Study Paper No. 16

Determination of Net Transfers for Immigrants in Germany

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The Rockwool Foundation Research Unit
Copenhagen 2007

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Published by:
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ISBN 87-90199-50-2
ISSN 0908-3979
September 2007
Print run: 300
Printed by Schultz Grafisk

Distributed by:
Schultz Boghandel
Telephone +45 43 22 73 00

Price: 125.00 DKK, including 25% VAT

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Preface

Since 1997, the Rockwool Foundation has prioritised research into the integration and conditions of life of immigrants. From the outset, Professor Eskil Wadensjö of the University of Stockholm has played a leading role in this work; indeed, he was involved in the very first of the publications that resulted from the prioritisation of this research area, *Immigration to Denmark. International and national perspectives* (Aarhus University Press, 1999), which featured the Swedish economist's analyses of data from the Danish Law Model concerning public income transfers to immigrants in Denmark.

Since then, Eskil Wadensjö has refined and updated these analyses for the Rockwool Foundation in a whole series of books, the latest being *Migrants, Work, and the Welfare State* (University Press of Southern Denmark, 2004), in which he and his PhD student Christer Gerdes broadened the field of analysis to include public income transfers to immigrants in Germany.

In this new working paper, Christer Gerdes has gone further with the work on the German data, providing documentation for the calculations for Germany and expanding the range of topics covered by the analyses. The working paper will form part of Christer Gerdes' PhD thesis, for which Eskil Wadensjö is the supervisor.

I would like to take this opportunity to thank the two Swedish researchers for their sustained work for the Rockwool Foundation Research Unit on this subject of great importance for the northern European welfare state.

At the Research Unit itself, Mai-britt Sejberg has contributed to the production of this volume with her work on proof-reading and the layout, while Bent Jensen has been responsible for liaison with Schultz Forlag, who now take over the publication of the working papers series.

As always with the Research Unit's projects, this research has been carried out in complete academic independence and free from the influence of any party, including the Rockwool Foundation itself. However, it would have been difficult to carry out the data collection in Germany and the subsequent analyses of the data without the great support and interest exhibited by the Rockwool Foundation, who made possible the generous provision of resources for this work.

I would therefore like to extend my warmest thanks to the staff of the Foundation, including the Director, Elin Schmidt, and the Board, chaired by Tom Kähler.

Copenhagen, September 2007 *Torben Tranæs*

Introduction

What are net transfers? There clearly is no standard way of defining net transfers. The definition we have in mind here is that of the difference between the estimated amounts of received transfer payments and public consumption on the one hand and paid taxes and contributions on the other. Estimating such accounts for citizens along different categorizations, for example with respect to origin, can facilitate to determine the occurrence of redistribution between immigrants and the native population at a given period of time. To achieve such estimations, in autumn 2002 we began to work on a project that aimed to calculate the contributions and costs of non-Western immigrants for the public sector in Germany.[1] The starting point was that such personal accountings have been used in some analyses aiming to study the situation for people with immigrant background in comparison with native Danes. One main result of these studies is that a non-Western immigrant on average burdens the public sector more than what is the case for western immigrants and the native population in Denmark. Stated differently, they receive more income transfers and individualized public consumption than what they pay in taxes and contributions. It was found that the outcome is largely determined by a number of underlying factors, especially the employment situation and the family composition, i.e. the number of children in the household.

In order to broaden such analysis the idea came up to accomplish a cross-country analysis, i.e. a comparison of the situation for non-Western immigrants in Denmark and Germany. The project entails both a survey and the analysis of the collected data, involving a number of researchers from both Denmark and Germany.[2] First results of this undertaking have been published in a book with the title *Migrants, Work, and the Welfare State* (2004).

The survey was conducted by *Infratest Sozialforschung* during the period from April to August 2002. The interview data include 5 669 persons whose countries of origin are Iran, Lebanon, Poland, Turkey and former Yugoslavia.[3] By the design of the sample survey all these five groups are represented with approximately an equal number of persons, i.e. about 1 100 persons in each group. All these persons had their dwellings in one of the 100 largest cities in Germany, of them 2.26 percent in the area of the former Eastern Germany. The questions

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[1] More exactly, my main task was to assist Prof. Eskil Wadensjö in this project. I want to take the opportunity to express my sincere gratitude to him and all others that contributed to the realization of this book. I also want to thank the Rockwool Foundation Research Unit for financial support. Any errors and misjudgements are, of course, my own.

[2] The survey has the operational term *Rockwool Foundation Migration Survey-Germany (RFMS-G)*.

[3] For a more detailed description of the survey design and the data collecting process, see Bauer and Nielsen (2004).

asked in the survey correspond to a previous survey accomplished in Denmark. However, in the German case the study had to be adjusted to some extent. In particular, questions were added concerning information on household income. In the Danish case register data is available, but for Germany such information either does not exist or is access prohibited by legislation. Because questions like this may be perceived as intrusive this could explain the rather large number of non-response. Those persons that chose to attend (about 43.5 percent did so) have in a number of cases not answered questions regarding their income and thus reduced the number of useable observations even further. We will return to this issue in connection with the description of the calculations regarding income taxes in subsequent sections. The impact of non-response is also discussed in a subsequent sensitive analysis.

To calculate the transfers and benefits on the one hand and tax payments and social security contributions on the other, information on a number of income measures in the survey is used. In addition aggregate data provided by sources within the public administration have been used for other kinds of (non-cash) benefits and public consumptions. The way these values are distributed on the respondents depends on the classification in the source data. In most cases this is done with respect to gender and age. The purpose has not been to state the actual net transfer for each person interviewed. If this had been done, we would have left out a number of items that constitutes the German welfare state; for example, these are costs connected to institutional care, as all interviewed persons were currently living outside such institutions. Our approach of achieving (artificial) net cost accounts on a person-by-person basis by distributing such costs across the individuals may be seen as a way of stating the likelihood of using public health- and old age care depending on demographic factors.

Other types of calculations of immigrants' net contributions in Germany study the total effects for the public budget account, both for the present and for the future. The focus there is on the long-run viability of the present obligations of the public sector.[4] The approach in these studies has been to distribute all taxes, income transfers, and other public expenditure across individuals. Stated differently, this implies that the entire national budget [including Federal government (*Bund*); State governments (*Länder*); Local authorities (*Gemeinden*), and also national insurance] for one year is distributed according to age, gender and immigrant status. This means for example that also taxes that cannot be related to specific individuals, such as company taxes, are distributed on a per capita base.[5]

The intention of this analysis, however, is to focus on the marginal impact of one non-Western immigrant on the public budget account, given his/her personal

[4] This type of accounting is called "Generational Accounting" in Anglo-Saxon literature.
[5] However, in the generational accounting literature there is no standardized definition of how net accounts should be accomplished, i.e. what items that should be included. This matter is extensively discussed in section 2.2 in Bonin (2001).

characteristics.[6] Accordingly these are micro founded estimations, as they build on individual characteristics and answers given by the persons interviewed. This holds in particular for labor incomes, taxes paid and income transfers received.[7] The estimation approach makes it feasible to investigate to what extent factors as year of arrival, education and demographic variables influence the individual net transfer to the public sector. With respect to the distribution of aggregate data, we demarcate and distribute revenues and costs which are intrinsically related to individuals. In some cases such a distinction is difficult to make; for example, investments in infrastructure such as road investments are related both to individuals and to firms. See section 1.3 for a more detailed discussion on this issue.

In determining the net transfer profiles we have tried to follow the principles of the Danish estimation as closely as possible, i.e. those provided in the so-called Danish Law Model. This calculation approach by the Ministry of Finance in Denmark is based on register data for a 3.33 percent sample of the Danish population. Despite the mentioned conceptual differences, we also relate our calculations to studies made within the traditions of generation accounting. Those studies provide information about the availability of aggregated data for Germany and methods of handling them. Studies by Holger Bonin and Stephan Boll have been of particular value for our calculations.[8]

When distributing aggregate data it has in most cases not been possible to make a distinction between natives and immigrants. This is particularly the case for public consumption, for example expenditure for public investments, public administration etc. This implies also that costs that are not possible (or feasible) to distribute in a more adequate way are distributed by an equal amount for each individual.

It could be argued that it is unsatisfactory that just a small part of expenditures for the public sector were distributed by means of taking immigrant status into account. The reason is that the statistical sources only allow us to do this to a very limited extent. Moreover, it is rather unsual to make a distinction between

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[6] As the study is looking at a given period in time this means that one does not focus on sustainability over time, as is the aim in a generational accounting analysis.

[7] Furthermore, the micro data estimation approach applied here facilitates taking into account the progressive income tax system and also the joint taxation of married people. In some generational accounting studies, the distribution across individuals of taxes on the labor income has been based on information from the individuals included in the German Socio-economic Panel (GSOEP). This information has then been applied to all the population (see Boll 1994). Such information on income taxes on the individual level is not available in our interview material but has been estimated with the use of information regarding the individual's income (labor income and other income) and the income of the spouses; see section 1.4 on estimations of income taxes.

[8] See especially Bonin (2001) and Boll (1994).

Western and non-Western immigrants in the official statistics, unlike more refined classifications in Danish data sources.

In accordance with the Danish Law Model, the general approach in the distribution of expenditures that add up to public consumption, is that only such costs are taken into account that in some way are caused by a marginal increase of the population. Stated differently, ideally only marginal costs in the public budget should debit the individuals' net transfer accounts.[9] The procedure in determining and distributing these amounts is described in detail in Chapter 1. This is followed by a sensitivity analysis in Chapter 2, which treats some more pertinent questions that arises in connection with estimating expenditures for public consumption and determination of public transfers and tax contributions. Chapter 3 concludes by giving a general motivation for estimating and using net transfers. In the Appendix the way of calculating the interviewed person's payments of taxes and social security contributions and also the demarcation of posts that are included as public consumption are illustrated more in detail.

Besides of being studied in Chapter 10 in *Migrants, Work, and the Welfare State* (2004), the net transfer estimations have been used in a study aiming to examine more closely what factors determine differences in successful integration of the immigrants from the five countries of origin. Especially the importance of initial formal immigration status has been under focus there.[10]

[9] According to Bonin (2002) immigrants enhance the costs for the public sector at a marginal rate, whose actual value is difficult to determine. He proposes that a distribution by an average amount is an acceptable approximation. However, costs for schools and universities should be distributed based on actual participation. In line with that approach we distribute average amounts relating to figures from Statistisches Bundesamt, and answers from the interviewed persons (i.e. if the individual attends an institution of education or not), see section "1.2.11 Expenditures for Schools and Universities".

[10] A preliminary version of that study was presented on the ESPAnet conference in September 2005, titled "A comparative study of net transfers of different immigrant groups: Evidence from Germany". A more recent version is available on request from the author.

1. Calculation of Net Transfers for Immigrants in Germany

The following sections present the procedure in estimating the net transfer variable for immigrants in Germany that has been used in Chapter 10, ”Immigrants and the Public Sector in Denmark and Germany” in *Migrants, Work, and the Welfare State* [Wadensjö & Gerdes (2004)]. That variable collects the received benefits and individualized share in public consumption, on the one hand, and different tax and social security payments to the public sector, on the other, for each person interviewed in the *RFMS-G* sample. It should be stressed that such a calculation is just an approximation and therefore should be interpreted with care. However, the intention has been to be as precise and accurate as possible in the different stages of estimation. To facilitate an evaluation of our approach, the most essential steps in the determination and demarcations in the calculations are shown in the following sections. This description does not cover all parts in the smallest detail, as such documentation would have been far too extensive.[11]

In the description all information concerning the legal conditions regarding social security and the income tax system relates to year 2002, as this is the year the survey in Germany has been conducted. Since then a number of welfare reforms have been accomplished, especially those associated with the so-called ”Agenda 2010”, which involves significant changes in social-security legislation. Furthermore, the figures we used are taken from official statistics which were available at time of estimation (i.e. from autumn 2002 to summer 2003), and occasionally lagging behind by a year or more. However, we believe that the effect of such (measurement) bias is rather minor and will not have any dramatic impact on our estimations.

1.1. Methodical Procedure

In order to calculate the costs that make up public consumption and investments that should be distributed on the interviewed persons, information from *Sozialbudget 2001* and *Statistisches Jahrbuch 2002* is used.[12] The *Sozialbudget 2001* is provided by the ”Bundesministerium für Arbeit und Sozialordnung” (BMA) and contains information of all social benefits and other measures, with a detailed description of their funding. This data source accounts for various branches within social insurance, the tax funded support and care schemes and expenditures regarding pensions and benefits to public employees. It is possible to divide the costs into (i) genuine income payments, (ii) (pecuniary)

[11] Readers in need of in-depth information for some specific parts of the estimation procedure should feel free to contact the author.

[12] The figures relating to the Sozialbudget are also included in Statistisches Jahrbuch 2002 (Chapter 19.1), however, here only up to the year 2000.

compensation of other kind, and (iii) expenditure for administrative measures. Such a refined separation facilitates for distribution of net cost for public financed benefits on individuals.

Information in Chapter 20 in *Statistisches Jahrbuch 2002* is used for the distribution of costs for the supply of other services and goods within the public sector besides those connected to social security. A detailed list over distribution of net costs for the public sector is provided there, but these numbers exist only for the years 1998 and 1999. For that reason figures for the year 2002 are calculated by a proportional adjustment, based on the observed change of the costs between 1998 and 1999. On average these changes amounted to around 2 percent. A problem in this context is that the specifications as they are presented in Chapter 20 in *Statistisches Jahrbuch 2002* and the information in the *Sozialbudget 2001* are not perfectly in accordance. The figures that are used taken from *Sozialbudget 2001* also enter into the compilation in Chapter 20 in *Statistisches Jahrbuch 2002*. However, there are different demarcations and distributions regarding various expenditures. This implies that one cannot precisely distinguish and relate the information from the two sources. As an example, information applying to institutional child care in the shape of ”Kindergärten” is in *Sozialbudget 2001* accounted for as part of ”Jugendhilfe”, while the same entry in Chapter 20 (Table 20.4.2 in *Statistisches Jahrbuch 2002*) is included as part of expenditure for schools (”Schulen und vorschulische Bildung”). Another difficulty is that in *Sozialbudget 2001* even employer payments are included, i.e. expenses for sickness benefits, company pensions and other benefits for their employees. As the public authorities operate as employers they also pay corresponding contributions, raising the question if and how these amounts should be distributed on individuals. Public sector expenditures (here defined as ”Bund Länder und Gemeinden”, beside the statutory social insurance) are rather small; more exactly, their shares amount to 18.1 percent of total employer contributions, while the major part is ascribed to companies and private organizations and households (figures valid for 2001). We will return to this matter later when treating the question of distributing different payments to civil servants (i.e. see section 1.3.).

A rough estimate regarding the total expenditures in the *Sozialbudget 2001* compared with corresponding items in Table 20.4.2 (for the year 1999) give the following picture: According to the *Sozialbudget 2001* public expenditures sum to 519 946 million € (net of so-called ”Verrechnungen”, i.e. transfers to other parts within the public sector). Herein also expenditures for pensions and other benefits to public employees, so-called ”Beamte” are included.[13] The figures shown in Table 20.4.2 regarding the social security agreements (”Soziale Sicherung, soziale Kriegsfolgeaufgaben, Wiedergutmachung”) in 1999 are

[13] Beamte are civil servants within the public sector that are subject to special agreements with respect to both wages (”Beamtensold”) and social legislation.

estimated to 505 783 million €. As one adds expenditures for ”Kindergärten” of 8 553 million € according to Table 20.4.5 the sum is 514 336 million €, so that the difference amounts to 5 143 million €.

As it is not that clear how to match corresponding items in the *Sozialbudget 2001* and the figures in Table 20.4.2, the following procedure is applied to determine the amount that shall be distributed on the interviewed persons: First we separate the amounts that directly can be linked to the interviewed persons. By that the different branches within social insurance, social assistance, housing allowances, youth care (”Jugendhilfe”), parent allowances (”Erziehungsgeld”), study grants (”Ausbildungsförderung”), and net cost for education institutions (both compulsory school and college education, but also university education) are accounted for. In a second step it is stated what other items in Table 20.4.2 that in one or another way are affected by marginal demographic changes in the population. At the same time the factors that are not affected, for example public expenditures for national defence, are determined. These amounts are subsequently subtracted from the reported total public expenditures in Table 20.4.2. This implies that the remaining difference constitutes the *lump sum* that is divided with respect to the number of German citizens in 2002. In a final step this average amount is distributed on all interviewed persons.[14] In other words, this means that this amount is obtained by determining what factors that are not affected (independent) of marginal changes. To ease understanding of the procedure a figure that describes the three main steps in the calculations are shown in Figure 1.1.

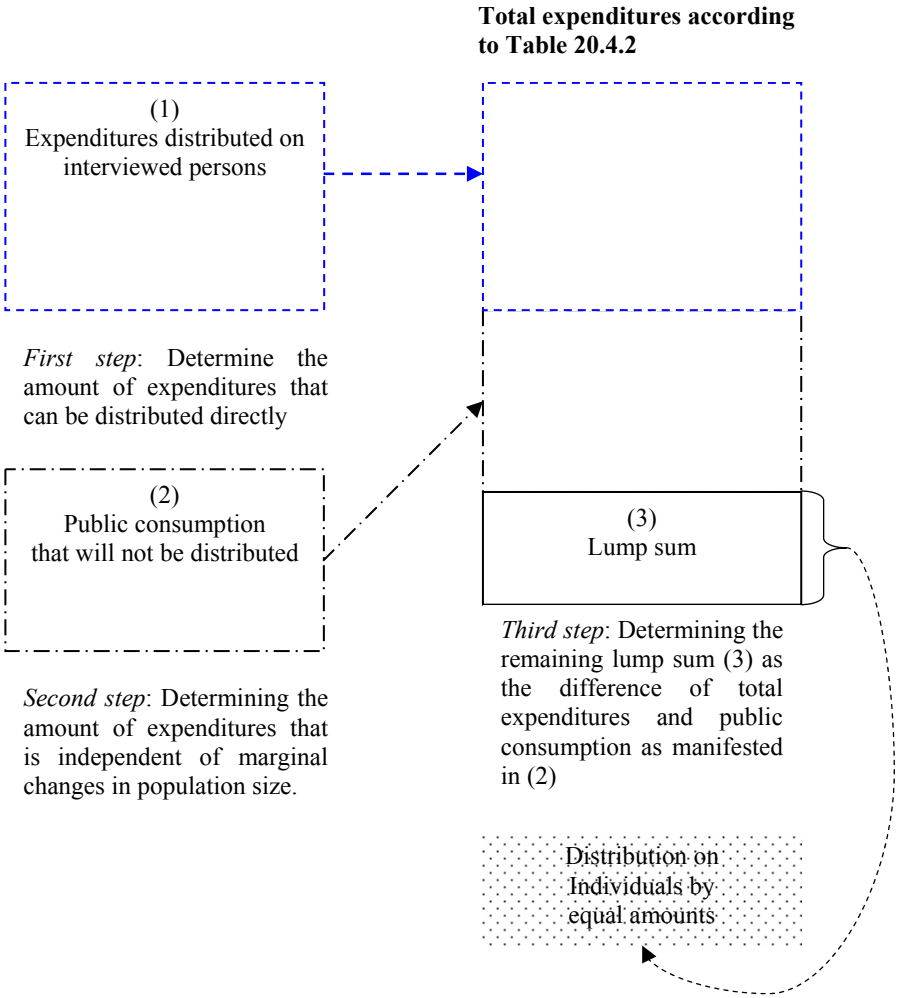
1.2. Transfers and Distinguishable Individual Public Consumption

Here follows the description regarding how the different branches within social insurance and other public consumption are treated in the evaluation of the net transfer for the interviewed persons. In that connection it is also elucidated how each of these branches influence the fixing of the outstanding costs that are left to be distributed. In practice this means that it is settled both the part that can be connected to each individual and the remaining part (the residual) that should enter into the lump sum. This residual part is subtracted from the respective item of expenditure (relating to figures in *Sozialbudget 2001*, Table II-1) which, as a consequence of the third step in the estimation procedure (see Figure 1.1), implicitly leads to that this amount end up in the lump sum that is divided by population size. We will refer to this procedure as ”residual procedure” in the descriptions of calculation for each item of expenditure that are discussed in the

[14] In calculation of the lump sum we leave out the cost for child benefit (”Kindergeld”) as these are not included in Table 20.4.2. See also the description below regarding ”Kindergeld” for a more detailed explanation.

following sections.[15] The expenditures specified in bold at the end of each of the subsequent sections constitute in sum the amount that corresponds to panel (1) in Figure 1.1.

Figure 1.1. Determination of the Lump Sum Amount



[15] One should not confuse the residual procedure as defined here with the notion of ”Residual Approach” within the generational accounting literature. There it refers to the calculation of the aggregate net tax burden imposed on future generations; see section 4.1, p. 50 in Bonin (2001).

