different jurisdictions. These grants should be unconditional. They can be based on different equality objectives, like the equalization of fiscal capacity or fiscal performance or like a zero-level or a full level equalization. Different ways of equalization are discussed in more detail by Groenendijk.[84] The problem of fiscal externalities can not be solved by fiscal equalization measures. Therefore equalization grants are not a solution for fiscal externalities in the health care system.

The third kind of intergovernmental grant is most interesting for the case of fiscal externalities, because it aims at the internalization of spillover benefits to other jurisdictions. “Direct benefit spillovers by state governments have traditionally

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[80] See also Dahlby (1996): p. 403
[81] See also Oates (1999): p. 1126
[82] Gramlich (1977): p. 221
[83] See also Oates (1999): p. 1127
[84] See also Groenendijk (2003): p. 5

provided a rationale for matching expenditure grants from a central government."[85] Further on, Dahlby defines that "the federal government should provide state i with an open-ended matching grant, where the matching rate (...) is equal to the fraction of the direct benefit which accrue to individuals outside of state i."[86] For the case of fiscal externalities in the health care sector this would mean that the European level should compensate member states for the fiscal externalities suffered in the health care sector. This category of grants could be a solution for the problem of fiscal externalities in the health care system. The "spillover-compensation" grant can be vertical as well as horizontal. In a horizontal setting, member states would create a compensation scheme between themselves without using the superior (European) level.

What advantages or disadvantages would a vertical or a horizontal compensations scheme have? The main advantage of a vertical compensation scheme would be that the existing framework of the EU could be used to establish and to run such a compensation scheme and that the inclusion of all member states could be enforced. The main disadvantage would be the problem of low financial resources on European Level for such a compensation scheme.

The main advantage of a horizontal compensation scheme would be that the nation states would be directly involved. The nation states have the financial resources to actually run a compensation scheme. The biggest problem would be the inclusion of all member states, especially of those, which would be net-contributors.

Therefore a mixture of both ways would be the best solution. The legitimacy of a compensation mechanism could be provided by the European Union. If the compensation mechanism would be run on European level, member states would face high political costs to opt-out of this mechanism. To cover the financial side, the member states should also be involved directly as well, because the European level is not able to provide the financial resources. Therefore the member states would have to provide the fiscal resources, by making more money available to the EU budget or by redistributing money from coffers that do already exist in the EU budget.

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[85] Dahlby (1996): p. 408
[86] Dahlby (1996): p. 408

5.5 Conclusion on handling fiscal externalities

In this chapter different possible solutions to deal with fiscal externalities were presented. But which solutions is the best for the problem posed by fiscal externalities in the health care system? The idea of Browning to prevent fiscal externalities from occurring would mean to undermine the solidarity principle of the health care system, which should be rejected. Another interpretation of his idea leads to the "Nationality Principle", which should be dismissed due to its organizational difficulties. The internalization of fiscal externalities by transferring the responsibilities for health care to European level is not a feasible alternative, either. The heterogeneity in health care preferences due to different economic capacities is one reason. If these are not considered, a European health care system would run the risk, of becoming a big redistribution program, in which wealthy stated would subsidize the health care system of the poorer states. Further more, the nation states will not be willing to give up a central element of its national competences by transferring the responsibility for the health care system towards European level. The third solution the creation of an intergovernmental grant system is more likely. By combining the advantages of a vertical compensation scheme (organizational framework existing, legitimacy, inclusion) with the advantages of a horizontal compensation scheme (financial resources), a "third-way" compensation scheme could be created. In an EU supervised compensation scheme an opt-out of single nations would be less plausible and the legitimacy of such a grant system would be increased. As the compensation scheme would be the result of distortions caused by treaty provisions of the EU, the European level should be responsible for solving this problem. An EU engagement in the solution for these fiscal externalities is the consequence. The member states of the EU have to be involved to secure the means of financing. Under the existing financial framework, money would have to be redistributed from other projects, funds or policy fields. This is not advisable. On the other side a general enlargement of the EU budget is not feasible due to the continuous refusal of the member states to enlarge the budget of the EU.

But still some general problems for the establishment of a compensation scheme remain. First of all, the exact amount of fiscal externalities has to be measured. The compensation rate per foreign citizens could depend on a mix of different characteristics like the age, the sex, the income, the family status, the time of residence,

the level of health care services in the host country and some more. A calculation method would have to be found. Thereby different nations would lobby for their interests and for the recognition of special effects. Great Britain might lay a special emphasis on students, while Spain and Italy might have a special interest in a higher compensation for pensioners. Another special effect could be the emigration of high numbers of young and high-qualified citizens, like it is the case in the Central and East European member states (CEE-10). This effect can be described as brain-drain and is likely to have negative effects on the funding of the health care system of the CEE-10. To find a calculation method would mean involve difficult negotiation between the member states. Based on the agreed methodology of calculation, the net contributors and net receivers are likely to differ.

The next issue to be solved is to whom compensation payments should be directed to. In Great Britain the NHS is funded by the state, but in Germany different social insurance organizations are involved in the funding of the health care system. The different legal status of these recipients could be problematic.

But the most important question is where the money for the compensation scheme should come from. It is reasonable to assume that member states, which are already net-contributor to the European Union, like the Netherlands, Germany or Great Britain, are not willing to increase their net-contributor position, even though they are subject of positive fiscal externalities. The setting up of a compensation scheme would be easiest, if an already existing budget like the EU budget could be used. Member states, who suffer negative fiscal externalities caused by mobility in the health care system, could be compensated from the EU budget. On the other side, member states, which are subject to positive fiscal externalities, would have to pay an additional monetary amount into the EU budget. A general increase of the budget would not resolve the problem, because member states, which suffer positive fiscal externalities, should cover the costs of payments to member states, which suffer negative fiscal externalities. For the moment this problem shall remain unsolved.