1.2.1. Estimations Regarding Pension Insurance

Since the interviewed persons have answered questions regarding their pension income, this part of public expenditures can be regarded as ”distributed”.[16] Beside pensions per se, pension insurance (”Rentenversicherung”) also answer for payments for rehabilitation. In 2001 the expenditure for this part was 4 620 million €, according to ”Verband Deutscher Rentenversicherungsträger” (VDR). Another cost is contributions to health and nursing care insurance (”Krankenversicherung der Pensionäre”, KVdP and ”Pflegeversicherung der Pensionäre”, PVdP). The same year the pension payments amounted to 195 775 million €. The sum includes the insured own share (”Eigenanteil”) of contributions to KVdP and PVdP, which approximately is 7.65 percent of the pensions. According to information from VDR, in most cases the old age pensioners receive a net pension where their shares of social security contributions to KVdP and PVdP already have been deducted.[17]

There is no further information available regarding the distribution of the pension insurance expenditures for means of rehabilitation (i.e. no such information is provided by VDR). As an approximation, a distribution of such costs over gender and age groups is done by using the number of applications of treatment for stationary care and other measures for adults in the year 2001.[18]

Another question is how the fees to the pension insurance KVdP and PVdP should be handled. Bonin (2001, p. 119) suggests that one should include these amounts as public expenditure, i.e. debit each individual’s account with the corresponding amount. However, by that he applies a procedure different from other calculations within the generational accounting literature, where the approach instead is to balance expenditures that go from one part of the public budget to another, because the total budget (i.e. the financial burden for the entire public financing) is unaffected. In accordance with that approach the interviewed persons are not burdened with contributions to KVdP and PVdP paid by the pension insurances. This approach is in accordance with the notion

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[16] However, the question also asked for information on pensions paid by former companies (”Betriebsrente”). As these do not imply a public expenditure, these amounts should be subtracted from the interviewed person’s total pension. Unfortunately is it not possible to make such an adjustment. Hence, accounted public financed pension are somewhat overestimated.

[17] The own share of social security contributions is credited to the interviewed persons net transfer account, i.e. they contribute positively in the estimations. These are estimated depending on the interviewed persons stated pensions, with a share of 7.65 percent. I want to thank Edgar Kruse from VDR for his instructive advice.

[18] Such figures can be found in ”VDR Statistik Rehabilation” Band 142, tables 13.00 M AR and 13.00 M AV. These costs are distributed by relating these figures to population size taken from information in Statistisches Jahrbuch 2002.

that the calculation of the ultimately lump sum only should include such amounts that involve an additional cost for the public sector.

Furthermore, in the VDR accounts the refunding of received pension contributions (”Beitragserstattungen”) is recorded. This refunding was 220 million € for the year 2001. That amount, like the items in shape of ”Barerstattungen” (cash refunds) generally states a kind of remuneration, i.e. payments that the interviewed persons are assumed to have reported as received compensation. Hence, such amounts are not distributed, as one might achieve double recordings otherwise.

Regarding the calculations of the total net amount of pension insurance expenditures Table 19.1 in *Statistisches Jahrbuch 2002* or Table II-1 ”Leistungen und Finanzierung nach Arten und Institutionen” in ”Materialband zum *Sozialbudget 2001*”, is used. It contains figures for 2001, in contrast to Table 19.1 that only includes figures for the years 1999 and 2000. However, both sources origin from BMA and have identical subdivision of the recorded expenditures. The item ”Allgemeine Dienste und Leistungen” (loosely translated ”common services and allowances”) constitutes that part that shall be distributed equally on the interviewed persons. Beside these figures one also should add those expenditures that cannot be distributed on individuals due to lack of applicable division entities.

The total expenditures for pension insurance are recorded differently in the accounts of VDR and BMA. The former source states a total amount of 220 281 million €, while the BMA states the value of 225 699 million € for 2001. As BMA’s statistics regarding total costs are used in most other calculation concerning social insurance, these figures are used here. Total pension payments amounted to 190 128 million €. These expenditures are generally made up by pensions, but also contain child rearing allowances (”Kindererziehungs-leistungen”) amounting to 1 041 million € according to VDR. As these benefits essentially resemble pension payments, it is assumed that the interviewed persons in case they have received such benefits have included them in the amount of received pensions. According to Table II-1 the total expenditures for the year 2001 regarding ”Rentenversicherung der Arbeiter und Angestellten” were (225 699 – 14 561) = 211 138 million €, where 14 561 are ”Verrechnungen” (that in this particular case mainly is made up by pensions insurances contributions to KVdP and PVdP). In the so calculated net sum also the pensioners’ own share of social security contributions to KVdP and PVdP are included. This sum can also be found in the column with designation ”Barerstattungen”, with an amount of 14 095 million €. A rough estimate applying a share of 7.65 percent on the total income allowances (”Einkommensleistungen”) (190 128 – 1 041) gives the value 14 465, i.e. an approximately similar amount.)

Accordingly the expenditures that remain to be distributed are given by: 225 699 (”Insgesamt”) – 190 128 (”Einkommensleistungen”) – 14 561 (”Verrechnungen”) – 14 095 (”Barerstattungen”) – 4 620 (”Rehabilationsleistungen”). That results in an amount of 2 295 million €. As there is no information for the year 2002, such values are approximated by applying the previous year change calculated from figures in *Sozialbudget 2001*. This change was about 3.74 percent (”Insgesamt”). The calculation results in 2 295*1.037 = 2 380 million € to be included in the lump sum.

In line with the residual procedure the amount that shall be included in the lump sum is subtracted from the gross expenditure (net of ”Verrechnungen”) in Table II-1, i.e. (225 699– 14 561)*1.037 – 2 380 = **216 570 million €** are booked as distributed.

1.2.2. Estimations Regarding Health Insurance

The data used concerning distribution of expenditure for health insurance measures are based on information from ”Bundesversicherungsamt” (BVA). The statistics are compilations of the reports by the different statutory health insurance offices (”Gesetzliche Krankenversicherungskassen”) which in connection with the so-called ”Risikostrukturausgleich” are obligated to announce their annual reports to the BVA. That means that the costs for private health insurance are not included here.

The data from BVA is split up in expenditures for medical and dental surgeon treatment, expenditures for pharmaceutical preparation, expenditures for hospitals and other expenditures. Furthermore there is information regarding paid sickness benefits (”Krankengeld”). All these items are subdivided with respect to age, gender, but also residence in Western or Eastern Germany.[19]

[19] The costs are calculated with respect to so-called days of insurance (”Versicherungstage”), i.e. the total number of days payments have been registered by the respective statutory health insurance offices, according to age, gender and Western and Eastern Germany. The tables supplied by BVA have designations ”SA 40 JA 2001-Versichertentage”, ”SA 41 JA 2001-Leistungsausgaben” and ”SA 42 JA 2001-Krankengeld”. Still, there is some problem in dividing the costs in BVA’s material. For those people having reduced work capacity (”Erwerbsminderungsrentner”, indicated with designation VG 12) days of insurance for persons that are younger than 36 are put together in one group, indicated as being 35 of age. To elude this clustering, VDR statistics regarding distribution of number of persons in the different age groups that are registered as pensioners because of reduced work capacity has been used (this information can be found in ”Tabelle: 909.00 G RV Verteilung nach Rentenarten sowie nach Alter, Rentenbestand am 31.12.2001”). This means that days of insurance levied on those who are 36 of age in the original material is distributed on those who are younger with the help to these figures. I want to thank BVA for providing the data and Meik Brömmelhaus (from BVA) in assisting me in interpreting the material.

Since the interview material lack information regarding payments of sickness benefits it seems reasonable to include and distribute according average amounts (with respect to age, gender and region) on the interviewed persons. As the amount of sickness benefits is related to wages, such a procedure implies that the so calculated average amounts probably are rather on the high side for immigrants as they in general have lower incomes from work than native born Germans. This does not necessarily have to be problematic as the total sickness benefit payments are rather small, especially because they are paid first after six weeks of employers wage payments (so-called ”Lohnfortzahlung im Krankheitsfall”) or as payments from unemployment benefit offices. A complication that arises in this context is that some of the interviewed persons already might have stated some kind of received sickness benefit in case that they have ”misunderstood” the question regarding received public allowances and for that reason included sickness benefits.[20] Such apprehension is understandable, for example did the question regarding received public allowances name maternity benefits (”Mutterschaftsgeld”) as an example for such a ”public” allowance. As maternity benefits are paid by health insurance offices it seems likely that some of the interviewed persons could have included sickness benefits as a ”public” payment as well. However, as the average amount for ”Krankengeld” is rather small, this may not be that bothersome.

As indicated above is it possible that distributing average amounts paid out by health insurance offices on the interviewed persons, ”Mutterschaftsgeld” could be registered twice. As such payments are incorporated in ”Sonstige Leistungsausgaben” in BVA’s data, such an allowance is also assigned to those who already included ”Mutterschaftsgeld” as a share in the amount of received ”public allowances” in the interview data. Ideally one would like to control for ”Mutterschaftsgeld” directly. However, the problem is that ”Mutterschaftsgeld” is not listed explicitly, neither in the data from BVA nor in the interview data. (By this it should be noted that the total expenditure for ”Mutterschaftsgeld” is approximately 2.7/130 of the total sum of expenditures for health insurance offices, which is about 2 percent. However, as women of fertile age constitute a limited part of the population the average cost is rather large in their case.) As a means of responding to such shortcoming the following procedure is applied: The starting point is to use the number of children per thousand women in the age of 15 – 44 according to figures in *Statistisches Jahrbuch 2002*. These numbers constitute the basis for estimating the share of the amounts as to ”Mutterschaftsgeld” for the year 2001, i.e. 2 700 million €. The average numbers calculated in that way are subsequently subtracted from the mean amounts accounted for women in the respective age groups concerned.

[20] It might also be the case that the interviewed persons did include such amounts in the question concerning received unemployment compensation.

As the figures from BVA relate to the year 2001 an adjustment is applied to assess the expenditures for 2002. These numbers are approximated with the help of the GKV Statistik BMG KV 45 (dated autumn 2002), where both total expenditures and the percentage rate of change compared to the preceding year are shown. The average changes of costs for both Western and Eastern Germany are used to calculate the changes in the total amounts for health insurance offices and sickness benefits respectively. Administrative costs and other expenditure not directly applicable to individuals are allocated according to the previous discussion. Once more referring to Tables II-1 ”Leistungen und Finanzierung nach Arten und Institutionen” in ”Materialband zum *Sozialbudget 2001*”, the amount of individual payments is in all 123 644 million €.

According to the same table the total expenditures for 2001 were equal to 137 860 – 788 (”Verrechnungen”) = 137 072 million €. That means that the total amount regarding health insurance that is to be included in the lump sum is 137 072 – [123 644 + 6 329 (”Krankengeld”)] = 7 099 million €, in year 2001. An adjustment to the year 2002 is achieved by the following calculation: According to ”Bundesministerium für Gesundheit” (BMG) the rise in cost for the different fields within health insurance were the following:[21]

> Sickness benefits (”Krankengeld”): minus (!) 2.1 percent
> Total expenditures (”Ausgaben insgesamt”): plus 3.1 percent
> Total amount of allowances (i.e. ”Leistungsausgaben insgesamt” without ”Krankengeld”): plus 3.2 percent

In proportion to theses numbers the evaluation looks like the following:
137 072*1.031 – (123 644*1.032 + 6 329*0.98) = 7 518.
This means that the amount that remains to be included in the lump sum is 7 518 million €.

In line with the residual procedure the amount that shall be included in the lump sum is subtracted from the gross expenditure (net of ”Verrechnungen”) in Table II-1, i.e. (137 860 – 788)*1.031 – 7 518 = **133 803 million €** are booked as distributed.

1.2.3. Estimations Regarding Nursing Care Insurance

The so-called ”Pflegeversicherung” is the newest addition to the German system of social insurance. It came into effect in 1995 and is like health insurance mandatory, which means that every employed worker that has a labor income above some minimum amount pays contribution to one of the nursing care insurance offices. Additionally an equivalent amount is paid by the employer. In the case of low-wage employees it is only the employer who pays a contribution; see section 1.4.4 for a more detailed discussion on this subject. Likewise, it is

[21] www.bmgesundheit.de/inhalte-frames/inhalte_presse/presse2003/m/41/GKVPM41.pdf

possible to choose a private nursing care insurance if the labor income is above a contribution assessment ceiling (”Beitragsbemessungsgrenze”) or for self-employed independent of income.

Generally the insurance offices pay for different aid contributions, either as compensation to the individual or to the care institutions. Those expenditures are classified as cash refunding (”Beitragserstattungen”) and no transfers such as pensions are paid. Nursing care insurances cover part of the costs that arise in connection with nursing measures, for example regarding the stay in a care institution. The costs that accrue regarding board and lodging has to be paid by the patient himself, or, if her own income (or the income of the next of kin) is sufficiently low, by the social security office. However, most costs related to treatment measures are paid by the nursing care insurance office.

The calculation of mean expenditures that debit the interviewed persons' net transfer accounts rest on calculations made by *Statistisches Bundesamt*.[22] To be more precise, the figures present the number of people in different age groups (i.e. five-year groups), subdivided with respect to gender (no subdivision in Western and Eastern Germany is provided here) that have used institutional care or home help for different type of disablement and where the costs at least to some extent are paid by some of the nursing care insurance offices.

These figures are then used to distribute the costs that determine expenditure for nursing care. In line with the division of the data from *Statistisches Bundesamt*, mean values are determined by dividing the number of persons who got some treatment with the actual number of people in the respective age group.[23] According to these numbers, the expenditure for nursing care measures are distributed. Such an estimation approach is quite likely less reliable than a distribution of costs for each group as provided in the data from VDR concerning health insurance expenditures. A further drawback in the data provided by *Statistisches Bundesamt* is the fact that the numbers of individuals in each group also include persons that are not member of the public insurance offices, but are joining one of the private nursing care insurance institutions. To be able to calculate more consistent mean values, the expenditures from those institutions are added to those arising in the statutory nursing care insurance.

The amounts that are distributed on the interviewed persons build on figures from ”Bundesministerium für Gesundheit und Social Ordnung” (BMGS) and from the umbrella organization for the private health insurance institutions (”Verband der Privaten Krankenversicherung e.V.”). The total amount is 16 371

[22] The figures have been provided by ”Bundesministerium für Gesundheit und Soziale Sicherung” (BMGS) as an excel-file with designation Z 1 00D.xls, and relate to the situation in December 1999.

[23] A similar procedure is applied by Bonin (2001), p. 116.

million €, of which the statutory offices answer for 15 900 million € and the private institutions for 471 million €.

As these calculations rest on data for the year 2000, values for 2002 have to be approximated. For that the percentage changes for preceding years as shown in Table II-1 in ”Materialband zum *Sozialbudget 2001*” are used. The change of the item ”Barerstattungen” between the years 2000 and 2001 was around 1 percent. No information was available for Germany for the year 2002, so here we use information for the state of Baden-Württemberg, relating to the first two quarters in 2002. These indicate a rate of increase of approximately 1.6 percent of the expenditures compared to the previous year. This number is used to approximate the increase of cost for the whole of Germany.

According to Table II-1 for 2001 the amount for common services and allowances (”Allgemeine Dienste und Leistungen”) was 814 million €. Applying an adjustment to set the 2002 value the amount changes to 834 million € (i.e. a 2.4 percent increase, that corresponds to the percentage increase of that item of expenditure between the years 2000 and 2001). This amount is included in the lump sum.

In line with the residual procedure the amount that shall be included in the lump sum is subtracted from the gross expenditure (net of ”Verrechnungen”) in Table II-1, i.e. (16 869 – 20)*1.016 – 834 = **16 285 million €** are booked as distributed.

1.2.4. Estimations Regarding Accident Insurance

The Public Accidents Insurance (”Gesetzliche Unfallversicherung”) constitutes the oldest part of the German system of social insurance. Unlike other parts of the statutory social insurance this part is totally financed by employer contributions. There are a number of accident funds and the contributions to these differ, among other things depending on what industry the company belongs to. A broader classification of these funds can be made in ”Gewerbliche Berufsgenossenschaften” (GB) that for the year 2000 included slightly more than 43 million insured workers, ”Landwirtschaftliche Berufsgenossenschaften” (LB) that covered about 4,3 million workers and finally those who were insured within the public administration with designation ”Unfallversicherungsträger der öffentlichen Hand” (UöH) with 10,5 million members, according to Table 19.3.2 in *Statistisches Jahrbuch 2002*.

The main expenditures of these funds are pension payments and expenditures for rehabilitation. As the interviewed persons were asked to state the amount for all kind of received pension payments, the main part of the expenditures regarding this item is already covered. The payments not captured so far are those for rehabilitation and health service to the extent that these not are so-called

”Barerstattungen”, i.e. cash payments that the interviewed persons are understood to have reported as received transfer payments.

The figures that are used concerning measures of rehabilitation rely on information from GB and only relate to their members.[24] GB is the largest of the three organizations. Of the total expenditures relating to accident insurance, GB answered for 85 percent, LB for 7.1 percent and UöH for 7.9 percent. To allow for a distribution of all costs regarding rehabilitation measures and medical treatment (”Heilbehandlung”) with respect to gender and age groups, the expenditures as borne by GB are augmented by applying the relative shares that LB and UöH constitute in proportion to GB. This leads to an average increase by approximately 24 percent according to figures from *Statistisches Jahrbuch 2002*, Table 19.3.4. To be more precise, this results in an accumulated amount of about 3 088 million €. The figures for rehabilitation include both expenditures for rehabilitation and medical service. Additionally there are some regular costs, where a distribution on individuals is not motivated (e.g. such as administrative costs) or where information to make such distribution on groups of persons is lacking (for example, expenditures for dental surgeon treatment are not accounted for in the data by GB). The total amount of expenditures for the year 2001 that relate to assistance to the insured was given by 5 554 + 3 088 = 8 642 million €. The amount 5 554 is calculated as the total sum of pension payments by GB, namely 4 612, multiplied by the factor 1.204, that in turn is settled by the sum 440/4706 + 521/4706 = 0.204; that state the percentage share that LB and UöH make up in proportion to GB:s pension payments according to Table 19.3.4 (for the year 2000). This amount (pension payments) is not distributed on the interview persons as they already have stated their pension income. The number of 5 554 is only used as a control for the total pension payments that **are not to be distributed,** as one otherwise would achieve a double recording on the interviewed persons’ net accounts. However, this amount is subtracted from the total expenditures for ”Unfallversicherung” in order to determine the remaining net amount that shall be distributed as a ”regular public expenditure” over the population. This procedure is in accordance with the procedure applied by Bonin (2001, p. 112).

The total expenditures for ”Unfallversicherung” amounted to 11 118 million € according to BMA. However, in that amount also expenditures to other branches of the public sector are included (i.e. ”Verrechnungen”). The interviewed persons’ net transfer accounts should not be debited with these amounts (as was mentioned before, argues Bonin (2001) for a different approach). For the calculation of the lump sum this means that an amount of 190 million € is deducted. The net amount to be included in the lump sum is given by (11 118 – 8 642 – 190), that is 2 286 million €.

[24] These figures have been supplied by Günter Rothe, ”Hauptverband der gewerblichen Berufsgenossenschaften” (HVBG).

Finally an adjustment to get the level of costs for the year 2002 has to be carried out. The rate of change for the total expenditures between the years 2000 and 2001 was about 0.88 percent, of which allowances, that in essence consist of pension payments (”Einkommensleistungen”), increased by around 0.44 percent, while compensation for rehabilitation and other service (”Waren und Dienstleistungen”) increased by around 1.6 percent. These alteration rates are used to approximate the amount of expenditures for 2002. Accordingly the amount for rehabilitation increases to 3 088*1.016 = 3 1378 million €. The amount for allowances are adjusted to 5 555*1.0044 = 5 579 million €. The total expenditures are estimated to be (11 118 – 190)*1.0088 = 11 024 million €. The total amount to be included in the lump sum is 11 024 - (3 137 + 5 579) = 2 307 million €.

In line with the residual procedure the amount that shall be included in the lump sum is subtracted from the gross expenditure (net of ”Verrechnungen”) in Table II-1, i.e. (11 118 – 190)*1.0088 – 2 307 = **8 730 million €** are booked as distributed.

1.2.5. Estimations Regarding Unemployment Compensation

The figures concerning unemployment compensation rely on the interviewed persons’ answers to the question if and how much unemployment benefits (”Arbeitslosengeld”) or unemployment assistance (”Arbeitslosenhilfe”) they received the month before the interview. Both payments are paid by the Federal Agency for Employment, i.e. ”Bundesanstalt für Arbeit” (BaA).[25] However, unemployment benefits are financed by contributions to the unemployment insurance, while unemployment assistance is financed by tax revenues. Compensation in the form of ”Arbeitslosengeld” corresponds to 67 percent of former net labor income, on condition that the unemployed has children, 60 percent otherwise. However, there is a compensation ceiling; in Western Germany this ceiling is 4 500 €, in Eastern Germany 3 750 €. As regards ”Arbeitslosenhilfe” the corresponding replacement shares are 57 percent and 50 percent, respectively. Duration of entitlement to unemployment benefits (”Arbeitslosengeld”) depends on both years of paid contributions to the unemployment insurance and the age of the unemployed. The duration ranges from six to, at the most, 32 month. After such a period has ended ”Arbeitslosenhilfe” will be paid instead. Such compensation is awarded one year at a time and after that reconsidered by the employment office to decide if the

[25] As was mentioned in the beginning of this section the calculations and thus the description here relate to the situation in 2002, which imply that the conditions as described here are partially out of date by now. This statement holds particularly true for the conditions regarding unemployment compensation, as the rules and regulation here have been subject to significant changes in the years 2004/2005, commonly known as the ”Hartz IV” reform.

conditions for payments still are met. This means in essence that the unemployed has to verify that she has actively been engaged in job search activities.

Expenses in the form of ”Arbeitslosengeld” and ”Arbeitslosenhilfe” enter in the *Sozialbudget 2001* under designation ”Arbeitsförderung”. This entry includes all costs regarding allowances and other expenditures regarding employment measures. In particular the latter part regards further type of allowances, such as ”Unterhaltsgeld” and ”Kurzarbeitergeld”. ”Unterhaltsgeld” are allowances that are paid to individuals that participate in employment measures. The amounts of such payments depend on earlier compensations in form of ”Arbeitslosengeld” or ”Arbeitslosenhilfe”.

In the questionnaire it was only asked for ”Arbeitslosengeld” or ”Arbeitslosenhilfe”, i.e. ”Unterhaltsgeld” was not listed explicitly. It is likely that the interviewed persons receiving ”Unterhaltsgeld” see such an allowance as a continuation of one of the two alternative payments and by that include such amount. That assumption is confirmed by studying the answers to a question concerning the respondents’ social status. In ten cases those that attended a course or training the week before the interview also answered positively to the question if they received ”Arbeitslosengeld” or ”Arbeitslosenhilfe” the previous month. As a result, expenditures for ”Unterhaltsgeld” are here treated as already distributed on the interviewed persons.

For the year 2001 the total amount regarding ”Unterhaltsgeld” was 4 202 million €. The amount for ”Arbeitslosengeld” was 24 621 million € and for ”Arbeitslosenhilfe” 12 777 million €, according to Table 19.9.2 in *Statistisches Jahrbuch 2002*. For the year 2002 there are figures from BaA for ”Arbeitslosengeld”, ”Unterhaltsgeld”, and ”Arbeitslosenhilfe”. The amounts are 27 007 million €, 3 997 million € and 14 756 million € respectively, i.e. an increase of such benefits between 2001 and 2002 by ca 10.54 percent.[26] In line with the procedure applied by Boll (1994) a correction for contributions made by the BaA to other domains of statutory social insurance is applied. Actually, these contributions are reallocation of funds between different public institutions (i.e. they enter as receipts in other parts of the statutory system of social insurance) and by that do no state any real cost that should be laid on individuals. The shares of social contributions are included in the above stated amounts for respective allowance. To get the net amount to be included in the lump sum, ”Arbeitslosengeld”, ”Arbeitslosenhilfe”, and ”Unterhaltsgeld” (and by that implicitly also social contributions) are subtracted from the total expenditures

[26] According to ”Haushalt der Bundesanstalt für Arbeit”
http://www1.arbeitsamt.de/hst/services/statistik/200212/iiia5/abrechnung/r901l.xls and ”Leistungen des Bundes nach dem Dritten Buch Sozialgesetzbuch und gleichartige Leistungen”
http://www1.arbeitsamt.de/hst/services/statistik/200212/iiia5/abrechnung/r902l.xls

(i.e. from ”Arbeitsförderung”). According to statistics from BaA the total amount of expenditures incorporated in ”Arbeitsförderung” increased by approximately 8.7 percent between 2001 and 2002. This leads to the following calculation:
65 198 (”Arbeitsförderung” for the year 2001)*1.087 – (27 007 + 3 997 + 14 756) – 338*1.087 (”Verrechnungen”) = 24 742 (million €) that has to be included in the lump sum. These expenditures include costs for different kinds of labor market measures, other not yet distributed payments like ”Kurzarbeitergeld”, subsidies to firms, establishments for workers with some kind of handicap and also administrative costs.

In line with the residual procedure the amount that shall be included in the lump sum is subtracted from the gross expenditure (net of ”Verrechnungen”) in Table II-1, i.e. (65 198 – 338)*1.087 – 24 742 **= 45 760 million €** are booked as distributed.

1.2.6. Estimations Regarding (Non-insurance Based) Social Security

As regards social security the interviewed persons answered a question on the amount the households received as social allowances. However, such in-cash payments only involve part of the total expenditures that make up (non-insurance based) social security, namely those classified as social assistance (”Sozialhilfe zum Lebensunterhalt”). These are partly income benefits, partly reimbursement for out-of-pocket expenses of household members. In addition to that ”Sozialhilfe” also bear the cost for means that are not paid by statutory social insurance, in particular those arising from health care. Such expenditures are titled ”Assistance in special circumstances” (i.e. ”Hilfe in besonderen Lebenslagen”) in the public accounts.

As the interview material lacks information that directly can be put in relation to expenditures for ”Hilfe in besonderen Lebenslagen”, statistics from *Statistisches Bundesamt* are used to distribute this item instead.[27] These figures reflect the number of persons that received any kind of remedial aid, both institutional and non-institutional, divided over age groups and gender. Thus, in determining the expenditures for each group we implicitly make the assumption that there is a direct link between the number of persons treated in each group and the respective total costs. According to *Statistisches Bundesamt* the total gross amount for ”Hilfe in besonderen Lebenslagen” was 14 273 million € in 2001.

[27] They can be found in tables A1.1.1 and A1.2.1 in ”Sozialhilfe - Hilfe in besonderen Lebenslagen”, Statistisches Bundesamt. Bonin (2001) and Boll (1994) use information from the GSOEP. The survey design in the GSOEP is alike the *RFMS-G* data used here, but it contains more questions and a larger number of respondents.

As the calculation regarding the final balance account of all public expenditures for social welfare measures relates to figures from BMA and their estimations in *Sozialbudget 2001*, the amounts as stated above (by *Statistisches Bundesamt*) are adjusted. The costs relating to ”Hilfe in besonderen Lebenslagen” are thus fixed to what in the *Sozialbudget 2001* enter as ”Sozialhilfe: Waren und Dienste”. The amount was 25 708 million DM, i.e. 13 1443 million €. Thus, the adjustment is given by 13 144/14 273= 0.9209, i.e. the calculated mean expenditures are multiplied by a factor 0.921. These figures are valid for the year 2001. The costs for the year 2002 are calculated by assigning an increase of 2 percent.

As a further step one also has to determine the share of received social assistance allocated to the interviewed persons themselves, as the amounts stated in the interview apply to the household. According to Bonin (2001) and Boll (1994) these amounts shall be distributed with an equal amount on each adult in the household. The allocation carried out here follows their approach.

Consequently all relevant items that make up ”Sozialhilfe” in *Sozialbudget 2001* are now distributed, except the amount for ”Allgemeine Dienste und Leistungen”. For the year 2001 the amount was 2 526 million DM (1 292 million €). Assuming an increase of 2 percent this results in 1 317 million € in year 2002.

In line with the residual procedure the amount that shall be included in the lump sum is subtracted from the gross expenditure in Table II-1 (for ”Sozialhilfe” no ”Verrechnungen” are noticed), i.e. 26 298*1.02 – 1 317= **25 507 million €** are booked as distributed.

1.2.7. Cost for Youth Care, i.e. ”Jugendhilfe” (Including Cost for ”Kindergärten”)

The sum that make up ”Jugendhilfe” in *Sozialbudget 2001* contains both costs for ”genuine” youth activities (such as assistance and guidance of different kinds and also institutional arrangements for young people) but also costs for ”Kindergärten” or other comparable institutions (e.g. ”Kinderkrippen”). According to *Statistisches Jahrbuch 2002* the costs for ”Kindergärten” in 1999 amounted to 8 553 million € (see Table 20.4.5). For ”Jugendhilfe” in the form of youth activities the amount was 8 823 million € (according to Table 20.4.2). Adding both numbers results in an amount of 17 376 million €. However, that amount is not perfectly in accordance with the numbers in *Sozialbudget 2001*. There, for 1999 the cost regarding ”Jugendhilfe” is estimated to be 16 631 million €.[28] The difference in Chapter 20 in *Statistisches Jahrbuch 2002* and in *Sozialbudget 2001* is caused by different demarcations regarding youth care. As the present calculations of net transfers consistently relate to figures in

[28] According to Statistisches Jahrbuch 2002, Table 19.1.

Sozialbudget 2001 regarding items that concern expenditures within social welfare, the reference amount is a cost of 16 631 million €. Nevertheless, the division of costs between ”Kindergärten” and ”Jugendhilfe” in *Statistisches Jahrbuch 2002* is utilized, as there is no such information in Sozialbudget. This means that for ”Kindergärten” a share given by 8 553/17 376 is applied while the corresponding share for ”Jugendhilfe” is 8 823/17 376. Such division, applied to the total expenditure in 2001 of 16 631 million € as stated in Sozialbudget, facilitates a more refined distribution of costs on the interviewed persons.

To distribute costs with respect to ”Jugendhilfe”, the number of children or adolescent that benefit from a certain kind of assistance is used.[29] Thus, the number of assistance measures for each age group is assumed to be linearly related to their costs. (There is no further division with respect to origin or citizenship.)

For the distribution of costs regarding ”Kindergärten” an average cost relating to number of children attending ”Kindergärten” (or ”Kinderkrippen”) according to Table 19.18 in *Statistisches Jahrbuch 2002* is applied. The estimated cost per child is subsequently imposed on the children of the interviewed person, based on answers regarding what kind of child care institutions their children attended. (The question concerning child care is only asked for the three youngest children. This could imply that the calculated amount is undervalued if there are persons in the sample who have more than three children in the public child care, but that seems rather unlikely).

The total amount that is registered as distributed is thus determined by: 17 132 million € (total cost for ”Jugendhilfe” year 2001 according to *Sozialbudget 2001*) – 1 817 (”Allgemeine Dienste und Leistungen”) = 15 316 million €. (”Verrechnungen” are stated to be zero). After an assumed increase of 2 percent this results in **15 622 million €.**

1.2.8. Child Benefits (”Kindergeld”) and Child-raising Allowances (”Erziehungsgeld”)

Both ”Kindergeld” and ”Erziehungsgeld” are tax funded and the amount of payment to those having custody of a child varies with the number of children.

”Kindergeld”, i.e. child benefits, are generally paid for each child younger than 18 years. It is given either as a lump sum benefit or as a tax allowance. The

[29] See Table 19.17.1. A corresponding distribution was used by Bonin (2001) p. 117, based on earlier publications of Statistisches Jahrbuch. In Table 19.17.1 the upper age boundary is 27 and the age groups are divided into age groups with an interval of 4 years.

benefit is paid to the parent who has custody of the child/children. After the annual declaration of income the tax authorities calculate what is most advantageous, the lump sum benefit for every child or tax deduction. If it turns out that a tax deduction means a larger surplus for the parents, the tax authorities grant tax deduction instead (which is called ”Kinderfreibetrag”). The child benefits paid are then set of against the tax debt.[30]

Child benefits amount to 154 € per month for the three first born children and 179 € for every additional child. Immigrants are entitled to child benefits if they have a valid residence permit (”Aufenthaltsberechtigung” or ”Aufenthaltserlaubnis”) or if they are from countries belonging to the EU, Iceland, Liechtenstein, Norway, and Switzerland. Also persons from the Former Yugoslavia, Morocco, Tunisia, and Turkey are entitled if they pay unemployment insurance contributions or receive unemployment or sickness benefits. Also recognized refugees (”Flüchtlinge” and ”Asylberechtigte”) are entitled to ”Kindergeld”.[31] A prerequisite is that one does not receive child benefit from other sources (e.g. any kind of ”child benefit” from the statutory accident insurance or pension insurance, or similar benefits from another country).

”Erziehungsgeld”, i.e. child-raising allowance, is paid to mothers respectively fathers that are unemployed or part-time employed. (For children born January 1, 2001 or later the time limit for gainful employment is 30 hours a week, for children born prior to that date the limit is 19 hours a week). The maximum amount that can be attained is 307 € per month for a period of two years. However, there are income ceilings: For married couples the ceiling is 51 130 € per year, and for single parents the ceiling is 38 350 € per year to be eligible for ”Erziehungsgeld” the first six month after the child’s birth date. To achieve a prolongation of payments after this period of six month, the income must not exceed 16 470 € and 13 498 € per year, respectively. If the parent who has custody of the child is not engaged in gainful employment the authorities disregard from earlier labor income in the calendar year with respect to the income ceilings stated above, while income from other sources (e.g. such as a rental fee) still is taken into account. If the parents’ incomes exceed the income ceilings that are valid for the first six months after the children’s birth, no allowances are granted. If the according income lies above this ceiling beyond the sixth month period a share of 4.2 percent of the exceeding amount is deducted from the child-raising allowance of 307 €.[32] Immigrants (including recognized refugees) are entitled to child-raising allowance if they, beside the recently stated requirements, meet the same conditions as those for child benefits mentioned above.

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[30] According to information from www.mein-recht.de/kifreibetrag.htm.
[31] According to information from www.schwanger-in-bayern.de/finan/kige2.htm.
[32] According to ”Informationsblatt zum Erziehungsgeld”, published as a pdf-file in the year 2002 by ”Niedersächsisches Ministerium für Frauen Arbeit und Soziales”.

”Kindergeld” and ”Erziehungsgeld” are non-taxable and do not involve an increase of the income that determine the graduated taxation of other income. Stated differently, for these allowances there do not exist so-called ”Progressionsvorbehalt”. (For a broader explanation regarding this issue, see the description of calculations concerning direct taxes below, especially in section 1.4.).

Unfortunately it is rather problematic to determine the amounts of child benefits and child raising allowances as the question asked in the survey included also other kind of public allowances, besides these two benefits. For example, the question explicitly refer to maternity benefits (”Mutterschaftsgeld”) and also education benefits (i.e. what used to be called ”Bafög”, which is the abbreviation for ”Bundesausbildungsförderungsgesetz”) and also any kind of scholarship. Besides, there is no specific information regarding the children’s exact age at the time of the interview (only year, not month of birth is asked for), which makes it impossible to explicitly determine the shares that these different benefits amount to respectively.[33]

Since child allowances can be transformed to a tax deduction it is not obvious how to treat the allowances the respondents received, i.e. how these should enter in the net accounts. In the generational accounting literature it is a debated issue to what extent tax deductions are public benefits or not. For ease of calculations but also due to the lacking possibility of consistently estimating the outcome of tax deductions for children, child benefits debit the interviewed persons’ net accounts as a public allowance.

According to Bonin (2001) all kind of family allowances should be distributed on the children. However, family allowances are put on the parents in the estimations of net transfers in the Danish Law Model. To be precise, it is the mother who gets these transfer payments assigned if she is married or cohabiting. In case the parents to the child/children are divorced or live-apart, the allowances are allocated to the parent who has custody for the child. Yet, in the present study it is problematical to decide to what extent the received transfers correspond to allowances that are linked to children, and to determine if the stated amount for the respective allowance is received by the respondent himself or if it is just a fraction of family allowances. Stated differently, it is not possible to determine the exact amount of family allowances received by the interviewed person, in particular it is not possible to distribute them on mothers without miscounting. For that reason the amounts that the interviewed person

[33] In the question Education allowances (Bafög) and scholarships are thus regarded as public allowances. It is questionable, however, to what extent this is appropriate; in the case of Bafög it could be the case that the interviewed persons stated a public loan rather than a grant.

stated regarding received public benefits are entirely added to the person's own net transfer account.[34]

As "Kindergeld" is considered as a true public allowance no tax deductions for children are applied in the calculation of paid income taxes. See the following section "Estimations of Direct Taxes and Social Security Contributions".[35]

As the entry in Socialbudget concerning "Kindergeld" and "Erziehungsgeld" only include cash benefits (and the administrative costs are negligible) the amounts in Table II-1 are regarded as distributed, i.e. no amounts remain to be included in the lump sum.

Assigning an increase of 2 percent (that correspond to the increase between 2000 till 2001) leads to that 7 556*1.02 = **7 707 million €** are booked as distributed.

The amount concerns only the specification that is accounted for as "Erziehungsgeld". As this is a genuine public payment it also shows up in the public expenditures as in Table 20.4.2. However, child benefits in the shape of "Kindergeld" should not be included in connection with the residual procedure. As this item corresponds to a tax deduction it does not emerge as expenditure in the public accountings in Table 20.4.2.

1.2.9. Calculations Regarding Education Allowances ("Ausbildungsförderung")

As was noted above, the interviewed persons were asked to state the amount of education allowances received as "Bafög". Such support is given as a grant and/or as an advantageous loan. However, from the survey it is not possible to determine to what extent the received amounts correspond to loans or grants.

"Ausbildungsförderung" is thus treated as an income benefit, so only administrative costs remain to be distributed on the interviewed persons. The total sum concerning "Ausbildungsförderung" in 2001 amounted to 1 300 million €, where 1 206 million € were benefits. With a 2 percent increase applied, the corresponding amounts for 2001 are 1 326 million € and 1 230 million € respectively. This means that an amount of **1 230 million €** are booked as distributed.

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[34] In a sensitivity analysis a different calculation approach is accomplished to determine the effect of an alternative treatment of public transfers, see section 2.3.1.

[35] The opportunity of claiming a tax deduction ("Kinderfreibetrag") instead of child benefit was introduced in 1996 in connection with the so-called "Familienleistungs-ausgleich".

1.2.10. Calculations Regarding Housing Allowances (”Wohngeld”)

The interviewed persons were also asked to specify if they received housing allowances. Just like social allowances the question concerns the entire household. According to both Boll and Bonin these amounts should be divided equally on the adults living in the household. The allocation carried out here follows their approach.

As housing allowances are genuine cash benefits there only remains to distribute administrative costs and some other, smaller costs. The collected expenditure regarding housing allowances in 2001 amounted to 4 462 million € in total, where 321 million € are linked to ”Allgemeine Dienste und Leistungen”. Applying an anticipated increase of 2 percent the corresponding expenditures for 2002 are 4 551 million € and 327 million € respectively.

In line with the residual procedure the amount that shall be included in the lump sum is subtracted from the gross expenditure in Table II-1 (there are no ”Verrechnungen”), i.e. 4 462*1.02 – 327 = **4 224 million €** are booked as distributed.

1.2.11. Expenditures for Schools and Universities

There are two types of costs regarding schools and universities to take into account:

1) The costs that arise with respect to own children’s education. These costs are added to their parent’s net transfer account.
2) The costs for the interviewed persons themselves if they stated to be studying, i.e. attended some kinds of general schools, vocational schools or institutions of higher education.

The costs for general schools (i.e. so-called ”Allgemeinbildende Schulen” in Germany) are distributed on children of compulsory school age.[36] Information for the year 2000 that regards average costs for different kind of schools is available from *Statistisches Bundesamt*. However, these amounts also include costs that should not be directly linked to individuals, for example costs for investments. Moreover also payments for subsidies for civil servants (i.e. ”Beamtenversorgung und Beihilfen”) are included in the aggregate statistics. According to Bonin (2001) such costs should not burden individual accounts of those actually studying but be spread equally over the population. In line with that argumentation, the main criterion for cost distribution applied here is that

[36] From the interview data it is only possible to determine the number of own children under 18 years of age. One cannot unambiguously determine their social status, i.e. if they attended a school or not.

these should if possible be linked to a particular service that individuals are in receipt of. For example, wages for civil servants working as teachers or within school administration should be included, but not payments of pensions, sickness benefits and other grants. Also investment costs should be excluded at this stage of estimations in order to state a school net cost.

The data regarding the costs for different types of school education rest on figures for 1999 that are taken from Table 16.18.1 in *Statistisches Jahrbuch 2002*, along with some updated information for the year 2000 taken from a press release dated March 19, 2003. The costs specified there, are adjusted with a factor of 0.79 intending to define amounts that at least approximately are pure wage costs (not least by excluding ”Beamtenversorgung und Beihilfen”) and other running expenses.[37] To facilitate the distribution of educational costs, numbers are estimated that state average costs over school age, resting on the number of pupils per year and net costs for the different types of schools, respectively.[38] The so calculated values result in an average net cost of 3000 € each year and school child in classes 1-4, 4000 € for those in classes 5-9 and 3000 € for those in classes 10-13. This method builds on the assumption that children with immigrant background attend different type of schools to the same extent as all pupils. There are reasons to believe that this will lead to an underestimation rather than an en overestimation of the actual costs for children with immigrant background. For example, the share of school children from non-Western countries attending so-called ”Sonderschulen”, the most expensive type of school, is somewhat larger than what is the case for all pupils.[39]

The estimations of costs of education for persons attending college or university also rest on figures by *Statistisches Bundesamt* and its calculations regarding (total) expenses. These figures are made up by staff costs and other operating

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[37] A distribution with respect to federal states (”Bundesland”) is not performed. Indeed, information exists regarding cost for schools for each state, but these fluctuate notably within states. In particular, they differ for larger cities and rural area, with higher expenditures in the former case (for example because of larger expenditures for maintenance and rents). As the interviewed person in our data were all living in one of the 100 larger cities in Germany it seems like that a division with respect to federal state is less suited. The factor 0.79 is based on own calculations from received figures from Statistisches Bundesamt in "Tabelle zur Plausibilitätsprüfung" Anlage 1, Statistisches Bundesamt VIC 4, 29 Januari 2003.

[38] These average costs are estimated according to number of pupils in the different type of schools, as presented in Chapter 2, p. 72 in ”Grund- und Strukturdaten 2000/2001”, *Bundesministerium für Bildung und Forschung*.

[39] According to specifications in ”Grund- und Strukturdatan 2000/2001” the shares in 1999 were 6.7 percent and 4.2 percent respectively. Sonderschulen have on average twice as high costs per pupil than other types of schools. This should be seen in the light of that also schools for children with different forms of functional disorder regularly count as Sonderschulen.

expenses and are here distributed with respect to the number of students to establish an average amount per student.[40] This approach is a rather crude distribution because costs vary a lot between different university programs. However, it is probably the best way to go as we lack information on the interviewed persons' chosen subject of study.[41]

The distribution of expenditures is done in the following way: Average costs are distributed on the interviewed persons and their children. For children these costs are based on the age dependent cost for general schooling, as described above. This means that children younger than ten years are imposed with a cost of 3 000 €, children between ten and up to 15 years of age with a cost of 4 000 € and children that are between 16 or 17 years old with a cost of 3 000 €. These costs were subsequently distributed on the interviewed persons, on condition that they have stated that their children were attending school.

As regards the interviewed persons' own education the procedure is the following: For those persons that stated to be studying an education cost is charged to the persons net transfer account. Such costs are divided up in expenditures for common school education (that then also could imply some form of vocational education) and costs for higher education. From the interview data it is not evident what kind of education the interviewed person was attending at time of the interview; so it is assumed that those having i) German schooling qualifying to higher education and ii) are currently studying are regarded as students on college or university, with a yearly cost of 7 280 €. The other interviewed person that stated to be currently studying are assumed to attend a school or vocational school, with an estimated annual cost of 3 000 € (i.e. the same cost that were applied on children of the age 16 or 17 years).