6. Conclusion

Before concluding this paper I will briefly recapitulate the findings of this research.
The paper starts with the analysis of the mobility and demography of the group of British citizens in Germany and the group of German citizens in Great Britain. The demographic analysis shows that the foreigner groups differ in their demographic composition from the general population of the host country. In both cases the group of people in the age between 15 and 65 years is overrepresented in the group of foreigners and the group of people in the age under 15 years and in the age above 65 years are underrepresented.
Based on the hypothesis that the group of foreigners is in socio-economical terms comparable to the general population, different demographic compositions will cause fiscal externalities in the health care system. As a result of the different demographic composition, the groups of foreigners do on the one side contribute more money per person into the funding of the health care system, compared with the general population. On the other side the groups do use a lower amount of health care services per person than the general population does. This means that the group of German citizen in Great Britain and the group of British citizen in Germany cause in general a positive fiscal externality for the health care system of the host countries. But the research shows also that this general result do not have to be valid, if the group of foreigners has special characteristics. In the case of German citizens in Great Britain a special characteristic exists in the high number of students. Students do not contribute a high monetary amount into the tax funded British NHS. Although they do not use health care services of a high monetary amount, the overall result is that the positive fiscal externalities in the case of Great Britain changes into a negative fiscal externality.
At this point I want to come back to the research question formulated at the beginning of this thesis: “How can fiscal externalities in the health care system be prevented of having distorting effects on the European Integration?” After assessing the amount of fiscal externalities, the question to be answered is, if these fiscal externalities have a distorting effect on the process of European Integration. This question can not finally be answered by this research. But it can not be assumed, that fiscal externalities do not have any effect or will not become relevant in the future, as well. It is even likely that fiscal externalities in the health care systems across Europe will increase, when the citizens of the CEE-10 will get the same rights of free movement, like the citizens of

the EU-15 already have. Based on the experience of Great Britain and Ireland, which did not limit the access to their labour markets for the citizens of the CEE-10, it can be expected that high levels of mobility from the CEE-10 to the EU-15 will appear. Therefore it shall be assumed that fiscal externalities in the health care system can pose a relative threat to the process of European Integration.

At this point I will extend the impact of this research above the scope of the health care system. Health care is only one public service, out of a broader group of welfare state services. Other welfare state services are the pension systems, unemployed benefits and mandatory work-accident insurances or other social benefits. Although these welfare state services maybe have higher access barriers, they are all affected by fiscal externalities caused by mobility of EU citizens. Especially in the case, that welfare state services are tax funded and foreigners have to fulfill certain criteria to access the social services, fiscal externalities will occur. If possible externalities in other welfare state services are taken into account, it is reasonable to assume that the overall level of fiscal externalities could reach a monetary amount that qualifies of causing distortions in the finances of member states. The growing socio-economical heterogeneity between the member states of the EU, as a result of recent enlargements, will make the issue of fiscal externalities even more important in the future.

If the overall picture of fiscal externalities in the European Union is taken into account, it seems essential to find ways to deal with fiscal externalities in the future. But what are possible solutions for this problem? The prevention of fiscal externalities would possibly cause more harm to the concept of mobility than the current fiscal externalities do. The internalization of welfare state services on European level is neither to prefer from a theoretical point of view, nor does the political realities make this solution a feasible alternative. The best solution is the design of an intergovernmental grant system. For organizational and legitimacy reasons such a grant system should not be designed horizontal (between the member states), but vertical (between the member states and the European level). This open-ended matching grant should only compensate for negative effects of fiscal externalities and not contain universal redistribution objectives.

The best solution for the problem of fiscal externalities in the welfare state services of EU member states would be a compensation scheme, which is established on EU level. The legitimacy for a compensation fund would be highest, if it is organized by the same level, which causes the fiscal externalities. In the conclusion of the previous chapter three remaining problems were mentioned. The problem of the addressee of the

payments and the problem of defining the height of compensation payments should not be discussed at this point. However, these are questions that might be best answered on a technical level rather than on a political level. If the political level would become involved in those decisions the transparency and credibility of the compensation scheme could suffer. The remaining and in my view most important question is, where the money for a compensation scheme should come from. Member states made clears statements in the past that they are not willing to increase the level of the EU budget over a certain limit, close to 1,05 per cent of the GNP of the European Union. It is unlikely to assume that member states would change their opinion for a new compensation scheme. The best solution would be, if the new compensation scheme would be established outside of the EU budget, but managed on the EU level, maybe by a new established Directorate General in the European Commission. Decisions regarding the compensation scheme should be done by the European Parliament, which would also control the Commission in the implementation of the compensation scheme. To eliminate political influence of the member state, the Council should not have a role in this new compensation scheme. Their only role would be in the equipment of the compensation scheme with financial resources. Not all member states would have to contribute into this new coffer, but only those member states, which are subject to positive fiscal externalities. On the other side only those member states, who suffer negative fiscal externalities would receive money from this compensation fund.