The running expenses for universities in the year 2000 amounted to 13 079 million € according to *Statistisches Bundesamt*. These costs are subtracted from the total amount of costs for college- and university education. The increase in costs is set to 2.3 percent a year, corresponding to the increase of costs between

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[40] The numbers are supplied by Statistisches Bundesamt as "Lfd. Grundmittel" in "3.1 Basisdaten für die Berechnung finanzstatistischer Kennzahlen für den Hochschulbereich", 2003. All in all expenditures amounted to 13 079 Million € and the number of students were 1 796 006. I am thankful to Harald Eichstädt from Statistisches Bundesamt for supplying the data and patiently assisting me in understanding its contents.

[41] One could call in question the necessity in seeking to distribute university cost on the students since the research that is pursued can be seen as a good that fortunate society in general. That is the argument in Boll (1994). By this he let these costs being part of the lump sum amount that is distributed evenly over the population. Bonin (2002) on the other hand distributes education costs according to average amounts based on education statistics and information in the SOEP with respect to the included interviewed persons' type of education.

the years 1998 and 1999 as stated in Table 20.4.2 in *Statistisches Jahrbuch 2002*. The amount valid for college and university that is included in the lump sum is calculated as:

18 683*1.023^3 – 13 079*1.023^2 = 6 314 million €, where the first number states the total costs for 1999 that is adjusted upwards for the year 2002 by multiplication with the annual percentage factor of 2.3 three times and where the second amount (the running expenses) are multiplied two times with that factor. This implies that the remaining amount that is to be included in the lump sum is 6 314 million €. In line with the residual procedure the amount that shall be included is subtracted from the gross expenditure for universities, which result in that 18 683*1.023^3 – 6 314 = **13 688 million €** are booked as distributed. Since the figures regarding education costs and expenditures for universities are taken from Table 20.4.2 and because these are net costs, there are no compensation to other parts of the public sector to adjust for, i.e. there is no need to control for ”Verrechnungen”.

For calculations of educational costs concerning general schools and the non-distributed share that shall be included in the lump sum the following approach is applied: According to the approach explained above the total distributed costs (both general and vocational schools) correspond to 42 201 million € for the year 2000. This amount is achieved by multiplying the net cost by number of pupils in each year. The total costs in 1999 for both general and vocational schools were about 55 690 million € according to Table 20.4.2. However, the costs for ”Kindergärten” with 8 553 million € are also included and therefore have to be subtracted as these already are distributed as a post in the calculations of ”Jugendhilfe”. Accordingly, an amount of 47 137 million € remains. The increase in costs is assumed to have been 1.8 percent on a yearly basis, corresponding to the change in costs between 1998 and 1999 in Table 20.4.2 in *Statistisches Jahrbuch 2002* for general and vocational schools. Hence, the estimation procedure is the following: 47 137*1.018^3 – 42 201.581*1.018^2 = 5 993.980 million €, i.e. the amount that shall be included in the lump sum is 5 994 million €. In line with the residual procedure the amount that shall be included is subtracted from the total estimate of expenditure for general schools, resulting in that 47 137*1.018^3 - 5 994 = **43 735 million €** are booked as distributed.

1.3. Fixing the Lump Sum

The table below compiles the numbers that have been distributed on the interviewed persons so far, either by the stated amounts of received benefits of the interviewed persons or by the different distributions that are accomplished by the previously described procedures.

Table 1.1. Distributed amounts for different of expenditure items

Item of expenditure		*Distributed amounts*
Rentenversicherung[42]	(Pension Insurance)	216 570 mill. €
Krankenversicherung	(Health Insurance)	133 803 mill. €
Pflegeversicherung	(Nursing Care Insurance)	16 285 mill. €
Unfallversicherung	(Accident Insurance)	8 730 mill. €
Arbeitsförderung	(Unemployment Compensation)	45 760 mill. €
Sozialhilfe	(Social Security)	25 507 mill. €
Jugendhilfe	(Youth Care)	15 622 mill. €
Erziehungsgeld	(Child-raising Allowances)	7 707 mill. €
Ausbildungsförderung	(Education Allowances)	1 230 mill. €
Wohngeld	(Housing Allowances)	4 224 mill. €
Ausbildungskosten Schulen	(Expenditures schools)	43 735 mill. €
Universiteten	(Expenditures universities)	13 688 mill. €
Sum		*532 860 mill. €*

The here calculated amount of 532 860 million € correspond to panel (1) in Figure 1.1. Accordingly, it is this amount that shall be subtracted from the total amount of expenditures for the public accountings according to the specifications in Table 20.4.2. Hence the next step in the estimation procedure is to determine the relevant items of expenditures that constitute costs for the public sector that are sensitive to marginal changes in the composition and size of the population, but also to accomplish a rough adjustment of these expenditures for the year 2002. As the aim in calculating the sum in Table 1.1 is to take account of operational costs (i.e. running expenses), such expenditures that are associated with, for example, costs for social benefits for civil servants (i.e. ”Beamte”), administrative costs and investment have not yet been allocated to this point. According to the estimation approach visualized in Figure 1.1 such expenditures will be divided by the number of people living in Germany and subsequently distributed over the interviewed persons. However, here one may choose not to include the special transfer payments to ”Beamte” such that are included in the posts called ”Versorgung” and ”Beihilfen” in Table 20.4.2. The procedure depends on how one considers these costs to be distributed or not. Stated differently, the question is to what degree such costs actually represent a relevant public service for individuals and, second, if such expenditures are sensitive to marginal changes in the size of population.

Within the generational accounting literature all remaining costs are distributed with an equal amount on all individuals. Yet, as our calculations are intended to follow those achieved in the Law Model, at this point we aim to examine more closely the distribution of public consumption on an individual level. Overall, the distribution there is accomplished by following the principle that an

[42] Here both ”Rentenversicherung der Arbeiter” and ”Rentenversicherung der Angestellten” are included. No distribution on individuals is done regarding ”Knappschaftliche Rentenversicherung”.

additional cost can be attached to an individual. This means that those items of expenditure that on reasonable grounds do not increase as a consequence of the fact that one or more additional persons make use of that service are not distributed on individuals. This approach is utterly in contrast to the estimations relating to generational accounting as by Bonin (2001). However, to establish a comparable approximation of net transfers it seems reasonable to proceed in a way corresponding to the Danish estimations. Here there is the problem that the demarcation of items of expenditure differs between the Danish and the German public budget figures. However, the purpose here is to achieve a fairly comparable distribution of expenditures; in practice this means that we chose to follow the demarcation as stated in Chapter 6 in *Økonomiministeriet* (1997) as far as possible.

According to the information in Chapter 6 a division of expenditures concerning the public households is applied according to the following division:

1) Costs that do not vary with size of population and accordingly are independent of immigration,
2) Costs that directly or indirectly are affected by immigration.

In the latter case a distribution on individuals is performed according to the following division:

a) A uniform distribution of costs on individuals irrespective of age, gender or immigration status,
b) A distribution with respect to individual consumption of some public service or benefit.

One also finds a point c) in Chapter 6 that involves a distribution of costs connected to the asylum application process per se, but such costs have been omitted in more recent calculations of net transfers and studies regarding the outcome of the net transfer variables for different groups of the Danish population [as in Wadensjö and Orrje (2002)]. Accordingly, no such costs are distributed on individuals here.

Below the list of items shown in Chapter 6 in Økonomiministeriet (1997) is examined and commented on to clarify if and how a distribution is possible (or even meaningful) to undertake in the German case. In that connection also a short summary of the previous described process of allocation of expenditures is presented.

1.3.1. General Public Services and Defence

Expenditures for national defence shall not be distributed on the population as they can be viewed as independent of a marginal change in population size, and thus also to a marginal inflow of immigrants. The same holds for so-called

”generelle offentlige tjenester”, i.e. general public services. It is possible to distinguish such expenditures that are linked to defence and the central administration as these are publicized separately in Table 20.4.2. In particular, these expenditures are denoted ”Verteidigung” and ”Politische Führung und zentrale Verwaltung”, respectively. The first-mentioned amounted to 34 283 million € and the latter to 24 399 million € in 1999. In addition, one here has expenditures for wages and other benefits to ”Beamte” and other employed in civil services (and their relatives) within the public administration and other State based activity that enters under ”Versorgung” and ”Beihilfen”. The costs for these amounted to 32 941 million € and 3 385 million € respectively. To the degree that the entities in the German and the Danish accounting are equivalent these shall therefore not be distributed on individuals. As a result, the entries ”Versorgung” and ”Beihilfen” are excluded from distributed public consumption.

1.3.2. Legal System and Security

According to the description in Chapter 6 that regards the legal system and security, the costs for the police system shall be distributed on all those above 15 years of age. As comparable entries can be determined in Table 20.4.2 such a distribution is feasible to accomplish in the calculations for the German sample. As regards expenditures for prisons these are not explicitly accounted for in Table 20.4.2. However, there is information regarding legal protection (”Rechtsschutz”) that may be seen as the counterpart to the in Chapter 6 stated entry ”*retsvaesendet og kriminalforsorgen”*. Regarding the share of persons that were sentenced for offence in year 1999, the group of non-German nationality made up 34.3 percent (according to Table 15.7 in *Statistisches Jahrbuch 2002*). This group includes immigrants irrespective of country of origin and immigration status, but also temporary visitors and those belonging to in Germany stationed foreign army units. The aggregate share of all immigrants (i.e. those without German citizenship) as part of the total population in Germany in 1999 was 8.87 percent. An apparent procedure is thus to distribute the expenditures for ”Öffentliche Sicherheit und Ordnung” and for ”Rechtschutz” distributed on those over 15 years of age, taking into account these percentage shares.[43] This form of calculation presumably involves an overestimation rather than an underestimation of the average costs for this particular entry that is distributed on the interviewed persons.

[43] See A.3 in Appendix for the applied mode of procedure. Since age classification in Statistisches Jahrbuch 2002 refers to those 15 years of age and above a division with this lower age bound instead of 16 years of age and above is applied. See tables ”Bevölkerung nach Altersgruppen” and ”Ausländische Bevölkerung nach Altersgruppen” that can be found as an excel-file on www.destatis.de.

1.3.3. Education

Expenditures for children's education are distributed according to age of the interviewed persons' children. Thereby it is assumed that average costs are dependent on what school class the child is attending (determined by age), where the costs are weighted for each age group with respect to the number of pupils and the cost for the different types of schools. Unfortunately it is not possible to stipulate the valid type of school by time of the interview for the interviewed persons and their children. This implies that average costs are assigned despite that there might be notably differences in the type of school attended for persons of non-German origin in specified age groups (compared to type of school for persons of German origin). The costs regarding own education that are distributed on the interviewed persons relate to average costs for vocational schools or university education in case one can conclude that they were studying at college or university. All in all is the determination and distribution of costs for education rather vague when applying this procedure. In particular, costs for education are probably underestimated.

1.3.4. Care, Nursing and Public Health

The amounts that burden the public budget regarding these areas are distributed according to information from health insurance offices, but also from social security offices as associated means of health care to some degree are paid by them and then included in "Hilfe in besonderen Lebenslagen". Specially, to some extent these are expenditures for persons that for different reasons do not pay contributions to public health and nursing care insurance.

It is not possible to clearly determine if the interviewed person was insured (we have information for own paid social security contributions to health insurance by the interviewed persons but not for if insured by the spouse's contributions) and there is no information regarding the number of reported sick days. Thus, we choose to assign mean values for sickness benefits, relying on aggregate figures referring to age and gender. Accordingly, these are average numbers, based on the size of population in the respective age and gender group. Furthermore, no distinction can be made between native Germans and those of foreign origin as such demarcation is not present in the official statistics.

1.3.5. Social Sector

Expenditures regarding non-institutional and institutional care are distributed based on information from the statutory health and nursing care insurance offices and social authorities. These costs are distributed as described extensively in the subsections in section 1.2.

As regards youth welfare, current expenses are distributed with respect to population share in the different age groups. Here it is not possible to separate costs for native Germans and people of foreign origin as the data sources do not allow for such a division.[44]

For child care in terms of day-care centres (as ”Kindergärten”, ”Kinderkrippen” or similar institutions) the interviewed persons' answers regarding type of child care their children attend are utilized. Depending on the stated type of child care a corresponding average cost is laid on the children (it is not possible to distinguish between native Germans and people of foreign origin).

As regards the distribution of costs that relates to administration, which according to the Danish approach is left out in distribution on the interviewed persons, a corresponding demarcation is feasible to achieve. In Table 20.4.2 a number for administration costs (”Sozialverwaltung”) of 4 303 million € for the year 1999 is shown. Hence, this amount is excluded from the amount to be distributed on the interviewed persons.

1.3.6. Public Housing Costs

According to the Danish approach costs that concern public housing commitment are not distributed on individuals, with the exception of investment costs. Comparable public expenditures can be found under ”Wohnungswesen, Raumordnung, kommunale Gemeinschaftsdienste” (Table 20.4.2). This means that costs regarding ”Wohnungswesen” (sum 1999: 6 707 million €), ”Raumordnung, Landesplanung, Vermessungswesen” (sum 1999: 3 959 million €), ”Städtebauförderung” (sum 1999: 1 456 million €) and also costs that are about handling of refuse, sewerage, and public cleansing etc. (sum 1999: 16 010 million €) are not distributed. In all, those costs amounted to 27 998 million € in 1999.

1.3.7. Cost for Cultural Institutions, Sports, and Other Activities

In the Danish accounting, costs for cultural institutions, sports and the like are distributed on native Danes and those of foreign origin separately, besides costs that are linked to administration issues. Due to lack of more accurate data we choose to distribute an unanimous average amount (these involve the entries

[44] However, it seems that the mere numbers of measures that in some way are linked to public social institutions are rather alike for young people with immigrant background and native Germans (see Table 19.17.1 in Statistisches Jahrbuch 2002). On the other hand it is not clear to what extent the measures taken for young people with immigrant background are equally expensive or not. See also the other tables in Chapter 19.17 for a division of measures concerning ”Jugendhilfe”.

”Kultur” and ”Gesundheit, Sport und Erholung”). Administrative costs are not explicitly accounted for in Table 20.4.2, so an adjustment cannot be made.

1.3.8. Costs for Infrastructure of Industry

The counterpart to expenditures related to infrastructure of industry is presumably ”Energie- und Wasserwirtschaft, Gewerbe, Dienstleistungen” that in total amounted to 25 981 million € in 1999. In addition one should here include ”Wirtschaftsunternehmen” (sum 1999: 13 680 million €), which are expenditures for varying public-owned enterprises that provide services within the public sector. As is the case for ”housing costs” above, these costs shall not be distributed on individuals as they are regarded to be unaffected by a marginal change of the size of population, or that marginal cost rises are counteracted by economies of scale. However, investment costs shall be distributed equally over the population.

1.3.9. Subsidies

Subsidies to agriculture and other branches of industry are in the Danish accounting assumed to be independent to the size of population and are thus excluded in the distribution. In the German accounting as in Table 20.4.2 it is not obvious what items that correspond to this entry, but we regard ”Ernährung, Landwirtschaft und Forsten” (sum 1999: 11 251 million €) as a reasonable counterpart. That amount will therefore be excluded in the distribution approach. Likewise we abstain from including investment subsidies linked to private owned companies. Investment costs regarding promotion of economy (”Wirtschaftsförderung”) amounted to 12 431 million €.[45] These are not linked to any particular item of expenditure in Table 20.4.2, besides 987 million € for ”Ernährung, Landwirtschaft und Forsten”. Such public commitments are of similar nature as investments in industrial estates or the like. These costs do not vary due to a marginal change of the size of the population. However, investment costs that shall be included explicitly (i.e. besides those investments included implicitly through applying the residual procedure), are investments for ”Wohnungswesen, Raumordnung, Städtebauförderung” (5 772 million €), ”Kommunale Gemeinschaftsdienste” (4 566 million €), ”Verkehr und Nachrichtenwesen” (14 468 million €), ”Wirtschaftsunternehmen” (6 961 million €, all figures for the year 1999). In all the sum for these included investments is 31 767 million € in 1999.

[45] Information regarding public investment costs are shown in Table 20.4.4 ”Investitionsausgaben der öffentlichen Haushalte 1999 nach Arten und Aufgabenbereichen”.

1.3.10. Income Benefits

See the description of the respective subsection of section 1.2 regarding how income benefits are handled. As they can be linked directly to individuals, no further differentiation has to be made. Administrative expenditures and investments linked to the respective sources of these benefits, however, shall be distributed on the interviewed persons with an equal amount.

1.3.11. Other Transfers

Other transfers include public contributions to private institutions but also payments to other countries. These are treated as being independent of the size of population and hence shall these expenditures not be distributed on individuals. It is not possible to determine to what extent expenditures in Table 20.4.2 imply contribution to private institutions, but presumably they are rather small. Contributions to other countries in terms of aid to developing countries are included in the entry foreign affairs (”Auswärtige Angelegenheiten”). As this item of expenditure mainly includes expenditures for general public services, the total amount is excluded from distribution on the interviewed persons (sum 1999: 20 314 million €).

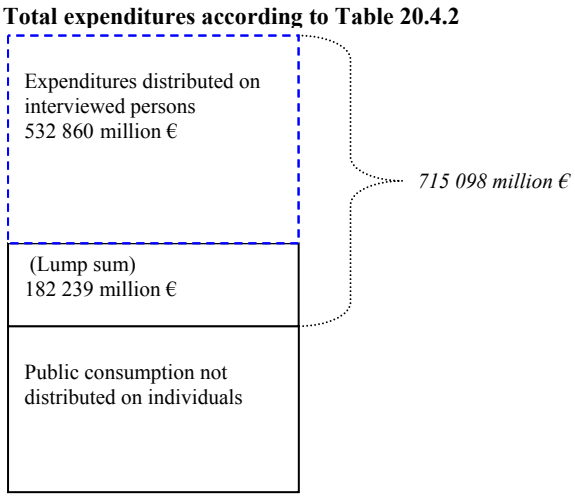
1.3.12. Other Investments, Public Transfers of Capital and Payments of Interests to the Private Sector

Other investments, public transfers of capital, and payments of interests to the private sector are regarded as being independent of a marginal change in size of population and are thus not distributed on individuals. To the extent investment costs can be demarcated in correspondence with the approach in the Law Model some investment costs are excluded in distribution, for example investments in the form of ”Wirtschaftsförderung” as mentioned under point 1.3.9. The figures that relate to transfers of capital and payments of interests to the private sector are accounted for in the item of expenditure denoted public debts (”Schulden”) in Table 20.4.2 (sum 1999: 70 814 million €).

1.3.13. Calculation of Lump Sum and Distribution on Individuals

In total the included expenditures sum up to 715 098 million € (in 2002 years values). From this amount the already allocated expenditure of 532 860 million € are subtracted. Thus, there is an amount of 182 239 million € left to be distributed. This amount is divided by the total population size, yet, with a special adjustment applied regarding the cost for ”legal system and security”, as stated in section 1.3.2. This results in 2 738 € for each person from 15 years of age and upwards and 1 837 € for those of younger age. Accordingly the first number burdens the interviewed persons’ net transfer accounts directly. The

latter amount is allocated in case own children's net transfers are added to their parents' net transfer accounts.



1.4. Estimations of Direct Taxes and Social Security Contributions

This section describes the composition and calculations of those entries that contribute positively to the interviewed persons' net transfer accounts. In essence, these are tax payments and social security contributions.

The direct taxes paid by the interviewed persons are intricate to calculate. The main problem lies in the complex German income tax legislation that inherently involve tax deductions that relate to both expenditures that emerge in connection with employment (then called "Werbungskosten") and also with respect to one's socio-economic status, such as tax allowances for own children. In the latter case there are tax deduction for child allowances ("Kinderfreibetrag") and also a so-called "Freibetrag für den Betreuungs- und Erziehungs- oder Ausbildungsbedarf".[46] As regards tax deductions for children the procedure is the following: The parents (both or one of them, usually the mother) having custody of the child receive a monthly payment of child benefits ("Kindergeld"). The received annual amount of these payments are registered by the local tax authorities and then compared with a fixed tax deduction for each child. This

[46] Furthermore there exists a so-called household deduction ("Haushaltsfreibetrag") that can be used by single parents that have custody for one or more children. In particular, this deduction applies when the parent's income is not assessed for joint taxation. As regard the distribution of taxes on labor income in the German generational accounting as in Boll (1994), this is achieved by using information taken from the GSOEP, i.e. the stated amounts of paid taxes and labor income. In the present survey (*RFMS-G*) there is no such information on an individual level.

procedure is applied in connection with the annual income-tax return procedure. If the tax authorities realize that a tax deduction entails a larger gain for the taxed person, the paid amount of child benefits are adjusted with respect to the stated tax rebate. On the other hand, if the paid amount of child benefits is larger than the gain of an applied tax deduction, the individual instead of a tax deduction keep the child benefit(s) as a benefit.

Furthermore, there exists the opportunity of claiming tax allowances for extraordinary expenses (”Aussergewöhnliche Belastungen”), e.g. in case of ill-health, need of care, disablement, death of family member, divorce etc.

For each individual’s income a tax exempt amount of 7 235 € per year is fixed automatically, for income of married couples assessed for joint taxation the exempt is twice this amount, i.e. 14 470 €. Income benefits such as unemployment benefits or unemployment assistance, sickness benefits and parent allowances and also income derived from sources abroad are not taxed, yet, they might raise the income tax rate on other, taxable income within the same year as they raise the total income amount that enter the progressive tax schedule. Stated differently, the taxable income end up on a higher level and thus a higher tax rate is appointed on the margin. This is the meaning of what in the German tax legislation is called ”Progressionsvorbehalt”, as occasionally referred to in the preceding sections for the different forms of public transfers.

Another complicating factor in the German tax legislation is the opportunity of joint taxation of married couple’s income. This form of taxation is optional, but in case married couples have income that differ notably in size (and given that both spouses are under the German tax legislation), joint taxation is economically more advantageous. This advantage arises because of the progressive design of the tax algorithm, that leads to that a married couple’s total income is taxed at a lower rate than if both spouses’ incomes were taxed on their own. In practice the procedure implies that married couple’s incomes are summed up and divided by two before the tax algorithm is applied (a procedure named ”Ehegattensplitting”).

To attain a taxation that reflects one’s socio-economic situation already during the current calendar year (for example realizing the advantages of joint taxation) there are different tax categories (”Steuerklassen”) that classifies employees. In practice, the valid tax category is stated in tax cards (”Steuerkarten”) that are distributed by the local authorities and form the basis for the tax payments accomplished by the employers. There are six tax categories for employees that more or less reflect the income and socioe-conomic situation. However, the so settled tax rates are just preliminary as the final tax rates are decided on first after the declaration of income. Persons having income from self-employment are not obliged to monthly tax payments in general. Instead they usually make

beforehand quarterly payments of the assumed total amount of income taxes instead (a so-called ”Einkommensteuer-Vorauszahlung”).

It would have been desirable to calculate tax payments based on interviewed persons gross and net income, preferably on a yearly base. Unfortunately such information on income is only available concerning the interviewed persons' households and then only for the month before the interview was conducted. This has the following implications:

a) There is no unambiguous information regarding the interviewed persons' gross and net income, except in the case of one-adult households

b) Out from the survey data one cannot determine if those persons being self-employed did pay any taxes at all or if they stated an average monthly amount for the month before the interview was held. Accordingly it could be the case that their (average) monthly tax payments are not included when calculating total contributions out from the households' gross and net income. However, also the opposite may be the case: A self-employed that made a quarterly tax payment the month before the interview might have stated that quarterly amount.

In addition to these uncertainties, quite a few of the interviewed persons did not answer the questions concerning their households' gross and net income. Of the 5 669 persons that were interviewed 4 230 persons stated their household's net income and 3 844 stated the household's gross income. In the latter case 1 374 persons stated the same amount for gross- and net income. On the on hand this may correctly reflect the situation that these households did not pay any taxes or social security contributions. On the other hand one cannot exclude the possibility that some of the interviewed persons were not capable to distinguish between these two terms. Furthermore, one could call into question the interviewed persons' knowledge of the other members of the households' income, in particular their gross income. This concern is obviously even more relevant in households with many members, calling into question the reliability of the stated amounts.[47]

As it is not feasible to control for all the interviewed person's possible tax deductions especially as there is a rather sizeable falling off as regards questions relating to their spouses' income (for 479 of the 1829 spouses that according to the interviewed persons were wage earners information for the amount of labor

[47] When restricting the sample to interviewed persons that have answered all questions regarding received individual and household related income 3 405 persons remain. For questions concerning the interviewed persons' own income (including social assistance and housing allowances to the household) the number of person that answered is 4 488. This means that questions regarding the households' gross and net incomes led to a fall off of 1 083 persons.

income was missing) tax payments are calculated according to the following approach:

1) Overall, income taxes are estimated on the interviewed persons stated own amount of received labor income (including taxable pension income, if any; see also section 1.4.1 below) with tax rates determined according to the tax algorithm stated by ”*§ 32a Einkommensteuergesetz (EStG)”*.[48] In that connection a tax deduction for every employee is applied, as these accrue to all (dependently) employed, irrespective of family situation or chosen form of taxation (i.e. individual or joint taxation). This tax deduction is 1 044 € per year and is denoted ”Arbeitnehmerpauschbetrag”.

2) For those interviewed persons that were married and stated their own labor income and (taxable) income for the spouse (or pension incomes, if any) or where the interviewed person stated that the spouse did not have such income, joint taxation is applied instead, where all the spouse’s taxable income is included. Likewise a tax deduction of 1 044 € is applied, yet, only for the interviewed person himself/herself (provided that he/she is in employment), i.e. here the spouse does not get this allowable deduction assigned. The choice to include other taxable income than labor income is not entirely consistent, as only the interviewed person’s labor income (and possibly pension income) is accounted for. The reason for applying such procedure is to mitigate the reduced tax rate implied by the joint taxation approach for the interviewed person’s own labor income, thereby taking account of the rather large fall off regarding information on the spouses’ labor income in general. However, the marginal effect caused by these other income is rather moderate because of its small magnitude in total.[49]

The here chosen estimation approach implies a simplified application of the tax regulations that are stipulated by the German income tax legislation. The estimation approach mirrors the most crucial aspects in determining the amount of paid income taxes from work. Excluding other (possibly substantial) forms of tax deductions presumably overestimates the real tax payments made by the interviewed persons. This may to some extent be outweighed by the fact that some other taxable incomes are excluded and also because some incomes are not taken into account that may cause a rise of the marginal tax rate. Besides, taking account of the tax implications by such incomes necessarily call for detailed information regarding all possible incomes received and tax reducing

[48] The interviewed persons were asked to state their gross wage, i.e. the wage before tax payments and social security contributions were deducted.

[49] For interviewed persons that stated an own labor income and had a spouse who was working, the according amounts of labor income are not reported in 108 cases.

expenditures made during a year.[50] For example, as stated above income payments by unemployment benefit funds are exempted from taxation, but underlie ”Progressionsvorbehalt”. Some of the interviewed persons stated both an income from work and unemployment compensation. In such cases only the income from work is taken into account in the calculations of paid taxes but not the unemployment compensation (in all there are 71 persons where this is actually the case).

Among the 2 894 persons that stated they received income from gainful employment, 509 did not answer how much they earned, i.e. for these persons it has not been possible to calculate the tax-payments on labor income. Hence, it is not possible to determine their net transfers according to the chosen estimation approach.

As was said before, the option of tax deductions for own children is not taken into account in the estimations. This means that child benefits in shape of ”Kindergeld” are treated as a public allowance. This approach follows from the fact that the question in the survey regarding received child allowances is combined with received amounts regarding other public benefits which makes it impossible to determine the respective amount. Accordingly it is not possible to calculate in what cases a tax deduction for own children would have been more advantageous for the interviewed persons. As child allowances (”Kindergeld”) are not taxed and do not underlie ”Progressionsvorbehalt”, these are left out entirely in the calculation of income taxes on labor income.

All in all, the calculation of the direct taxes shows some notable shortcomings. However, the most essential features of the tax system are implemented, i.e. there is a clear link between the interviewed person’s labor income, the progressive tax algorithm, and their marital status.

1.4.1. Income Tax on Pension Income

The persons who receive a pension but at the same time are gainfully employed have to pay taxes on their labor income. Furthermore, pension income is subject to ”Progressionsvorbehalt”, i.e. pension income raises the level of total income and by this the marginal tax rate on labor income. However, only a smaller part of pension income is taxable as such. This is the so-called ”earnings share” (i.e. ”Ertragsteil”) and is determined by the following elements:

a) It distinguishes between old-age pension (i.e. ”Altersrente”) and early retirement pension (i.e. ”Erwerbsminderungsrente”) paid by

[50] Regarding taxation of other income, see section ”1.4.2. Income Tax on Other Income” below. See also Appendix for the practical mode of computation in estimation of the direct taxes.

the statutory pension insurance[51]
and

b) an age factor.

The age factor has different meaning in the two pension forms: As regards old-age pension the age factor relies on the age when one is starting to draw pension income. A person that starts to collect pension from 65 years of age (the regular pension age in Germany) has an earning share of 27 percent of the pension income, while a person that retires at the age of 66 has a share of 26 percent, et cetera. For those persons that draw pension before the age of 65 the earning share increases with one percentage unit for each year. That share remains constant, i.e. it does not change with age. To be able to state the correct earning share one thus would need information regarding when a pensioner retired and started collecting old-age pension.

For those persons receiving a disability pension the earning share is determined by the number of years that remain to the time when early retirement pension transforms into an old-age pension, normally when the person has turned 65. The earning share extend from 0 percent for a person that has less than one year left to become old-age pensioner, up to 55 percent for a person that has 40 years left. Likewise, the earning share once qualified for retains to the time the transform to old-age pension take place (when the earning share according the old-age pension regulation come into force).

Of those persons in the survey who stated that they had a pension income the majority received old-age pension (217 of 331). It is not possible to determine the accurate earning share as information regarding the starting point of pension is lacking. Accordingly this has to be approximated in a plausible manner. Those persons that were 65 or older and collected old-age pension are assigned an earning share of 27 percent, while those who were younger get an earning share corresponding to their age at time when the interview was conducted. For persons that received a disability pension a corresponding approach is applied. Considering the fact that more precise information is lacking as to when each person retired and also because taxes on pensions are rather small in comparison, this approximation may well be acceptable.[52]

[51] Pensions paid by the statutory accident insurances are both exempt from income tax and not subject to ”Progressionsvorbehalt”.

[52] In the estimation of tax rates for the interviewed person’s labor income where joint taxation is applied the earning share of the spouses’ pension income (given there were any) is set to 27 percent uniformly.

1.4.2. Income Tax on Other Income

Here the determination of taxes that relate to income that not origin from work, e.g. income from interest, other kind of wealth and income from rent and leasehold are under focus. The interviewed persons were asked to state all these different incomes as a lump sum amount (”Einkommen aus Zinsen, aus anderem eigenem Vermögen oder Einnahmen aus Vermietung und Verpachtung”). However, the here accounted posts are treated differently in the income taxation legislation, both with respect to size of tax rates and the option of claiming tax deductions. Furthermore, the stated amounts could include net as well as gross amounts. For example taxes on income in the shape of interest on savings are transferred directly by banks and credit agencies to the tax authorities at time of realisation, while income with respect to rent and leasehold are taxed first in connection with declaration of taxes. The difference in collecting taxes thus relates to the point of time for realisation, the trade terms are ”Quellenabzugsverfahren” and ”Veranlagungsverfahren”, where the first one regards tax payments that are conducted at time of received income and the second one the tax that is stipulated after the annual income-tax return.

Merging these different sources of incomes may induce a rather sizeable over- or underestimation of the incomes included in the calculations of paid taxes, i.e. when multiplying the stated amounts by 12 (month) to achieve annual amounts.

In the survey 86 persons stated that they had income of the kind discussed above the month before the interview. Of those only 49 stated how much they got, with an so calculated average amount of 748 € per month.

As can be seen by the here indicated complications regarding the source of the included incomes it is not obvious what tax rate to apply. However, this uncertainty should in some sense be reflected in the chosen tax rate. Therefore it seems reasonable to apply a uniform tax rate of rather low size and also to leave out these amounts in the calculation of tax rates on the interviewed person’s income from work. A low tax rate takes account of the lacking information with respect to source and the huge fall off regarding received amounts. Due to this ”special treatment” these incomes do not influence income tax rates estimated for the other incomes in the progressive design of the tax legislation. A tax rate of 20 percent may be reasonable as it corresponds to the initial income tax for the year 2002 of 19.9 percent.

1.4.3. Solidarity Tax Contribution (”Solidaritätszuschlag”)

”Solidaritätszuschlag” is a special tax introduced in connection with the reunification of Western and Eastern Germany. According to tax legislation this is estimated to correspond to 5.5 percent of the stipulated income taxes paid by

the interviewed persons, provided that the estimated annual tax payments lie above a minimum amount of 972 €.

1.4.4. Estimation of Paid Social Security Contributions

The statutory social insurances secure social and economic protection in occurrence of sickness, disability, unemployment or retirement. Social security contributions are paid by employees that receive earnings above a fixed basic amount. The contributions for the different parts are calculated with the following percentage shares on gross earnings (valid for 2002-01-01):

a) pension insurance (”Gesetzliche Rentenversicherung”) 19.1 percent

b) health insurance (”Gesetzliche Krankenversicherung”) around 13.6 percent[53]

c) nursing care insurance (”Gesetzliche Pflegeversicherung”) 1.7 percent

and

d) unemployment insurance (”Arbeitslosenversicherung”) 6.5 percent.

These contributions are shared equally by employees and employers. According to Bonin (2001), the employee shall be credited with the total amount, i.e. also that part contributed by the employer. In addition to these four branches there also exists an accident insurance, which is merely financed by employer contributions. The contribution here vary to some extent, among other things depending on what occupational group the employee belongs to, but on average the contribution is approximately 1.3 percent of gross wages.

In the calculations of the different contributions the option of low wage incomes exempted from social security contribution are taken into account (”Geringfügige Beschäftigung”) and also different contribution assessment ceilings (so-called ”Beitragsmessungsgrenzen”). For those interviewed persons that earned a wage less or equal to 325 € a month and having working hours less than 15 hours a week a payroll tax of 22 percent to health- and pension insurance is assessed. Such form of employment is called ”Geringfügige Beschäftigung” in the social security legislation. In addition, differences in contribution amounts and assessment ceilings between Western and Eastern Germany is taken into account.

For self-employed persons there is no obligation of paying contributions to the mandatory social insurance offices (this holds also for those persons that earn income above the contribution assessment ceilings). However, self-employed (and high income earners) have the option of paying corresponding amounts to

[53] 13.6 percent is an average amount as contributions vary slightly between different health insurance funds.

the statutory social insurances and by that guarantee themselves similar benefits as those who are mandatory insured. The total contribution paid by the self-employed is approximately 34.4 percent of gross earnings according to figures by the trade union *IG Medien*.[54]

Since those interviewed persons said they were employees, self-employed or assisting spouses were also asked to state if they paid social security contributions or not, this information is preconditioning the estimations of respective contributions. Furthermore, it is assumed that all contributions are paid to the statutory insurance offices and not to their private counterparts, i.e. all contributions entirely end up in the public sector accounts and thus contribute positively to the interviewed persons' net transfer accounts. Some practical aspects in the procedure of calculating the according social security contributions can be found in Appendix A.2.

1.5. Estimation of Paid Indirect Taxes

To estimate how much the persons included in the survey paid in indirect taxes, figures from an enquiry regarding household consumption conducted 1998 by *Statistisches Bundesamt* in the "German Income and Expenditure Survey" (i.e. the "Einkommens- und Verbrauchersticprobe 1998" (EVS 98)), have been used. There one can find detailed estimations about average consumption of all kind of goods and services according to the representative households' income. The specifications from EVS 98 have the restrictions that they relate to household data and that the age classification relates to the person that is main wage earner in the household.[55] In particular, the figures are subdivided into seven age groups (those aged below 25, 25 to 35, 35 to 45, 45 to 55, 55 to 65, 65 to 70 and 70 years or older). Using these figures group specific average taxes are

[54] See http://www.igmedien.de/publikationen/m/2002/1_2/36d.html. This percentage share does not include contributions to the accident insurances. In our calculations the average fee for self-employed regarding accident insurances contributions are calculated as a standard rate applying a similar assessment ceiling as for employees. For Western Germany the total average amount of contributions for employees is on average 40.9 percent (when employers' shares are included).

[55] Another drawback with these figures is that they relate to consumption behavior for the year 1998, i.e. the specifications is lagging about four years behind the time the survey was conducted. This implies that different development in price trends for different goods to some extent also can have contributed to changes in relative shares of consumption. Especially changes regarding different rate of taxes for fossil fuels that were introduced from the year 1999 and onwards can have caused changes in consumption patterns. In lack of more recent versions of EVS (i.e. at time of calculation of the net transfer outcome as documented here) one has to stick to the 1998 figures. One further limitation of the EVS is that these figures do not take account of immigrant's presumably different consumption patterns.

calculated by means of taking account of the respective consumption distribution.[56]

From the survey it is not apparent who is the main wage earner. Therefore a ”help variable” has been created in an attempt to determine the main wage earner and his/her age. The average age according to that estimation is about two years higher than the average age of the interviewed persons. In a few cases, however, these two age variables are clearly dissimilar, for example this is the case if one of the parents to the interviewed person is the main wage earner. To be able to estimate the respective shares that relate to consumption of particular taxable goods (but that are not demarked explicitly in the EVS 98), a separate ”goods indexation” is used. At the time of the here applied estimation the most recent edition of this goods indexation relates to consumption figures for the year 2000.[57] A refined division according to the goods indexation is useful in case the tabulated division of consumption in the EVS 98 is not sufficiently detailed.

1.5.1. Estimations of Value-added Taxes (VAT)

These estimations rely on the tax rates as defined in the ”Umsatzsteuergesetz”. In general, VAT’s are set to 16 percent, but for some goods such as newspapers, food, public means of transportation these are set to 7 percent, while rents and concerts are exempt from VAT. (In the national balance sheet, taxes on imported goods are accounted separately as ”Einfuhrumsatzsteuer”).

1.5.2. Specific Taxes on Consumer Goods (”Verbrauchssteuern”)

1.5.2.1. Taxes on Fossil Fuel and Electricity

The problem in the estimations of excise duties regarding oil, gas and electricity is that the tax rates do not relate to price, but are fixed amounts in proportion to level of consumption. This means that the tax rates on consumption expenditures vary depending on prices, which in turn vary with geographic location and quantity.[58] The figures used regarding taxes on liquid fuel are derived from public sources, stating mean tax amounts for petrol and oil, relating to the years

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[56] A corresponding procedure is used by Bonin (2002). By that he also makes the assumption of similar consumption patterns for immigrants and native Germans.

[57] According to Statistisches Bundesamt, ”Wägungsschema Verbraucherindex Deutschland”, from February 2003, found as a pdf-file under http://www.destatis.de/download/d/preis/waegsch02.pdf.

[58] As regards petrol a similar form of taxation applies, but here the price per consumption unit usually is not that sensitive to quantity and location.

2001 and 2002 respectively.[59] The so applied tax rates are set to 60 and 17.5 percent respectively. Taxes on electricity are set to 11 percent and on gas to 6 percent. The first figure is founded on an appreciation made by the German association of electricity companies, i.e. ”Verband der Elektrizitätswerke” (VDEW), presupposing an average family with an annual electricity consumption of 3 500 kilowatt hours. Taxes on gas consumption are taken from estimations provided by Eurostat referring to a consumption of 4 652 kilowatt hours. Beside these taxes, a fee to home municipalities is added, the so-called ”Konzessionsabgabe” that relates to the cost for supply of infrastructure measures that approximated to 12.5 percent of the electricity cost, according to information from VDEW.

1.5.2.2. Tax on Alcoholic Beverage

As was the case above for fuel, gas and electricity, tax rates for alcoholic beverages are based on the amount of consumption. There are three different kind of alcohol taxes: ”Biersteuer” (tax on beer), ”Schaumweinsteuer” (tax on sparkling wine) and ”Branntweinsteuer” (tax spirits etc.). There are not specific taxes on wine. The mode of procedure to calculate the respective average tax rates is the following: As a starting point the total expenditures for alcoholic beverages for the year 1997 (ca 55 billion DM) is combined with information from the goods indexation for the year 1995 to estimate the approximate share that wine, spirits and beer make up respectively within total consumption. According to the goods indexation, expenditures for beer in the year 1995 were 55*(12.27/21.34) billion DM, which corresponds to 16 169 million €, where 21.34 is the weight for alcoholic beverage in the goods indexation and 12.27 is the weight for beer consumption. The total revenues for taxes on beer in 1998 amounted to 850 million €. This results in an average tax rate of 5.3 percent. Estimating tax rates for spirits and sparkling wine in a similar sense leads to 60 respective 6.4 percent. Thus, here figures from different years are pooled together, which imply that the so fixed tax rates merely serve as a crude approximation of the ”real” values.

1.5.2.3. Taxes on Tobacco Products

Taxes for tobacco products in the year 2002 amounted to 13.8/23.3, i.e. about 59 percent according to *Statistisches Bundesamt* (source: press release 20th January 2003).

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[59] Source: Landesamt für Umweltschutz Baden-Würtemberg ”Entwicklung der Kraftstoffpreise in Deutschland ab 1970”: http://www.lfu.badenwuerttemberg.de/lfu/abt3/luft/verkehr/berichte_und_links/kraftstoffpreise_25_3_2002_1.pdf, and information by ”Deutscher Mieterbund” (that is the German residents association).

1.5.2.4. Taxes on Coffee

This tax rate is approximated by dividing the total tax revenues and the total turnover in the coffee industry in the year 2001.[60] This results in a mean tax rate of 27 percent.

1.5.2.5. Taxes on Lotteries, Gambling and Betting

In the year 2002 these taxes were 16.66 percent according to information by BMF (in ”Lexikon Steuern A-Z” under the point ”Rennwett- und Lotteriesteuern”).

1.5.2.6. Automobile Registration Tax and Taxes on Private Insurances

As regards Automobile registration tax this expenditure is shown explicitly in the EVS 98 (”Kfz-Steuer”). This allows achieving an estimation of the respective percentage share as a proportion to household income.

Regarding taxes on private insurances a uniform tax of 16 percent is applied. There are different tax rates for private insurances, but on average the tax rate is 16 percent according to BMF (”Lexikon Steuern A-Z”).

1.5.3. Allocation of Indirect Taxes on the Interviewed Persons

The details regarding consumption behavior as found in the EVS 98 relate to the main wage earners’ age and their respective household income. Hence in the estimations here an adequate distribution is executed. The different VAT rates for respective goods are used to create a ”VAT-profile” for each age-group. Further, the specific taxes for petrol, tobacco, alcohol etc. are distributed according to the stated tax rates (as shown above) and the percent share of consumption that these goods constitute in the consumption basket with respect to the households’ main wage earners’ age. However, as has been noted before, a number of interviewed persons did not answer the question of the household’s total (net) income. Of those 4 488 interviewed persons that answered to all received individual incomes and received public payments, 676 did not state a household net income. To be able to specify indirect taxes also for them, here the according values are imputed, i.e. their household net incomes are estimated relating to information for the group that answered.[61] Yet, even after applying

[60] The figures are taken from a report by the German coffee industry association, i.e. ”Deutscher Kaffee-Verband” and its ”Kaffee-Bericht 2001”.