It might prove difficult for various reasons to establish a new fund system like this. Therefore another alternative should be mentioned at this point as well. If a compensation scheme would be established in an already existing organizational framework, it could avoid many problems. In the current financial constitution of the European Union, the structural funds could be an alternative to incorporate a compensation scheme for fiscal externalities caused by mobility. The structural fund is a mixture of re-distributional funds together with a rather small amount of earmarked funds like the LEADER and the URBAN program. Inherent the structural fund a MOBILITY program could be established which would compensate social welfare services of states for disadvantages caused by mobility. As this solution could ease the introduction of a compensation scheme, there are also a couple of good reasons, which would suggest that using the structural funds for a compensation mechanism is not the best solution. In recent years the structural funds was object of different reforms to simplify the structural funds and to increase its efficiency and transparency. The

creation of a new program would stand in the way of these efforts. Further on, the structural fund targets at regions or special projects and the introduction of states or state services as receiver of its funds could be problematic. And most important, the use of the structural funds would not solve the problem of the missing financial resources. It would be likely that the member states would not provide additional financial resources and that other funds of the EU budget would have to compensate the financial gap.

I want to conclude this paper with some considerations about possible obstacles towards a compensation scheme for fiscal externalities caused by mobility. The first obstacle lies in the legitimacy conflict that could be created. A compensation scheme would be the ultimate admission that the treaties create negative spill-overs. Thereby a compensation scheme could question the idea of mobility itself.

A second remark has to be made about the issue of additional money. It seems reasonable to assume that due to mobility flows from the CEE-10 towards the EU-15, the countries of the EU-15 would be the net-contributors of a new compensation scheme for fiscal externalities. Today's net-contributors of the EU budget and the net-contributors or a new compensation scheme are likely to be the same. Those countries would oppose a new compensation scheme that would further diminish their position towards the EU in monetary terms. The access to the young and high-qualified workforce of the CEE-10 countries might have been a reason for the enlargement and a justification for redistribution towards those countries. This could be called into question, if a compensation scheme would be established, which would punish the access to this workforce.

A third question is about the justification of compensation payments for different groups. The research shows that high amounts of foreign students can cause negative fiscal externalities. The same could be assumed for high numbers of foreign pensioners. Compensation payments to countries, which host those groups, would be the logical result. But are high numbers of students or pensioners really a negative effect for a host country? If the foreign students decide to stay in the host country, it gains foreign young and high-qualified members for its workforce. A compensation for student seems doubtful under this argumentation. The same objection can be made for pensioners. The groups of people above 65 years are also called "golden agers", because of their wealth and high living standard. If wealthy foreign pensioners, which

are likely to be mobile, spend their retirement in a country and thereby spend their money in this country, an additional compensation seems also questionable.
Overall it is likely that compensation payments would come from the EU-15 member states and go to CEE-10 member states. The CEE-10 countries will have to be compensated for negative fiscal externalities in their welfare state systems, because it is not likely that mobile citizens from the EU-15 can fill the gap opened by mobile CEE-10 citizen. In other words, the CEE-10 countries would be compensated for the fact that their high-qualified citizens migrate into the EU-15 member states. The compensation scheme could then be interpret as a compensation scheme for immigration of high-qualified workers. Many CEE-10 countries already suffer from brain-drain and are not interested that such a trend would holds on. Therefore it is possible, that money from compensation schemes would be used to prevent further migration of high-qualified citizens. New barriers towards mobility would be created.
But the compensation scheme could be problematic in the net-contributor countries as well. Migration from the CEE-10 countries into the EU-15 countries would create certain pressure in the labour markets of the EU-15 countries. Higher unemployment rates in the EU-15 countries could be the result. At this point it would be difficult for politicians to justify a compensation scheme that compensates foreign countries with tax money for the fact that foreign citizens take over jobs in the own county.
These and other arguments could posse problems for a compensation scheme for fiscal externalities in the health care system and would have to be considered before designing a compensation scheme. If the compensation scheme would result in new barriers towards mobility it could be better, not to create a compensation scheme in the first place.

Even if a compensation scheme for fiscal externalities in welfare state services inherent the EU should be established from a normative point of view, the final decision to do so lies in the political field. The creation of a compensation scheme seems unlikely as different member states would have to increase their net-contributor position towards the European level. Therefore it seems more reasonable to use already existing mechanisms and to redistribute money from other policy fields of the European Union, to achieve a compensation for fiscal externalities in welfare state services. The easy alternative would be to recognize fiscal externalities as negative effects, which have to be born in order to win the higher positive effects of mobility inherent Europe.

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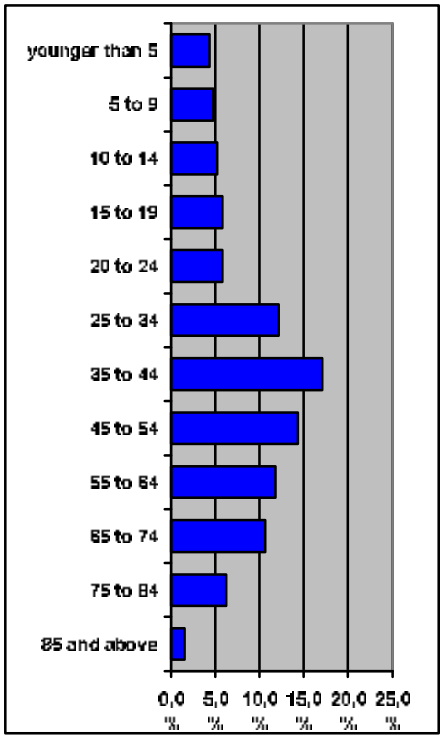
8. Annex