[61] The imputation builds on regression estimations with household net income as the dependent variable and individual income and benefits, social assistance and housing allowances and also demographic variables as age, gender, and number of persons living in the household as explanatory variables.

this procedure, for seven persons it was not possible to state the indirect tax amounts, as they lack information for one or more demographic variable.

As the indirect taxes are calculated for the respective households according to their income a distribution on the interviewed person himself is achieved by dividing the according amounts equally with respect to number of adults in the household. This approach follows Bonin (2001, p. 111), who justify such a division. Furthermore, this procedure is also in line with the approach in the calculation carried out in the net transfer estimations as conducted in the Danish Law Model.

The estimations of the indirect taxes may seem to be somewhat schematic and simplified. Yet, these calculations do not differ essentially from what is standard, at least within the German generational accounting literature. As there is a direct link to the interviewed persons' incomes, the here calculated indirect taxes are more nuanced than a distribution merely based on allocated mean values of aggregate data.

1.6. Final Calculation of the Net Transfer Variable

To state the net transfer variable one has to compile all the items as they are demarcated in the previous sections, contributing positively or negatively respectively to the individuals account. To start with those of negative impact, the following items are included:

First these are the public expenditures that can be distributed directly on the interviewed persons as these satisfy both the requirement of being relevant in the way described previously and where figures are available that allow for a division of aggregate data on individuals:

a) Rehabilitation programme expenditures by statutory pension insurance
b) Expenditures born by public health insurance
c) Rehabilitation programme expenditures by public nursing insurance
d) Rehabilitation programme expenditures by public accident insurance
e) Assistance in special circumstances (”Hilfe in besonderen Lebenslagen”)
f) Expenditures for Educational institutions
g) Youth care (distributed on interviewed persons up to 27 year of age)
h) Distributed expenditures of public consumption

Second, the payments that arrive in the form of allowances and/or remunerations that were stated by the interviewed persons themselves:

i) Pensions

j) Unemployment compensation

k) Other public benefits like child benefits (”Kindergeld”) and child-raising allowances (”Erziehungsgeld”) and education allowances (”Bafög”)

l) Social assistance (”Hilfe zum Lebensunterhalt”) for the household

m) Housing allowances for the household

Now looking at the items that contribute positively the following items are accounted:

a) Estimated income taxes (including ”Solidaritätszuschlag”)

b) Estimated social security contributions

c) Value added taxes

d) Other indirect taxes like taxes on electricity, alcoholic beverage, tobacco products etc.

For the interviewed persons’ children younger than 18 the following public expenditures are accounted for:

a) Expenditures born by public health insurance

b) Rehabilitation program expenditures by public nursing insurance

c) Assistance in special circumstances

d) Expenditures for Educational institutions including ”Kindergärten”

e) Youth care

f) Distributed expenditures of public consumption

Thus, childrens net transfers are identical with their respective share of public good consumption, as they are supposed not to receive any public transfers by themselves, but also that they do not pay any taxes or contributions.[62] Tax payments in shape of consumption taxes are, as noticed above, accounted in their parents’ net transfers.

A final, important note in this connection is that expenditures for public consumption regarding children to the interviewed persons are distributed with respect to family status and sex. This means that in case the interviewed person

[62] In the Danish net transfer estimation tax payments by children were recorded in a few cases. In the German sample it is not possible to distinguish such payments by children, but the amounts are most likely small.

stated to be married or cohabiting (”Eheähnliche Gemeinschaft”) these costs are divided by two before entering the respective net transfer account; otherwise the entire amount is recorded. It is open to discussion whether this approach seems accurate or not, nevertheless, it corresponds to the estimations of net transfers in the Law Model (see also Wadensjö & Orrje [2002], p. 105).

In all the net transfer for 4 480 interviewed persons could be estimated as regards their own net transfer accounts. As a consequence of missing relevant demographic characteristics, adding net transfers of their children leads to that a further seven observations drop out, so that we are left with 4 473 observations.

2. Sensitivity Analysis

In this chapter some important aspects and questions that in different ways relate to the validity of the net transfer estimation as such are discussed. We will discuss those concerns that we consider most relevant.

2.1. Examination of Specifications and the Presence of Systematic Bias

Due to the demarcation applied in the estimation procedure as shown in the previous sections, for 1 181 of the 5 669 interviewed persons the net transfers could not be estimated. This falling off is mainly explained by missing information regarding individually received transfers and income. An interviewed person is thus excluded if one or more of the following pieces of information are missing: wage, pension, unemployment compensation, other income, public transfers such as child benefits etc., but also information regarding households' social assistance and housing allowances.

One factor leading to exclusion is when the interviewed persons stated to belong to the labor force but refused to specify the labor income or unemployment compensation. Analogously, persons that stated to receive pensions but refrained from specifying the amount of pension income are also excluded.

To check if such restriction lead to systematic changes of the basic data, below a number of tables are shown that compare the original data (i.e. the *RFMS-G* data) with the confined data set.[63]

The tables to some extent correspond to those that can be found in the Appendix to *Migrants, Work, and the Welfare State*. There the focus lies in comparing the *RFMS-G* data with information applying for the total population from corresponding countries of origin, conducted on the base of information from the central register of aliens/foreigners, i.e. the "Ausländerzentralbehörde" (AZR). The reason to follow this outline is first and foremost to allow for a comparison of the figures, not only with the *RFMS-G*, but ultimately also with the data from AZR.

[63] For ease of notation this subsample will be noted *Gerdes*. Furthermore, merely to facilitate a comparison of respective tables here and those in Appendix to *Migrants, Work, and the Welfare State*, the (non-alphabetical) way of tabulating with respect to country of origin will be retained.

Table 2.1. Respondents in the German survey and those in the present calculations (Gerdes), distributed by sex and country of origin. Percent. Corresponding to Table A.9.

	Turkey		Poland		Lebanon		Iran		Former Yugoslavia	
	RFMS-G	Gerdes	RFMS-G	Gerdes	RFMS-G	Gerdes	RFMS-G	Gerdes	RFMS-G	Gerdes
Male	51.2	51.6	36.4	35.6	54.6	53.1	55.9	55.2	53.9	54.7
Female	48.8	48.4	63.6	64.4	45.4	46.9	44.1	44.8	46.1	45.3
Total	100	100	100	100	100	100	100	100	100	100
No. of obs.	1,472	1,181	1,221	1,006	953	754	1,010	779	1,013	768

There are no clear differences regarding the gender composition over the different countries of origin, see Table 2.1. Also the distributions with respect to time of residence, age and geographic spreading, do not show any large differences between the two samples, see Tables 2.2 - 2.5.

Table 2.2. Respondents in the German survey and those in the present calculations (Gerdes), distributed by period of residence and country of origin. Percent. Corresponding to Table A.10.

	Turkey		Poland		Lebanon		Iran		Former Yugoslavia	
	RFMS-G	Gerdes	RFMS-G	Gerdes	RFMS-G	Gerdes	RFMS-G	Gerdes	RFMS-G	Gerdes
< 1 year	0.1	0.1	0.3	0.3	0.3	0.4	0.0	0.0	0.1	0.2
1-4 years	5.3	6.0	14.3	14.5	7.6	6.9	8.8	9.8	8.0	7.9
4-6 years	3.3	3.4	10.1	10.0	6.1	6.0	6.8	7.6	6.8	5.0
6-8 years	5.1	4.7	9.7	10.5	7.0	7.6	12.0	11.9	6.9	7.2
8-10 years	6.1	5.0	7.6	7.7	4.3	4.7	7.9	8.8	10.2	10.2
10-15 years	13.7	12.4	27.9	28.0	39.7	39.3	20.1	20.4	22.5	23.3
15-20 years	10.7	10.8	13.7	12.7	24.9	26.1	24.7	24.1	5.9	5.9
20-25 years	16.7	18.1	7.4	7.5	7.5	6.2	8.4	8.1	6.4	6.4
25-30 years	17.4	18.1	1.9	1.9	1.9	1.9	3.5	3.1	7.1	7.2
30 years and more	21.7	21.4	7.2	7.0	0.8	0.8	7.7	6.2	26.1	26.9
Residence on average	20.1	20.3	12.7	12.6	12.6	12.7	14.2	13.4	17.5	17.8
Total	100	100	100	100	100	100	100	100	100	100
No. of obs.	1,153	917	1,116	915	912	723	973	754	901	684

Table 2.3. Respondents in the German survey and those in the present calculations (Gerdes), distributed by age and country of origin. Percent. Corresponding to Table A.11.

	Turkey		Poland		Lebanon		Iran		Former Yugoslavia	
	RFMS-G	Gerdes	RFMS-G	Gerdes	RFMS-G	Gerdes	RFMS-G	Gerdes	RFMS-G	Gerdes
15-17 years	1.9	2.1	0.6	0.5	2.1	1.9	0.9	0.9	1.8	1.6
18-29 years	30.9	32.1	24.1	24.5	28.3	28.1	17.7	17.4	24.2	25.2
30-39 years	27.9	27.2	28.5	29.3	39.4	39.6	27.6	28.2	24.0	24.1
40-49 years	15.5	15.3	26.6	26.1	20.6	21.3	31.1	33.0	18.3	17.3
50-59 years	13.4	13.2	12.8	12.7	7.2	6.7	13.0	12.9	20.6	20.5
60-65 years	5.7	5.9	2.8	2.7	1.4	1.5	4.9	4.3	7.6	8.0
66 years or more	4.8	4.3	4.6	4.3	1.1	1.1	4.8	3.5	3.6	3.4
Total	100	100	100	100	100	100	100	100	100	100
No. of obs.	1,467	1,179	1,216	1,005	951	752	1,006	777	1,012	767

Table 2.4. Respondents in the German survey and those in the present calculations (Gerdes), distributed by region and country of origin. Percent. Corresponding to Table A.12.

	Turkey		Poland		Lebanon		Iran		Former Yugoslavia	
	RFMS-G	Gerdes	RFMS-G	Gerdes	RFMS-G	Gerdes	RFMS-G	Gerdes	RFMS-G	Gerdes
Berlin	6.4	7.1	6.6	7.0	21.1	21.2	4.8	5.3	3.2	3.3
Schleswig-Holstein	1.4	1.7	2.8	3.0	1.4	1.2	5.4	5.3	0.5	0.5
Hamburg	4.9	3.9	14.0	13.1	0.0	0.0	17.3	15.8	5.0	4.2
Lower Saxony	6.4	6.4	12.5	12.5	7.8	8.0	8.5	7.8	5.7	5.9
Bremen	6.4	5.1	2.4	1.4	6.5	5.6	0.6	0.4	4.2	1.2
North Rhine-Westphalia	42.3	44.3	32.7	33.9	50.2	50.9	32.3	33.3	36.3	38.0
Hesse	10.2	11.0	8.6	9.1	0.2	0.3	14.7	15.8	10.9	12.4
Rhineland-Palatinate	5.1	4.9	2.1	2.3	0.8	1.1	1.6	1.5	1.8	1.7
Baden-Württemberg	5.4	5.8	5.7	6.4	8.6	9.0	4.2	4.9	13.6	15.5
Bavaria	9.2	7.4	8.9	8.3	1.8	1.5	10.8	10.0	14.2	12.8
Saarland	0.0	0.0	0.0	0.0	1.7	1.3	0.0	0.0	0.0	0.0
East Germany	2.5	2.5	3.7	3.2	0.0	0.0	0.0	0.0	4.5	4.7
Total	100	100	100	100	100	100	100	100	100	100
No. of obs.	1,472	1,181	1,221	1,006	953	754	1,010	779	1,013	768

Table 2.5. Distribution of nationalities in the German data set and those in the present calculations. Age 17 years and up. Percent. Corresponding to Table A.13.

	RFMS-G	Gerdes
Turkey	26.0	26.3
Former Yugoslavia	17.9	17.1
Poland	21.5	22.4
Iran	17.8	17.4
Lebanon	16.8	16.8
Total	100	100
Number of observations	5,669	4,488

The overall rather small differences give some credit to the assumption that the falling off caused by questions relating to incomes and transfers is more or less unsystematic. This result relates to the discussion brought up in the Appendix to *Migrants, Work, and the Welfare State*, (p. 419) regarding the importance of the falling off for the validity of the obtained values in the interview data (*RFMS-G*) compared to what is the outcome in the AZR data.

Taking the analysis a step further, the grade of similarity between the different groups are elucidated somewhat more below, i.e. different kinds of incomes and transfers are compared for persons that answered all question and those that did not answer one or more questions.

The picture that emerges is not clear-cut, but it is rather hard to find systematic differences. However, one should bear in mind that the mean values for those not included in the *Gerdes*-sample refer to shifting subsamples, i.e. they vary in their respective composition of included persons.

The tables 2.7 – 2.9 compare the subsamples with respect to demographic variables and family status. The mean values should not be very different as most interviewed persons actually did answer such questions. A comparison of some demographic background variables are shown in Table 2.7. As can be seen the differences are rather small. For immigrants from Poland, Iran, and Lebanon the share of women that answered all questions regarding income and public transfers is somewhat larger than for the non-answering group (i.e. those not included in the final estimation of the net transfer variable). As regards immigrants with origin from Iran the differences in their demographic backgrounds between those who answered all questions and those who did not are somewhat larger. Likewise also the mean of period of residence differs more among Iranians, but the differences are also in this case rather small.

Table 2.6. Incomes and transfers for the group who did not respond to all income questions and those who did, distributed by country of origin. All income in Euro per month.

	Turkey		Former Yugoslavia		Poland		Iran		Lebanon	
	Not included	Included (Gerdes)	Not included	Included (Gerdes)	Not included	Included (Gerdes)	Not included	Included (Gerdes)	Not included	Included (Gerdes)
Labour income	1544	1497	1604	1689	1194	1560	2117	1892	1400	1252
	(1022)	(903)	(1200)	(1033)	(686)	(1129)	(1697)	(1486)	(2150)	(925)
	31	*577*	*25*	*392*	*32*	*602*	*42*	*417*	*24*	*243*
Pensions	571	743	524	747	727	808	1407	711	445	396
	(299)	(387)	(180)	(380)	(363)	(345)	(904)	(821)	(64)	(280)
	9	*111*	*4*	*83*	*5*	*75*	*15*	*20*	*2*	*7*
Un-employ-ment benefit	424	601	633	651	488	627	571	603	596	605
	(197)	(244)	(272)	(290)	(156)	(326)	(271)	(256)	(308)	(234)
	13	*144*	*8*	*56*	*6*	*78*	*13*	*72*	*14*	*131*
Other transfers (family allowance etc.)	298	322	260	309	256	260	274	261	434	495
	(161)	(173)	(133)	(188)	(185)	(152)	(163)	(126)	(204)	(306)
	79	*544*	*44*	*240*	*54*	*451*	*55*	*337*	*45*	*298*
Social assist-ance	493	492	419	576	389	381	494	447	500	626
	(336)	(523)	(330)	(349)	(187)	(251)	(241)	(274)	(325)	(429)
	16	*100*	*21*	*121*	*9*	*68*	*23*	*146*	*39*	*328*
Housing allowance	194	196	420	186	258	176	220	194	222	260
	(140)	(159)	(355)	(153)	(150)	(107)	(194)	(155)	(181)	(194)
	11	*149*	*8*	*65*	*4*	*102*	*17*	*116*	*18*	*212*

Notes: Standard deviations in brackets. Number of observations written in italic style.

Finally, in Table 2.8 and Table 2.9 the distribution with respect to family status for the different subsamples are shown.

To conclude, clearly there are no major differences. The line of separation, i.e. information on individual incomes and public transfers and their household received amounts of social assistance and housing allowances, in fact did not result in any major systematic changes as to the composition compared with the original *RFMS-G* sample. This result gives some credit to the opinion raised in the Appendix to *Migrants, Work, and the Welfare State* that a fall off on account of income related questions not necessarily lead to systematic divergence in estimations. However, here one has to make the reservation that all persons included

Table 2.7. Some demographic variables for the group who did not respond to all income questions and those who did, distributed by country of origin.

	Turkey		Former Yugoslavia		Poland		Iran		Lebanon	
	Not included	Included (Gerdes)	Not included	Included (Gerdes)	Not included	Included (Gerdes)	Not included	Included (Gerdes)	Not included	Included (Gerdes)
Number of own children under 14 years of age	2.06 (0.86) *135*	1.91 (0.91) *522*	1.79 (0.85) *91*	1.89 (1) *244*	1.49 (0.71) *74*	1.54 (0.72) *377*	1.55 (0.67) *92*	1.55 (0.66) *289*	2.77 (1.55) *118*	2.94 (1.54) *472*
Number of persons in the house-hold	3.64 (1.65) *283*	3.57 (1.58) *1174*	3.27 (1.57) *238*	3.02 (1.57) *765*	2.65 (1.23) *209*	2.64 (1.20) *1000*	2.80 (1.25) *224*	2.71 (1.32) *776*	4.35 (2.21) *198*	4.53 (2.40) *751*
Share of female person (in pct.)	0.50 (0.50) *291*	0.48 (0.50) *1181*	0.49 (0.50) *245*	0.45 (0.50) *768*	0.60 (0.49) *215*	0.64 (0.48) *1006*	0.42 (0.49) *231*	0.45 (0.5) *779*	0.40 (0.49) *199*	0.47 (0.50) *754*
Age	39.8 (14.3) *288*	38.0 (14.2) *1179*	40.9 (13.9) *245*	40.9 (14.0) *767*	40.6 (13.6) *211*	39.3 (12.8) *1005*	42.9 (15.2) *229*	40.7 (11.7) *777*	35.2 (10.9) *199*	35.3 (10.6) *752*
Period of re-sidence	7.25 (2.24) *236*	7.38 (2.35) *917*	6.41 (2.71) *217*	6.76 (2.61) *684*	5.63 (2.29) *201*	5.43 (2.28) *915*	6.48 (2.17) *219*	8.80 (2.15) *754*	5.78 (1.82) *189*	5.80 (1.70) *723*

Notes: Standard deviations in brackets. Number of observations in italic style.

in the *RFMS-G* sample actually did choose to participate. Accordingly, one can not exclude that those persons could differ in a more or less systematic way from those who did not want to join the survey, or those who could not be reached by the interviewers. For example, as said in the Appendix to *Migrants, Work, and the Welfare State*, it has been rather difficult for the interviewers to get in contact with men of Polish origin.

Table 2.8. Family status for the group who not responded to all income questions distributed by country of origin.

		Turkey	Former Yugoslavia	Poland	Iran	Lebanon	Total
Single	number	46	45	39	57	48	235
	percent	*15.81*	*18.37*	*18.14*	*24.68*	*24.12*	*19.90*
Married		214	171	142	135	127	789
		73.54	*69.80*	*66.05*	*58.44*	*63.82*	*66.81*
Cohabitee		3	5	8	6	4	26
		1.03	*2.04*	*3.72*	*2.60*	*2.01*	*2.20*
Divorced		18	16	12	19	10	75
		6.19	*6.53*	*5.58*	*8.23*	*5.03*	*6.35*
Widow/Widower		10	8	13	13	9	53
		3.44	*3.27*	*6.05*	*5.63*	*4.52*	*4.49*
No answer		0	0	1	1	1	3
		0.00	*0.00*	*0.47*	*0.43*	*0.50*	*0.25*
Total		291	245	215	231	199	1,181
		100.00	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*

Table 2.9. Family status for the group who responded to all income questions distributed by country of origin

		Turkey	Former Yugoslavia	Poland	Iran	Lebanon	Total
Single	number	223	151	195	178	138	885
	percent	*18.88*	*19.66*	*19.38*	*22.85*	*18.30*	*19.72*
Married	number	858	518	642	477	547	3,042
	percent	*72.65*	*67.45*	*63.82*	*61.23*	*72.55*	*67.78*
Cohabitee	number	11	19	31	12	15	88
	percent	*0.93*	*2.47*	*3.08*	*1.54*	*1.99*	*1.96*
Divorced	number	55	50	95	88	42	330
	percent	*4.66*	*6.51*	*9.44*	*11.30*	*5.57*	*7.35*
Widow/widower	number	34	30	43	22	12	141
	percent	*2.88*	*3.91*	*4.27*	*2.82*	*1.59*	*3.14*
No answer	number	0	0	0	2	0	2
	percent	*0.00*	*0.00*	*0.00*	*0.26*	*0.00*	*0.04*
Total	number	1,181	768	1,006	779	754	4,488
	percent	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*

2.2. Control of Calculations Regarding Public Consumption

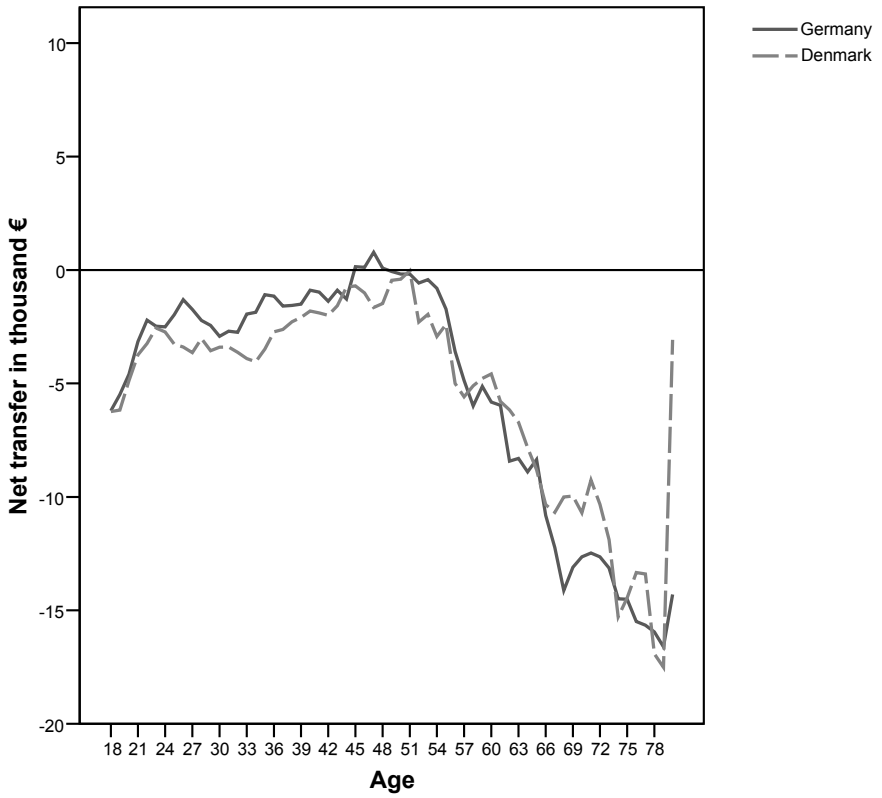
When looking at the calculations regarding net transfer the most critical factor is the determination of individualized public consumption, as described in section 1.3. In particular, there are some uncertainties that may bias the stated amounts. First, the amounts distributed on the interviewed persons rely on aggregate data. Second, the available data generally do not distinguish between native born and immigrants living in Germany. In addition, in our calculations the summation of the costs is done relying on rather schematic demarcations that both relate to the approach given by the literature concerning the general accounting in Germany and methods used by the Ministry of Finance in Denmark.