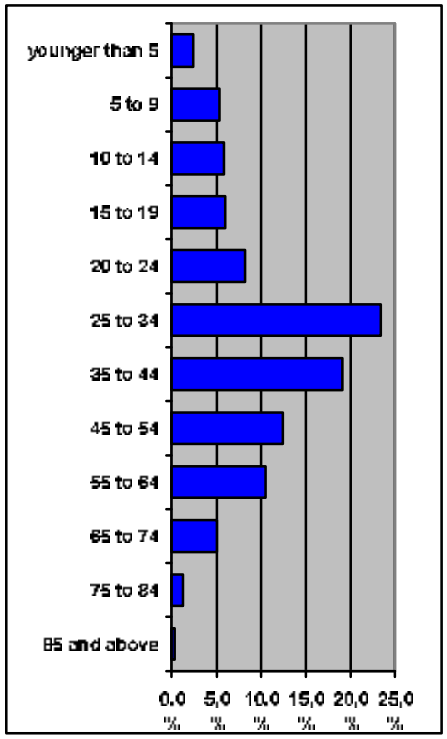
8.1 Annex A: Demography of different groups in Germany

General demography in Germany



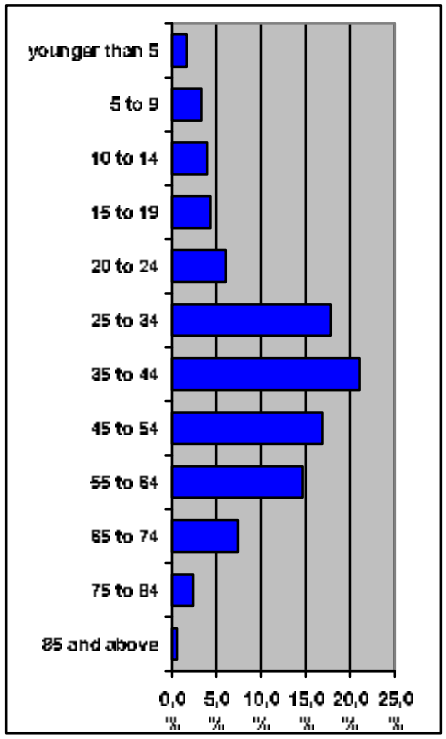
Source: Own graphic data provided by Statistisches Bundesamt
data from 31.12.2004

Demography of the group of all foreigners in Germany



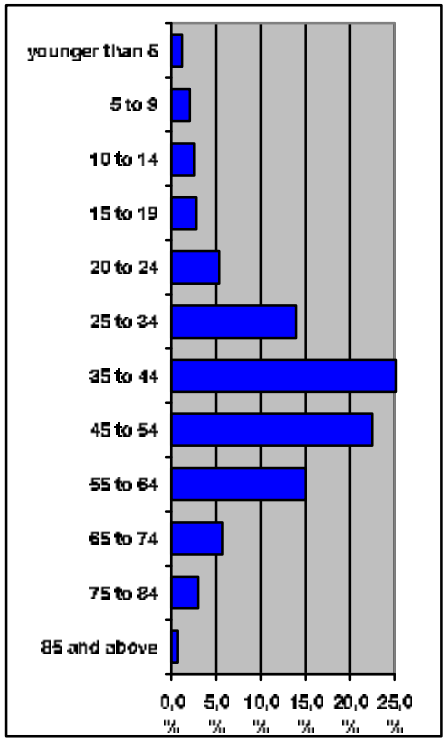
Source: Own graphic data provided by Statistisches Bundesamt
data from 31.07.2007

Demography of EU-15 citizens in Germany (except Germans)



Source: Own graphic data provided by Statistisches Bundesamt
data from 31.12.2006

Demography of British citizens in Germany



Source: Own graphic data provided by Statistisches Bundesamt
data from 31.12.2006

General demography in Germany

	Male	Female	Persons	Percent
Younger than 5	1.874.100	1.782.200	3.656.300	4,44%
5 to 9	2.040.000	1.935.000	3.975.000	4,83%
10 to 14	2.203.000	2.090.300	4.293.300	5,21%
15 to 19	2.455.300	2.332.500	4.787.800	5,81%
20 to 24	2.480.700	2.409.500	4.890.200	5,94%
25 to 34	5.106.500	4.927.600	10.034.100	12,18%
35 to 44	7.204.400	6.850.300	14.054.700	17,07%
45 to 54	5.919.000	5.826.800	11.745.800	14,26%
55 to 64	4.797.600	4.898.600	9.696.200	11,77%
65 to 74	4.102.900	4.700.400	8.803.300	10,69%
75 to 84	1.824.900	3.327.900	5.152.800	6,26%
85 and above	305.700	957.800	1.263.500	1,53%
In total	40.314.100	42.038.900	82.353.000	---

Source: Own graphic data provided by Statistisches Bundesamt
data from 31.12.2004

Demography of the group of all foreigners in Germany

	Male	Female	Persons	Percent
Younger than 5	77.634	71.386	149.020	2,39%
5 to 9	161.599	152.682	314.281	5,32%
10 to 14	200.820	189.959	390.779	5,87%
15 to 19	207.476	195.648	403.124	5,99%
20 to 24	253.798	274.961	528.759	8,21%
25 to 34	778.747	790.605	1.569.352	23,44%
35 to 44	710.332	625.775	1.336.107	19,15%
45 to 54	436.317	415.716	852.033	12,38%
55 to 64	377.520	343.988	721.508	10,53%
65 to 74	217.636	149.314	366.950	5,06%
75 to 84	48.414	49.577	97.991	1,34%
85 and above	7.490	11.713	19.203	0,27%
In total	3.493.799	3.262.012	6.755.811	---

Source: Own graphic data provided by Statistisches Bundesamt
data from 31.07.2007

Demography of EU-15 citizen in Germany (except Germans)

	Male	Female	Persons	Percent
Younger than 5	---	---	24.683	1,69%
5 to 9	---	---	54.166	3,28%
10 to 14	---	---	65.529	3,97%
15 to 19	---	---	71.031	4,30%
20 to 24	---	---	100.795	6,11%
25 to 34	---	---	293.431	17,78%
35 to 44	---	---	346.236	20,98%
45 to 54	---	---	279.600	16,94%
55 to 64	---	---	242.059	14,67%
65 to 74	---	---	122.306	7,41%
75 to 84	---	---	40.183	2,43%
85 and above	---	---	10.560	0,64%
In total	---	---	1.650.579	---

Source: Own graphic data provided by Statistisches Bundesamt
data from 31.12.2006

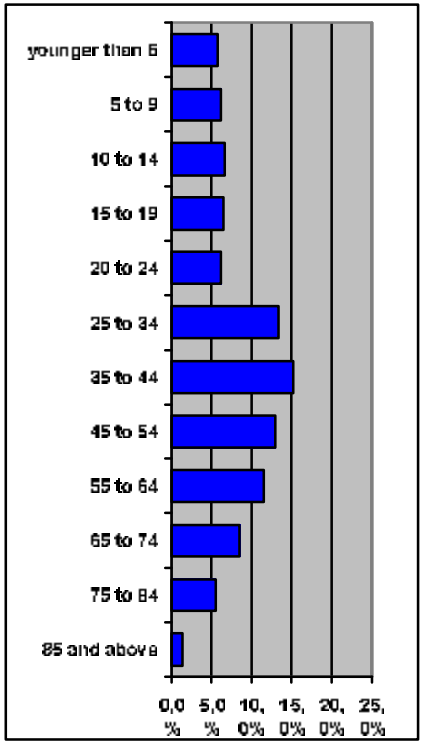
Demography of British citizens in Germany

	Male	Female	Persons	Percent
Younger than 5	640	608	1.248	1,29%
5 to 9	1.029	1.007	2.036	2,11%
10 to 14	1.285	1.163	2.448	2,54%
15 to 19	1.376	1.317	2.693	2,79%
20 to 24	2.476	2.593	5.069	5,25%
25 to 34	7.652	5.877	13.529	14,19%
35 to 44	15.466	8.721	24.187	25.06%
45 to 54	14.300	7.449	21.749	22.54%
55 to 64	8.858	5.638	14.496	15,02%
65 to 74	3.741	1.729	5.470	5,67%
75 to 84	1.295	1.557	2.852	2,96%
85 and above	300	380	680	0,76%
In total	58.433	38.074	96.507	---

Source: Own graphic data provided by Statistisches Bundesamt
data from 31.12.2006

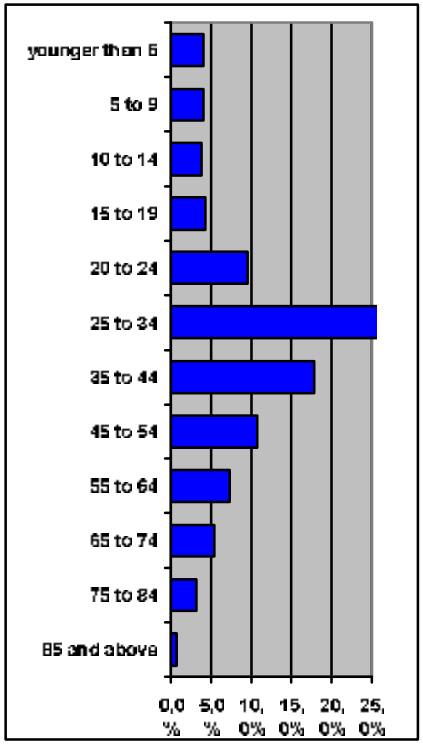
8.2 Annex B: Demography of different groups in Great Britain

General demography in Great Britain



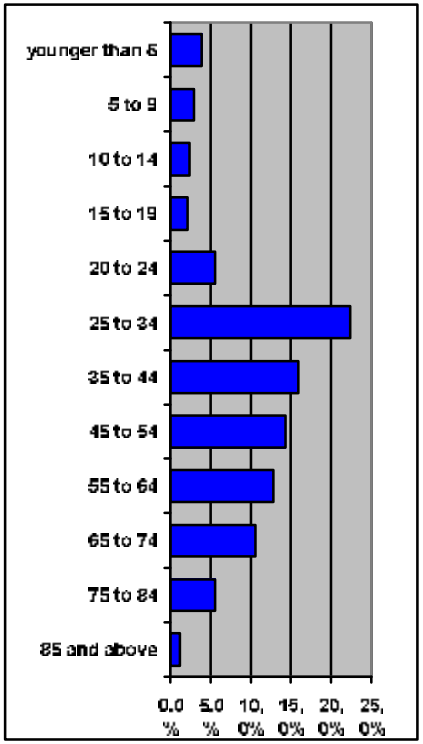
Source: Own graphic data provided by Eurostat data from 2003