As one aim of estimating the net transfer variable is to allow for a comparison of the fiscal impact of immigration between Germany and Denmark it would be desirable if the discrepancies in the calculated amounts regarding individualized public consumption are due to differences in real costs and not the outcome of different estimation approaches used for the two countries. From this point of view, it is of interest to study how the distribution of individualized public consumption looks like in a comparison. The intention of this section is to shed some light on this matter. By showing and discussing figures and regression estimations the analysis is more descriptive than strictly analytical. In all these estimations the data for the German sample is non-weighted, which means that each observation is given the same weight and is not corrected for the size in the German population. That is mainly because such a weighting would result in figures very sensitive to the weighting procedure applied, especially when there are only a few observations in some age groups. Furthermore, regression estimations are harder to analyze if a weighting procedure is used.[64]

As a starting point for the following discussion of the importance of the calculations of public consumption, Figure 2.1 displays net transfer for non-Western immigrants in the two samples. Here one can see that net transfers are somewhat less negative in the German case, at least for people up to 60 years of age. As the number of observations is decreasing rather quickly for those above 64 years of age (in both samples) one should not put too much emphasis on the high volatility regarding the outcomes for people aged 60 or older.

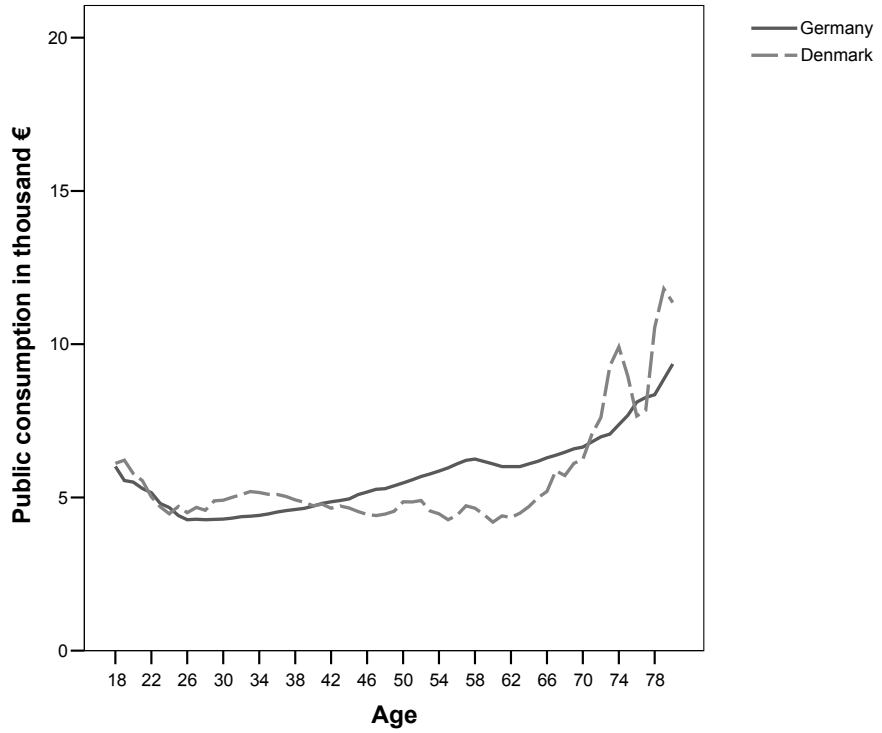
[64] Here Niels-Kenneth Nielsen contributed with some useful comments.

Figure 2.1. Net transfer to the first and second generation of non-Western immigrants (children not included) in Denmark and Germany.



The next figure compares public consumption for non-Western immigrants according to age where the costs for children are excluded. Here both first and second generation non-Western immigrants are included. As easily can be seen the costs vary more over age in the Danish sample than they do in the German, which to some extent can be attributed to more sophisticated data (i.e. register data) used by the Ministry of Finance in Denmark. At the same time the main pattern is roughly the same, decreasing for the first years but starting to rise from about 28 years of age. The different cost cycles for the middle-aged persons are presumably at least to some extent explained by more refined determination of cost for (higher) education in the Danish accounting.

Figure 2.2. Public consumption for non-Western immigrants according to age (three years average); non-weighted values.



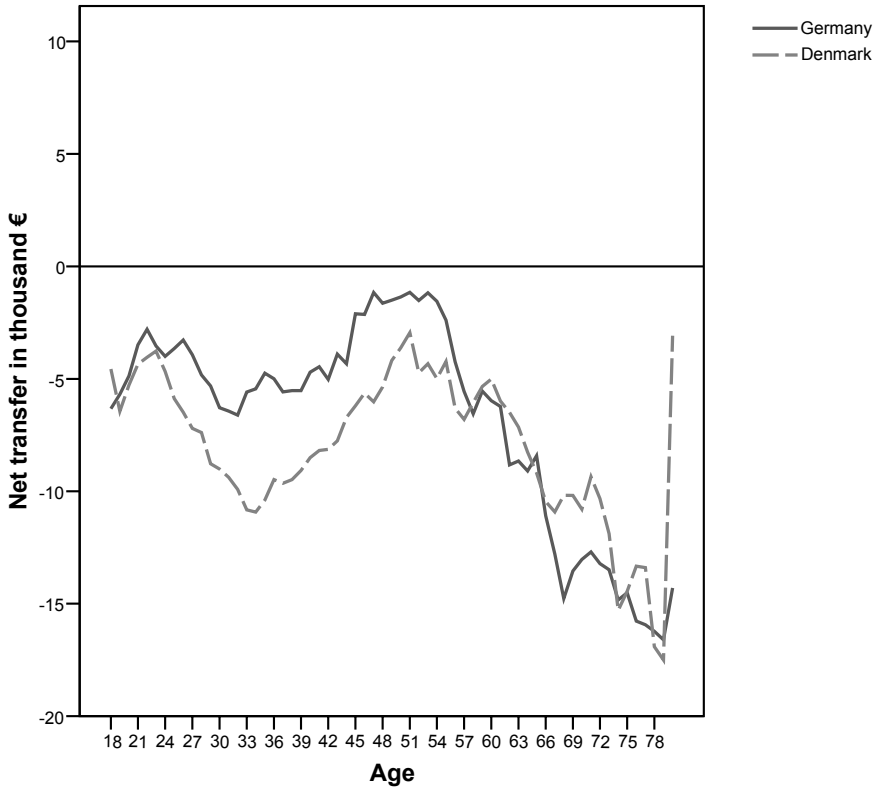
Notes: The costs in Denmark are calculated for the year 2000, in Germany for the year 2002. The costs for children are not included.

A noteworthy result for the validity of the estimation for the net transfer variable is the fact that the levels of the costs do not seem to be very different in size over years of age. This is of special importance when conducting a comparison of net transfers. Figure 2.2 indicates that differences in net transfer are not essentially driven by differences in the estimation of public consumption. At a glance it looks like that the costs attributed to non-Western immigrants in Germany are slightly higher which emphasizes that the somewhat less negative net transfers in the German sample are mainly due to differences in lower public transfers in Germany. This conclusion get even more support by the result that taxes and social contributions paid are consistently lower for non-Western immigrants in Germany than in Denmark, as can be seen by Figure 10.16 and Figure 10.17 in Chapter 10 in *Migrants, Work, and the Welfare State*.

So far the costs regarding public consumption for children of the studied persons have not been included. To study the importance of this factor the following two

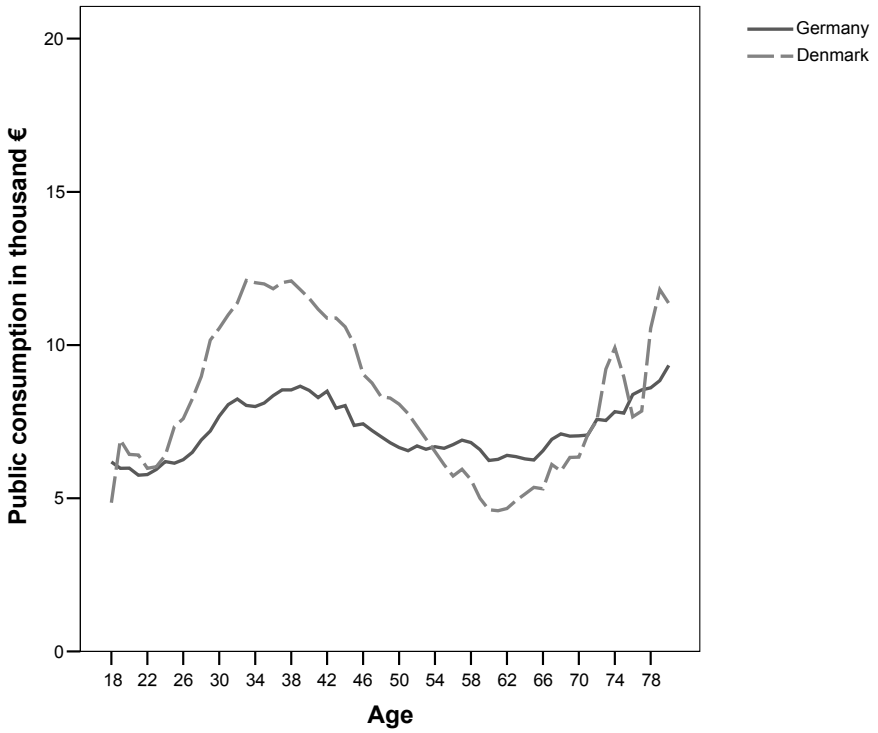
figures show distributions according to age when their costs are included. First the distributions of the net transfers are shown.

Figure 2.3. Net transfer to the first and second generation of non-Western immigrants in Denmark and Germany (net transfers for children are added to those of their parents); non-weighted values.



As can be seen the effect of having children is essential for the outcome of the net transfer variable, resulting in a more negative outcome of net transfers for non-Western immigrants in the Danish sample than in the German sample. This underlines the importance of the distribution of public consumption as it to a higher extent determines the net transfer for children. As regards the German sample public consumption entirely make up children's net transfer accounts. In the Danish calculations one also takes in account for (the small number of) children paying income taxes (but not indirect taxes) which then leads to a slightly upgrading on average.

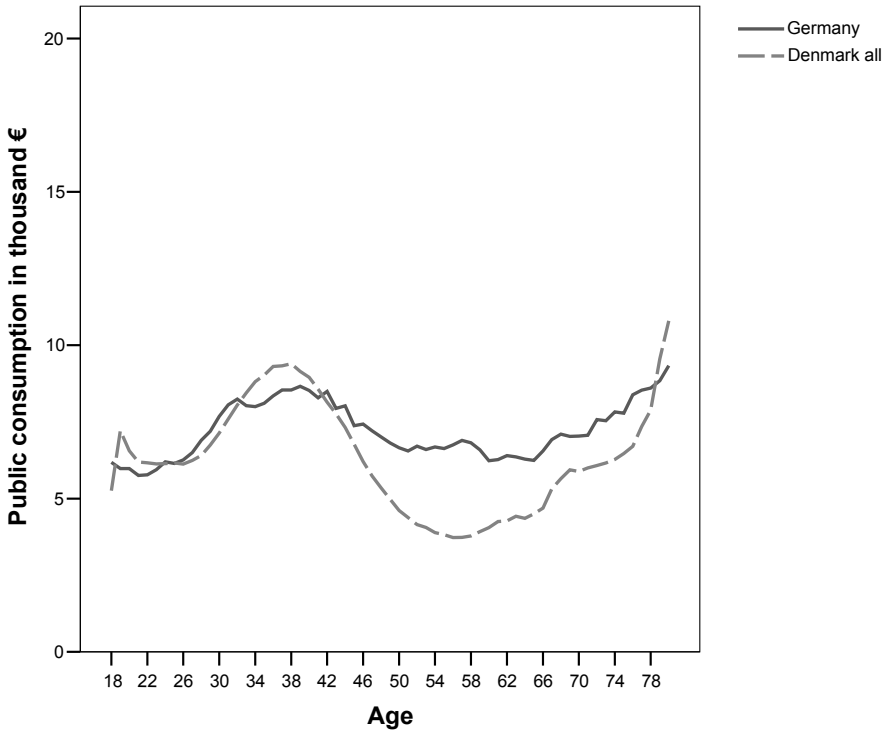
Figure 2.4. Public consumption for non-Western immigrants according to age (three years average); children's public consumption added to their parents; non-weighted values.



Focusing on public consumption, Figure 2.4 differs notably from Figure 2.2. The expenditures for individualized public consumption are now clearly higher in the Danish sample than they are in the German sample for those aged 24 to 54.[65] The higher outcome for non-Western immigrants in Denmark can be the result of several factors. First, as mentioned above one can assume that the data used by the Ministry of Finance in Denmark is more accurate. For example, as explained in the section about estimating the cost for education (see section 1.2.11) the data used in the calculations for Germany can be assumed to underreport the real cost of children's education as children with immigrant background may require educational support to a larger extent than native born children. Second the

[65] Here the costs for children are distributed based on family status similar to the calculation for the net transfer variable mentioned on page 55. This means that the costs are divided by two if the interview person is cohabiting; otherwise every child's share of public consumption is fully assigned to the interviewed person. This procedure is the reason why Figure 2.4 here and Figure 10.15 in Chapter 10 not exactly look the same. In the latter the costs are assigned irrespective of family status, which means that the cost for each child is added to the interviewed person to a full extent irrespective of marital status.

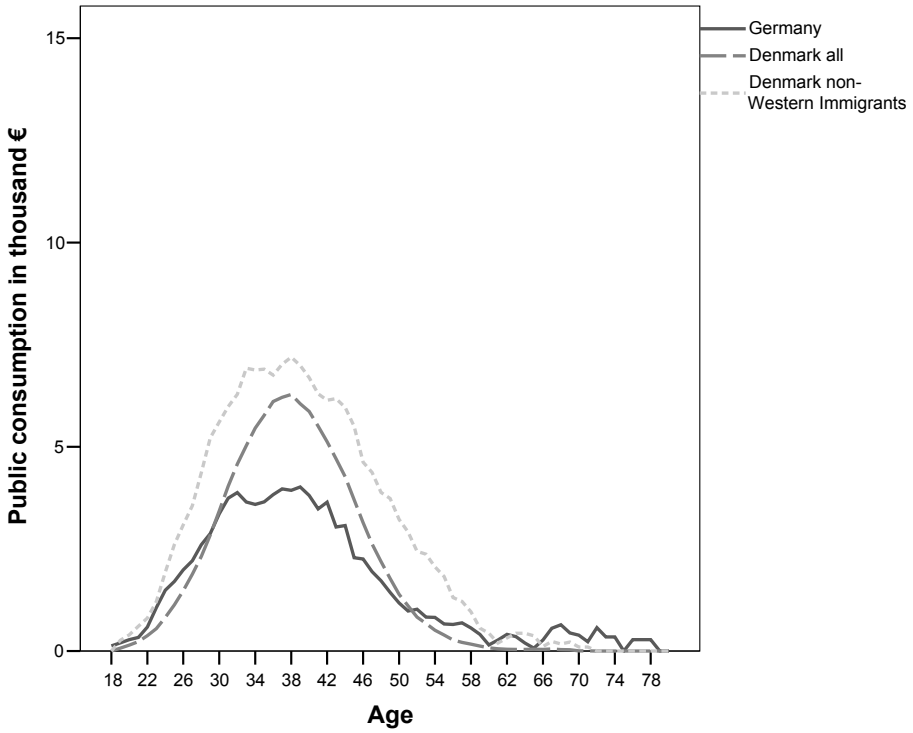
Figure 2.5. Public consumption for non-Western immigrants in Germany and for all in Denmark according to age (three years average); children's public consumption added to their parents; non-weighted values.



outcome could be a result of a generally more costly health and youth care system and/or more extensive contributions in education measures regarding children in Denmark, in particular for children with immigrant background. As our estimations regarding public consumption are mainly founded on aggregate data relating to the whole population in Germany, it can be of interest to compare the outcome with those relating to the whole population in Denmark, i.e. the entire Danish sample. This is shown in Figure 2.5. On average the calculated costs for the German sample are higher and with less distinct peak levels. This is probably mainly the result of less accurate data and to the more formal methods used in those calculations.

Here the costs for individuals up to the age of about 44 years fit rather well. On the other hand, the costs for those older than 46 years are, at the most, about 3 000 € smaller in the Danish estimations. This suggests that public consumption for children on the whole are not really much higher than what is the case in Germany as one otherwise should receive higher values in Denmark for parents in general, e.g. those between 24 – 54 years of age. However, one here has to

Figure 2.6. Public consumption for children to the studied persons according to age (three years average). Non-Western immigrants in Germany and Denmark and also all in Denmark.



take in account that the costs when children are excluded are lower than for non-Western immigrants as can be seen in Figure 10.5 in Chapter 10.

To study the importance of children's public consumption more in detail, Figure 2.6 compares public costs assigned to children in the German sample with those of non-Western origin in the Danish sample, but also for all in the Danish sample by including native Danes and those with immigrant background at the same time.

Overall the costs are considerably higher for the Danish sample in total and even higher for the subsample of non-Western immigrants compared to the immigrants in Germany.[66] This point to that public consumption for children is higher in Denmark in general, contradicting the impression received from Figure

[66] The higher values for the older people in the German sample are due to the low number of observations and the higher share of costs which are distributed as a lump sum.

2.5. At the same time costs for children from non-Western countries seem to be higher on average in Denmark. However, one should not confuse these outcomes to be costs for each child; instead these are average costs with respect to the number of children for each group of persons at respective year of age, i.e. including both those with and without children. As the average number of children is higher for non-Western immigrants than for native Danes this implies that for every year of age there are higher costs regarding public consumption for the group of non-Western immigrants. Accordingly, out from Figure 2.6 one cannot state that the costs regarding public consumption per child are higher for non-Western immigrants in Denmark than for native born Danes. On average the number of own children for persons between 18 and 50 years of age living in the household is about 1.35 children for non-Western immigrants and 0.89 children for all in the Danish sample.[67] It is important to be aware of this when interpreting the figures. It may be so that the cost for each child is more or less the same for those of non-Western origin and the entire Danish sample.

To summarize the information obtained from these figures regarding the calculation of individualized public consumption for non-Western immigrants the amounts distributed are in accordance with the estimation for Denmark when one is excluding the values for the children. When children are included the values are considerably lower for those aged 24 to 54 in the calculations for the German sample. Using the implications given by Figure 2.6 this result may be due to higher public costs for children in Denmark in general and to some extent due to the mere existence of more precise data, allowing for a more sensitive allocation of individualized public consumption for children in the Danish calculation.

All in all, these results reveal some uncertainty as regards the comparability in the estimation of individualized public consumption and thus the net transfer variable for non-Western immigrants in the two countries. The main problem is that public consumption for children of immigrants of non-Western origin could not be estimated in the German case as has been possible in the Danish estimations. If a more refined distribution had been possible to achieve, the amount that is distributed lump sum over all ages would have been smaller, allowing for more distinct peaks and troughs, i.e. a shape presumably rather comparable with that in Denmark.

One also has to bear in mind that the composition of non-Western immigrants in the *RFMS-G* data is not fully in accordance with the composition in the Law-data. Firstly the *RFMS-G* data is restricted to five major immigrant nationalities.