Demography of the group of all foreigners in Great Britain



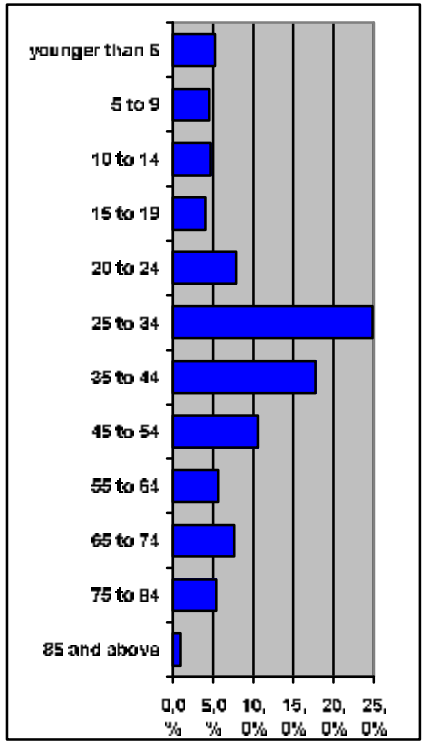
Source: Own graphic data provided by Eurostat data from 2003

Demography of EU-15 citizens in Great Britain (except British)



Source: Own graphic data provided by Eurostat data from 2003

Demography of German citizens in Great Britain



Source: Own graphic data provided by Eurostat data from 2003

General demography in Great Britain

	Male	Female	Persons	Percent
Younger than 5	1.726.757	1.645.940	3.372.697	5,78%
5 to 9	1.860.453	1.772.678	3.633.131	6,22%
10 to 14	1.989.006	1.905.880	3.894.886	6,67%
15 to 19	1.926.078	1.840.524	3.766.602	6,45%
20 to 24	1.773.985	1.814.678	3.588.663	6,15%
25 to 34	3.815.619	4.018.989	7.834.608	13,42%
35 to 44	4.400.780	4.555.681	8.956.461	15,34%
45 to 54	3.741.503	3.829.919	7.571.422	12,97%
55 to 64	3.305.935	3.419.498	6.725.433	11,52%
65 to 74	2.327.279	2.617.428	4.944.707	8,47%
75 to 84	1.315.922	1.958.712	3.274.634	5,61%
85 and above	277.160	555.196	832.356	1,43%
In total	28.460.474	29.935.120	58.395.594	---

Source: Own graphic data provided by Eurostat
Data from 2003

Demography of the group of all foreigners in Great Britain

	Male	Female	Persons	Percent
Younger than 5	---	---	113.536	4,11%
5 to 9	---	---	111.225	4,03%
10 to 14	---	---	104.035	3,77%
15 to 19	---	---	118.986	4,31%
20 to 24	---	---	261.404	9,47%
25 to 34	---	---	795.533	28,82%
35 to 44	---	---	491.982	17,83%
45 to 54	---	---	296.294	10,74%
55 to 64	---	---	201.173	7,29%
65 to 74	---	---	150.279	5,44%
75 to 84	---	---	85.136	3,08%
85 and above	---	---	18.446	0,67%
In total	---	---	2.760.031	---

Source: Own graphic data provided by Eurostat
Data from 2003

Demography of EU-15 citizens in Great Britain (except British)

	Male	Female	Persons	Percent
Younger than 5	---	---	35.835	3,92%
5 to 9	---	---	27.502	3,01%
10 to 14	---	---	22.289	2,44%
15 to 19	---	---	19.943	2,18%
20 to 24	---	---	51.213	5,60%
25 to 34	---	---	204.949	22,42%
35 to 44	---	---	145.077	15,87%
45 to 54	---	---	130.789	14,31%
55 to 64	---	---	117.193	12,82%
65 to 74	---	---	96.999	10,61%
75 to 84	---	---	51.330	5,61%
85 and above	---	---	10.913	1,19%
In total	---	---	914.032	---

Source: Own graphic data provided by Eurostat
Data from 2003

Demography of German citizens in Great Britain

	Male	Female	Persons	Percent
Younger than 5	2.599	1.621	4.220	5,28%
5 to 9	1.182	2.491	3.673	4,60%
10 to 14	2.164	1.597	3.761	4,70%
15 to 19	1.222	2.054	3.276	4,10%
20 to 24	2.757	3.585	6.341	7,93%
25 to 34	8.699	11.238	19.937	24,94%
35 to 44	5.776	8.478	14.254	17,83%
45 to 54	2.363	6.103	8.466	10,59%
55 to 64	1.395	3.400	4.794	5,70%
65 to 74	1.320	4.780	6.100	7,63%
75 to 84	1.250	3.135	4.384	5,48%
85 and above	172	576	747	0,93%
In total	30.895	49.055	79.950	---

Source: Own graphic data provided by Eurostat
Data from 2003

8.3 Annex C: Contribution of British citizens into the funding of the German health care system

Table 1: Membership in the GKV System

General population in Germany			British citizens in Germany	
	total population	GKV/SPV insured	total	GKV insured
under 15	11.924.600	**10.178.836**	5.732	**4.893**
15 65 working	39.936.992	**34 091 915**	61.065	**52 125**
15 65 not working	15.269.608	**13 034 305**	20.658	**17 634**
over 65	15.219.600	**12.991.447**	9.002	**7.684**
total	82.353.000	**70 296 503**	96.457	**82 336**

Source: Bundesministerium für Gesundheit (2006): p. 158; own calculations

Table 2: Origin of GKV contributions

for GKV insured citizen	under 15	15-65 working	15-65 not working	over 65	Total contributions
gesetzliche Krankenversicherung		107.383.383.100		32.736.863.900	**140 120 247 000**
gesetzliche Pflegeversicherung		14.040.000.000		3.510.000.000	**17 550 000 000**
ges. Rentenvers./Unfallvers./ Arbeitgeber		15.200.310.000			**15.200.310.000**
state budget:					
Tax pane 1		3.068.280.688			**3.068.280.688**
Tax pane 2		2.046.635.617	762.563.247	779.990.107	**3 609 388 971**
Tax pane 3	827.008.391	2.769.894.297	1.059.009.067	1.055.526.947	**5 711 438 702**
total tax contributions	827.008.391	7.885.010.602	1.841.572.314	1.835.517.054	**12.389.108.836**
total	827.008.391	144.508.703.702	1.841.572.314	38.082.380.954	**185 259 665 836**

Source: Staustisches Bundesamt (2006): p.11; Bundesministerium der Finanzen (2004): p.53; Bundesministerium für Gesundheit (2006): p.128; Bundesministerium für Gesundheit (2006)A: p.40-41; own calculations

Table 3: composition of tax panels

tax pane 1:	Einkommenssteuer, Lohnsteuer, Solidaritätszuschlag equals 66,4 bn € or 24,78 per cent of total tax revenue
tax pane 2:	Mineralössteuer, Tabaksteuer, Versicherungssteuer, Stromsteuer, Branntweinsteuer, Kaffeesteuer, Schaumweinsteuer equals 78,11 bn € or 29,15 per cent of total tax revenue
tax pane 3:	Umsatzsteuer, Körperschaftssteuer, Nicht veranlagte Steuern vom Ertrag, Zinsabschlag, Gewerbesteuerumlage, Ablieferungen Buncesbank, Dahrlensrückflüsse, sonstige Einnahmen equals 123,6 bn € or 46,12 per cent of total tax revenue

Source: Bundesministerium der Finanzen (2004): p. 53

Table 4: contribution per person

per person	under 15	15-64 working	15 65 not working	over 65
gesetz iche Krankenversicherung		3.149,82		2.519,86
gesetz iche Pflegeversicherung		411,83		270,18
ges. Rentenvers./Unfallvers./ Arbeitgeber		445,86		
state budget:				
Tax panel 1		90		
Tax panel 2		60,04	60,04	60,04
Tax panel 3	81,25	81,25	81,25	81,25
total	81,25	4.236,80	141,29	2.931,35

Source: Statistisches Bundesamt (2006): p.11; Bundesministerium der Finanzen (2004): p.53; own calculations

Table 5: Contribution of British citizens into the financing of the German health care system

Funding of German heal th care system	under 15	15-65 working	15 65 not working	over 65
gesetz iche Krankenversicherung		164.164.366		19.362.756
gesetz iche Pf egeversicherung		21.466.639		2.076.063
ges. Rentenvers./Unfa lvers./ Arbeitgeber		23.252.491		
state budget:				
Tax pane 1		4.691.250		
Tax pane 2		3.129.585	1.058.745	461.347
Tax pane 3	397.556	4.235.156	1.432.762	624.325
tota	**397 556**	**220 959 489**	**2 491 507**	**22.524.493**

contribution of Britisch citizens into the German health care system is 246.373.045 € in total or 2.992,38 € per person

f British citizens in Germany would have the same demographic composition ike the German population, they would have contributed 216.964.670 € in tota or 2.635,16 € per person

Source: Statistisches Bundesamt (2006): p.11; Bundesministerium der Finanzen (2004): p.53; own calculations

8.4 Annex D: Costs of British Citizens in the German health care system

Table 6: Costs of health care services of British Citizens in Germany

	Population of Germany		British Citizens in Germany				
Age groups	General population	GKV-insured	All British Citizens	GKV-insured	Share of cost created by this group in per cent	cost per person in GKV in €	costs per group in GKV in €
male							
under 15	6.117.110	**5 221 564**	2.954	**2 521**	3,29	1167,28	**2.942.720 €**
15-30	7.469.250	**6 392 822**	7.678	**6 552**	2,93	849,09	**5 563 265 €**
30-45	9.757.650	**8.329.128**	19.292	**16.462**	5,65	1.256,69	**20 687 708 €**
45-65	10.716.600	**9 147 687**	23.158	**19 761**	13,16	2.665,17	**52.666.491 €**
65-85	5.927.600	**5 059 969**	5.035	**4 297**	14,85	5.437,00	**23 362 797 €**
over 85	305.700	**260.945**	300	**256**	1,79	12.708,23	**3.253.306 €**
female							
under 15	5.607.500	**4.957.281**	2.778	**2.370**	2,67	997,81	**2 364 814 €**
15-30	7.205.600	**6 150 869**	6.847	**5 844**	4,49	1.352,36	**7.903.163 €**
30-45	9.314.100	**7 950 514**	11.660	**9 949**	7,83	1.824,51	**18 152 099 €**
45-65	10.725.400	**9.155.199**	13.087	**11.167**	14,58	2.950,33	**32.946.336 €**
65-85	8.026.300	**6 852 955**	3.266	**2 804**	21,43	5.793,29	**16 244 381 €**
over 85	957.600	**817.578**	380	**324**	7,34	16.632,12	**5 388 809 €**
total	82.353.010	**70 296 511**	96.455	**82 307**	100,01		**191 475 889 €**

Source: Statistisches Bundesamt (2006): p.28; own calculations

8.5 Annex E: Contribution of German citizens to the funding of the British Health Care System

Table 7: Origins of funding of NHS

	Tax revenue in bn £	**Tax revenue in bn €**	share of tota state income in per cent	share of tax going into the NHS in bn £	**share of tax going nto the NHS n bn €**
ncome Tax	113.9	**164,6**	25,072	15,895	**22,971**
Nationa insurance Tax	72.5	**104,7**	15,959	10,118	**14,611**
VAT	69.1	**98,86**	15,210	9,643	**13,796**
new borrowings	35.4	**51,16**	7,792	4,940	**7,140**
Corporation Tax	28.1	**40,6**	6,185	3,922	**5,666**
Fuel cuties	22.8	**32,95**	5,019	3,182	**4,598**
Council Tax	18.8	**27,17**	4,138	2,624	**3,792**
business rates	18.3	**26,44**	4,028	2,554	**3,690**
tobacco, alcohol, gamling	17	**24,5**	3,742	2,372	**3,419**
Others	58.4	**84,4**	12,854	8,150	**11,778**
Tota	**454,3**	**655,38**	**99,999**	**63,400**	**91462**

NHS funds without corporation tax is 85.796.000.000
Exchange rate between € anc pound in year y average of fisca year 2003/04 was 1:1,44522
13,96 per cent of state income goes into the NHS
Source: Department of Finance (2005): p.250; own calculations

Table 8: matrix of contribution per tax and per group

	uncer 15	15-65 working, rrale	15-65 working, female	15-65 not working, rrale	15-65 not working, fema e	over 65	students
ncome Tax		x	x				
National insurance Tax		x	x				
VAT	x	x	x	x	x	x	X
new borrowings	x	x	x	x	x	x	X
Corporation Tax							
Fuel cuties		x	x	x	x	x	
Council Tax		x	x	x	x	x	
business rates		x	x	x	x	x	
tobacco, alcoho , gamling		x	x	x	x	x	X
Others	x	x	x	x	x	x	X

Source: own calculations

Table 9: Seize of groups of population

Br t sh population	uncer 15	15-65 working, male	15-65 working, fema e	15 65 not working, male	15-65 not working female	over 65	Stucent	Tota
total number	10.900.714	13.879.831	12.041.398	3.960.589	6.314.391	9.051.697	2.247.000	58.395.600
in per cent	18,67%	23,76%	20,62%	6,78%	10,81%	15,51%	3,85%	100%
German c t zens n Great Br taln								
total number	11654	12.093	18.492	3.451	9.697	11.231	13.337	79950
in per cent	14,58%	15,12%	23,13%	4,32%	12,13%	14,05%	16,68%	100%

Source: Eurostat

Table 10: contribution per group and per tax group for group of German citizens in British health care system

	amount for single person in €	under 15	15-65 working male	15-65 working female	15 65 not working male	15 65 not working female	over 65	stucents
ncome Tax	886		10089,53	15428,40				
National insurance Tax	564		6417,56	9813,43				
VAT	236	2753,27	2656,96	4368,75	615,30	2290,92	2653,33	3150,66
new borrowings	122	1424,93	1478,60	2261,00	421,95	1185,65	1373,21	1630,71
Corporation Tax								
Fuel cuties	102		1170,73	1790,22	334,09	938,77	1078,18	
Council Tax	84		965,51	1476,40	275,53	774,21	887,25	
business rates	82		939,53	1436,69	268,12	753,36	872,57	
tobacco, alcoho , gam ing	71		870,54	1331,18	248,43	698,03	808,48	960,09
others	201	2350,53	2439,06	3729,71	696,04	1955,62	2265,22	2689,96
total in €		6528,73	27226,06	41635,78	3059,46	8596,81	9938,24	8431,63
per person in €		559,00	2348,00	2348,00	898,00	898,00	898,00	630,00

Source: Eurostat, Department of Finance (2005): p.250; own calculations

Table 11: contribution of German population into the British health care system

Groups	amount paid per person in €	number of German citizens	**amount paid per groups in €**
uncer 15	559	11.654	**6 514 586**
15-65 working, ma e	2348	12.093	**28.394.364**
15-65 working, female	2348	18.492	**43.419.216**
15-65 not working, male	898	3.451	**3 098 998**
15-65 not working, female	898	9.697	**8.707.906**
over 65	898	11.231	**10 085 438**
students	630	13.337	**8 402 310**
		total	**108.662.818**

n tota 108.662.818 € were contributed by group of German citizens

1.359,05 € were contributed by each German citizen

Source: Eurostat, Department of Finance (2005): p.250; own calculations

8.6 Annex F: Cost of German Citizens in the British NHS

Table 12: Costs of health care services used by German Citizens in Great Britain

Age groups	Persons in the group	costs per group in HCHS	share of total costs	cost per person in HCS	costs per group in NHS	cost per person in NHS	German popu ation	**costs of German populat on**
		in million €	in per cent	in €	in million €	in €	in €	**In €**
0-4 + birth	3.372.697	5.712,95	10,36	1.693,88	8.888,46	2.635,41	4.220	**11.121.430,20**
5-15	7.528.017	2.111,47	3,83	280,46	3.285,97	436,5	7.434	**3 244 941,00**
16-44	24.146.334	13.361,06	24,23	553,34	20.768,37	860,93	43.808	**37.715.621,44**
45-64	14.296.855	10.146,89	18,4	709,73	15.766,46	1.104,19	13.260	**14 641 559,40**
65-74	4.944.707	6.512,34	15,44	1.721,51	13.246,90	2.679,01	6.100	**16 341 961,00**
75-84	3.274.634	9.774,02	17,73	2.984,77	15.211,63	4.645,29	4.384	**20.364.951,36**
above 85	832.356	5.517,85	10,01	6.629,19	6.566,18	10.317,92	747	**7 707 486,24**
total	58.395.600	55.136,56	100		85.795,97		79.950	**111.137.950,64**

HCHS - Hospita anc Community Health Services
Source: Department of Health; own calculations