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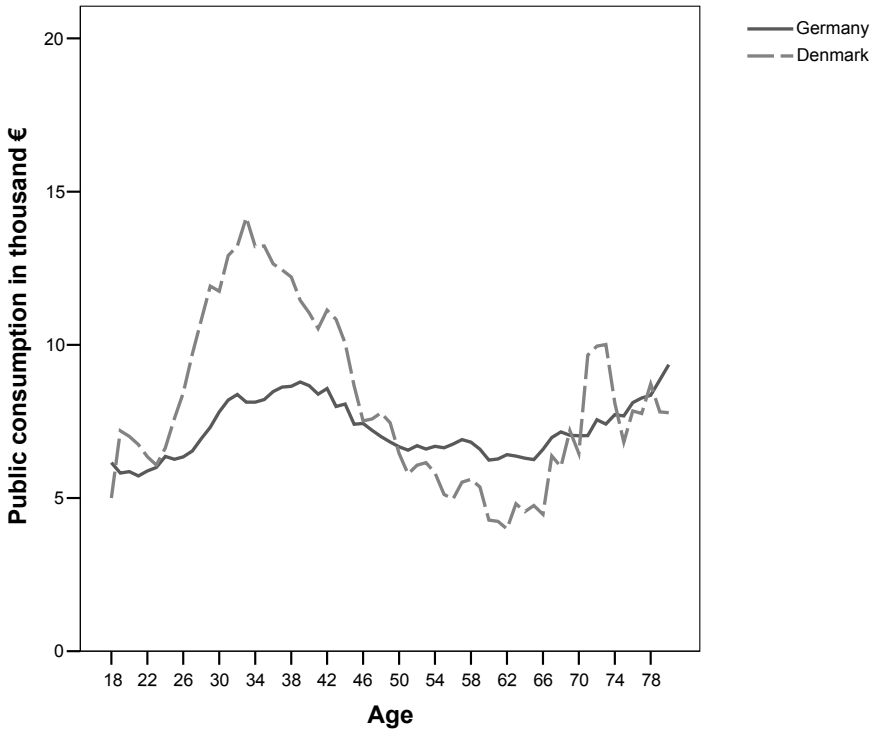
[67] The Danish data includes information about the number of children in the Law-data, but not how old these children are. In the German data, yet, one can find such information. On average interview persons between 18 and 50 years of age have 1.22 own children living in the household who are younger than 18 years.

Figure 2.7. Public consumption for first generation non-Western immigrants according to age (three years average); children's public consumption added to their parents; non-weighted values.



Secondly and probably more important, the data is also restricted by the stratification design in the survey as it is set to include approximately similar sized samples that origin from five different countries. To examine the impact of the first issue more in detail one can study the distribution of public consumption by only including immigrants from the same five countries in Denmark. This is shown in Figure 2.7.[68]

The figure now becomes more volatile for non-Western immigrants in Denmark compared to Figure 2.4, but the picture as a whole is similar, except for the higher peak for those around 34 years of age.

[68] However, here it is only possible to look at first generation immigrants as one is lacking information about country of origin of the parents for second generation immigrants in the Law-data.

2.2.1. Implication for the Results in Chapter 10

One question raised by this analysis is what the discrepancies in determination of public consumption imply for the results shown in Chapter 10. A qualified guess would be that coefficient estimations regarding age and children as explanatory variables are rather sensitive to differences in public consumption. To examine this effect in more detail, re-estimations of the regression models as shown previously in Table 10.12 and Table 10.13 in Chapter 10 are conducted, see Table 2.10 and Table 2.11. The difference is that the dependent variable here is net transfer without public consumption, thus allowing for a comparison of covariate effects with and without public consumption being part of the dependent variable.[69]

Table 2.10. Regression estimates (Ordinary Least Squares) with *net transfer without public consumption* in 2000 as the dependent variable (in thousand Euro). First generation non-Western immigrants living in Denmark from the same countries as included in the German sample. Corresponding to Table 10.12.

Variables	(1)	(2)	(3)
Constant	-2.979 (0.882)***	-0.490 (0.827)	0.362 (0.635)
Female	-1.414 (0.235)***	-1.482 (0.220)***	-0.556 (0.170)***
Age	-0.129 (0.443)***	-0.194 (0.042)***	-0.272 (0.032)***
Age^2	0.001 (0.0005)***	0.0018 (0.0005)***	0.0026 (0.004)***
Family status			
Single, no children	*reference*	*reference*	*reference*
Single with children	-4.009 (0.615)***	-3.166 (0.577)***	-3.818 (0.443)***
Married/cohabiting, no children	0.514 (0.340)	0.625 (0.319)**	0.443 (0.245)**
Married/cohabiting with children	-2.069 (0.304)***	-1.349 (0.285)***	-1.770 (0.218)***
Employment rate	0.266 (0.003)***		
Earnings		0.770 (0.007)***	
Total labor income			0.773 (0.005)***
Number of observations	2739	2739	2739
R^2 (adj)	0.788	0.814	0.891

Notes: Numbers in parentheses are standard errors. *** denotes significance at the 1 percent level of confidence, ** denotes significance at the 5 percent level of confidence, * denotes significance at the 10 percent level of confidence.

When comparing these estimates with those in Chapter 10 it is easily seen that the coefficient estimates for family status now become much smaller for both countries. Above all, the estimates regarding family status for first generation

[69] The effect of the explaining variables on public consumption regarding coefficient estimates can accordingly be calculated as the difference between the estimates with net transfer as the dependent variable in Table 10.12 and 10.13 in Chapter 10 and those estimates shown here. However, this does not hold for the standard deviations.

non-Western immigrants in Denmark are now more in accordance with those in Germany. The smaller differences between the countries for the family status dummies highlight the importance of the more accentuated distribution of public consumption on (non-Western immigrants) families with children in the Danish estimation. The gender dummy variable is smaller in size in all cases (less negative for Denmark and less positive for Germany), but the significant difference in sign continues to hold. The enduring differences in the gender variable and both age variables thus confirm the conclusions made in Chapter 10, emphasizing the importance that the two countries have different social security systems.

Table 2.11. Regression estimates (Ordinary Least Squares) with *net transfer without public consumption* in 2002 as the dependent variable (in thousand Euro). First generation non-Western immigrants living in Germany. Corresponding to Table 10.13.

Variables	(1)	(2)	(3)
Constant	-10.882 (0.989)***	-6.785 (0.907)***	-4.873 (0.648)***
Female	1.546 (0.214)***	1.378 (0.194)***	2.644 (0.140)***
Age	0.340 (0.050)***	0.281 (0.046)***	0.109 (0.033)***
Age^2	-0.0039 (0.0006)***	-0.0038 (0.0005)***	-0.0020 (0.0004)***
Family status			
Single, no children	*reference*	*reference*	*reference*
Single with children	-5.031 (0.575)***	-5.234 (0.524)***	-5.032 (0.374)***
Married/cohabiting, no children	0.166 (0.304)	0.202 (0.277)	0.108 (0.198)
Married/cohabiting with children	-2.656 (0.279)***	-3.601 (0.254)***	-3.316 (0.181)***
Employment rate	0.178 (0.002)***		
Earnings		0.581 (0.007)***	
Total labor income			0.606 (0.004)***
Number of observations	3927	3952	3952
R^2 (adj)	0.6285	0.629	0.841

Notes: Numbers in parentheses are standard errors. *** denotes significance at the 1 percent level of confidence, ** denotes significance at the 5 percent level of confidence, * denotes significance at the 10 percent level of confidence. The lower number of observations in column (1) than in (2) and (3) is due to the determination of the employment rate.

This finding also receives some support when looking at Figure 10.4 (for Denmark) and 10.13 (for the German sample) in Chapter 10 where the distribution of transfer payments over age is displayed. The distribution in the German case is more alike that found for native Danes (but also Western immigrants) than it is for the transfers of non-Western immigrants in Denmark.

Realizing that Danes (and Western immigrants) to a higher extent are employed, public transfers to them are more responsive to labor market attachment.[70]

2.2.2. Conclusion

For the study of net transfer in the two countries differences in the estimations method regarding the amount of public consumption have a large impact. Unfortunately, it is not possible to exactly determine what is due to differences in the estimation procedure on the one hand and, on the other hand, what is due to ”real” differences in individualized public consumption between Denmark and Germany. However, the analysis presented above leads us to conclude that more refined data regarding public consumption would make the estimation for Germany converge rather than diverge to the estimations found for Denmark. To make a statement about to what extent this really is the case more comparative studies of the two countries' public accounts are needed. When excluding public consumption, the effect of the independent variables on net transfer as seen in the regression estimates as shown above changes compared with those in Chapter 10. The most noteworthy changes are that the coefficient estimates concerning children become much smaller when excluding public consumption. All in all, there do not seem to appear any reasons to reject the provided explanations regarding differences in net transfer given in Chapter 10.

2.3. Control of the Calculations of Transfers and Taxes

In contrast to the estimations regarding public consumption transfers and taxes are less schematic, but to a higher extent individual. The calculations rely on the respondent's answers concerning received benefits and income and not on allocated mean values. Furthermore, transfers are rather easy to assign to the interviewed persons as no extensive calculations are needed. This is due to the demarcation made that only those persons are included in the calculations who answered to all individual income questions. However, the estimated values regarding income taxes are more sensitive to the calculation methods utilized.

[70] The employment rate that is used in the regression estimates above and in Chapter 10 is based on the answers regarding the number of actual hours worked the week before they were interviewed. Those who worked 40 or more hours are assigned an employment rate of 100 percent. Those who worked less get the fraction of their working hours divided by 40 assigned as employment rate. The break point of 40 hours is chosen as the distribution of working hours shows a clearly peak at that level. The determination here is different from the way it is calculated in the Danish data, see the explanation in Chapter 10, section 10.3.1 regarding that issue. This may in some way contribute to the difference in average employment rate for the two countries. For persons included in the regression samples above the average for Germany is 39.84 percent (standard deviation 45.16) and 32.49 percent (42.09) for Denmark.

This is also the case for the estimations regarding indirect taxes, but this issue will not be dealt with any further in this analysis.

2.3.1. Transfers

Even if the benefit amounts are easy to determine, there is one element of uncertainty when comparing the values for Germany and Denmark. This ambiguity is due to different handling of family allowances. As stated in section 1.2.8, family allowances and similar subsidies are in the Danish estimations assigned to the mother when she is married or cohabiting. In the case of single parents, the subsidies go to the parent who has custody of the child (see Wadensjö & Orrje [2002], p. 105). Because of the interview design in the *RFMS-G* data it is not possible to make such a distinction in the German case, which implicates that received family allowances recurrently are included in cohabiting men's net accounts. To study how this may affect the results of regression estimations, they are re-estimated by setting the values for received public subsidies for cohabiting men to zero. The according results are shown in Table 2.12.

Table 2.12. Regression estimates (Ordinary Least Squares) with net transfer in 2002 for first generation non-Western immigrants living in Germany (in thousand Euro) as the dependent variable. Here values regarding family subsidies for cohabiting men are set to zero. Corresponding to Table 10.13.

Variables	(1)	(2)	(3)
Constant	-15.916 (1.070)***	-11.654 (1.011)***	-9.705 (0.777)***
Female	0.474 (0.231)**	0.213 (0.216)	1.508 (0.168)***
Age	0.350 (0.055)***	0.301 (0.051)***	0.127 (0.040)***
Age^2	-0.0044 (0.0006)***	-0.0045 (0.0006)***	-0.0026 (0.0004)***
Family status			
Single, no children	*reference*	*reference*	*reference*
Single with children	-14.812 (0.622)***	-14.987 (0.584)***	-14.778 (0.448)***
Married/cohabiting, no children	0.609 (0.328)*	0.659 (0.309)*	0.564 (0.237)**
Married/cohabiting with children	-4.763 (0.302)***	-5.772 (0.283)***	-5.478 (0.217)***
Employment rate	0.191 (0.003)***		
Earnings		0.611 (0.008)***	
Total labor income			0.633 (0.005)***
Number of observations	3927	3952	3952
R^2 (adj)	0.658	0.658	0.821

Notes: Numbers in parentheses are standard errors. *** denotes significance at the 1 percent level of confidence, ** denotes significance at the 5 percent level of confidence, * denotes significance at the 10 percent level of confidence.

The coefficient estimates are rather similar to those in Table 10.13 in Chapter 10. The main difference is the lower estimate for the female dummy. This is not surprising as cohabiting women get transfers for children assigned, but cohabiting men do not. Yet the estimates are still positive, in column 1 and 3 even significantly positive. Taking into account that the transfers to some extent may include public transfers that are not directly linked to children, one can presume that the ”correct” coefficient estimate for the female dummy lies somewhat above the here presented value.[71] Thus, changing the estimation does not lead to a substantial change of the result that there is a positive net transfer effect for women when controlling for age, family status and linkage to the labor market.

Table 2.13. Public transfers per year in Euro for married/cohabiting persons included. Men.

Variable	Num. of obs.	Mean	Std. Dev.	Min	Max
Pensions	1497	915.90	3384.96	0	36000
Unemployment allowance	1497	1363.74	3299.73	0	18000
Family subsidies and other transfers	1497	1836.75	2526.94	0	15000
Social assistance*	1497	563.72	1577.47	0	20700
Housing allowance*	1497	163.84	528.20	0	6666

Table 2.14. Public transfers per year in Euro for married/cohabiting persons included. Women.

Variable	Num. of obs.	Mean	Std. Dev.	Min	Max
Pensions	1633	189.34	1240.81	0	21600
Unemployment allowance	1633	334.61	1621.81	0	25200
Family subsidies and other transfers	1633	2160.01	2780.14	0	20400
Social assistance*	1633	504.93	1588.14	0	16200
Housing allowance*	1633	209.19	669.15	0	8400

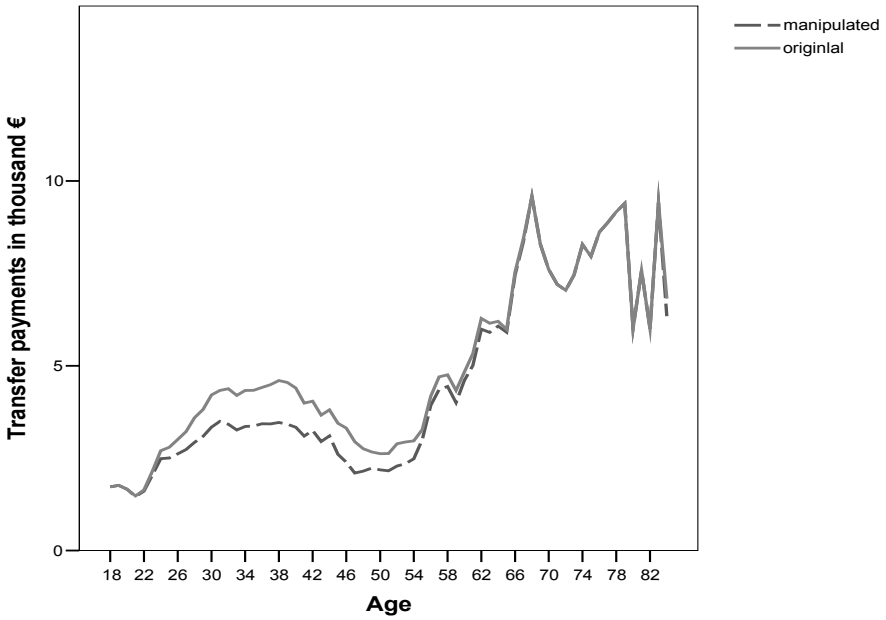
Note: * indicates that the amount of subsidies to the household is divided by the number of adults in the household.

The amounts regarding family subsidies (plus other subsidies) are relatively large in size compared to other forms of transfer payments. This is shown in the

[71] As was said before the respondents were asked to state the amount of all individual received public subsidies, which explicitly includes family allowances and education allowances, but excludes subsidies by social insurance system (so as pensions and unemployment benefits) and social assistance to the household (”Sozialhilfe” and ”Wohngeld”).

above two tables stating the mean values for the four parts which contribute to what make up public transfer payments. Here only persons who are married or cohabiting are included to clarify the size of the amount that is excluded for men in the regression showed above, i.e. the post titled ”Family subsidies and other transfers”.

Figure 2.8. Transfer payment to the first generation of non-Western immigrants in Germany (three years average); non-weighted values.



Excluding such amounts for men leads accordingly to a downward change in the distribution of transfer payment over age. This becomes evident when comparing Figure 2.8, which shows the transfers as in Figure 10.13 in Chapter 10 and the adjusted figures when payments regarding family allowances for cohabiting men are set to zero. However, such an adjustment does not lead to a severe change in the general shape of the figure. That means at the same time that the similarity with respect to the shape of the public transfers for native born Danes (in Denmark) remains, i.e. that the more distinct labor market relation of public transfers in Germany still is distinguishable in the Figure.

2.3.2. Income Taxes

The main problem in calculating taxes is that these amounts have to be estimated by making some assumptions about the actual nature of the incomes, not at last the assumption that the different incomes collected the month before the interview are recurring during the whole year. This assumption is needed to

determine the tax rate as the income tax system is progressive and determined on a yearly basis. Furthermore, one has to distinguish between different forms of income as they are handled differently within the German tax legislation, where some incomes do not underlie taxation, but may cause higher income taxes for the taxable income, i.e. when the so-called ”Progressionsvorbehalt” applies. Furthermore, as the German tax legislation allows joint taxation, this requires information about both spouses' incomes to allow for an accurate calculation of tax rates for the respondent's income.

As the process of determining the tax payments (and the social security contributions) are rather extensive, there is no room to examine all the steps involved. Therefore the discussion here mainly concentrates on the effect on taxation that is due to the used method of determining joint taxation of spouses. However, as a means of testing the implications of made assumptions and estimation procedure we will start by comparing the sum of tax payments and social security contributions for those of the interviewed persons who lived in single adult households. That can be interesting as one here has the opportunity to compare the estimated values with those given by the respondents themselves, determined by their answers on the question regarding the household's gross and net income. The difference between the gross and the net income then operate as a measure of the sum of their actual tax payments and social security contributions. By means of comparing these two separately calculated tax payments, one gets an indicator for the reliability of the used estimation process, at least as regards single adult households.

Below different mean values for respective estimation process are shown. To make the two valuations of payments more comparable the estimated values are corrected for the employers' share of social security contribution. Regularly a salary statement explicitly denote the wage before the employee's share of subtraction for social security and tax payments as the gross amount and accordingly after their deduction the net amount. The shares paid by employers show up as a separate item, i.e. they are not included in the gross amount. In particular, employer's payment to accident insurances are not shown at all in the employee's pay slip.

Table 2.15. Income taxes and social security contributions per year in Euro for interview person in single adult households that have answered to questions regarding the households gross and net income, men.

Variable	Num. of obs.	Mean	Std. Dev.	Min	Max
Estimated values	407	4395	6087	0	32996
Difference between gross and net income according to the interview persons answers	407	4138	6399	0	60000

Note: Social security contributions do not include any payments done by employers in the estimated values.

Table 2.16. Income taxes and social security contributions per year in Euro for interview person in single adult households that have answered to questions regarding the households gross and net income, women.

Variable	Num. of obs.	Mean	Std. Dev.	Min	Max
Estimated values	319	2933	4843	0	37060
Difference between gross and net income according to the interview persons answers	319	3026	5894	0	64212

Note: Social security contributions do not include any payments done by employers in the estimated values.

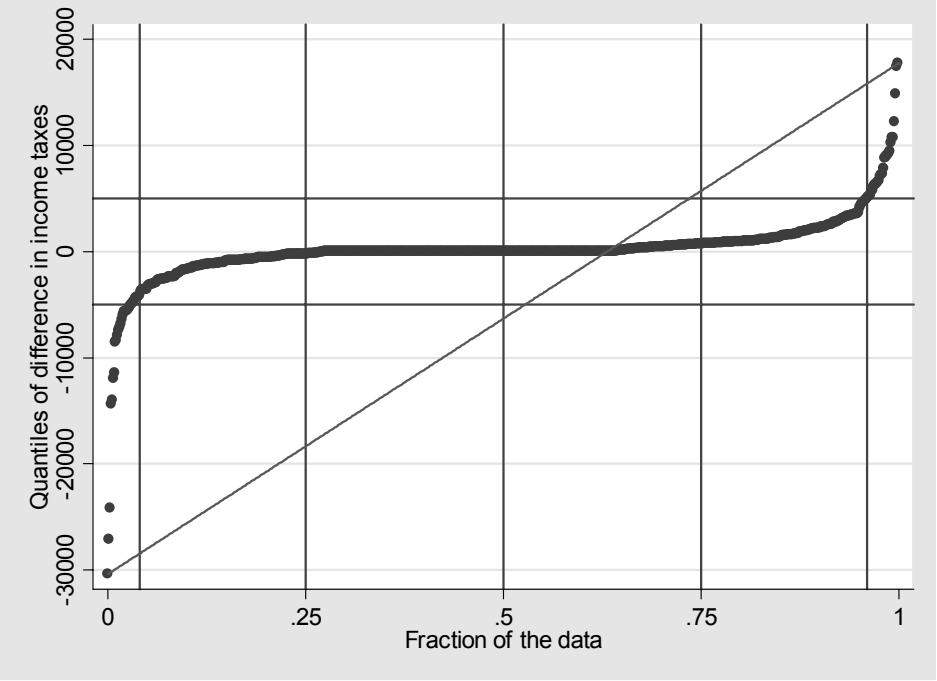
For men the estimated values are higher and for women lower than those stipulated by using the differences between the households gross and net income according to their respective mean values.[72] Still the differences do not seem to be very different in size. To examine the overall differences in values for the two estimation approaches, the following figure shows differences in taxes and social security contributions between the estimated values and those found as the difference between gross and net income. The latter one will be denoted as the ”real values” henceforth. Figure 2.9 is a so-called quantile plot which has the virtue of depicting all observations so that also outliers are identified.

Figure 2.9 states that the differences are close to zero in about 70 percent of the observations. This is to a high extent explained by the rather large number of people who have zero values assigned, no matter which of the two estimation methods is applied. For men there are about 42 percent and for women about 45 percent with zero values in both cases and accordingly also with zero values regarding the in-between differences for the outcome of the two estimation approaches.

About 92 percent have less than 5000 € a year in difference, where the distribution is rather symmetric to the left and to the right of the median value. This indicates that the assigned values are not deviating in any systematic way. So, all in all the calculated values for income taxes and contributions seem to work reasonably well. Similar conclusions can be drawn from Figure 2.10 that compares these two alternative measures of payments distributed over total labor income.

[72] There were 171 men who got the value zero assigned regarding their estimated payments, corresponding to 203 persons when looking at the differences between gross and net income. For women the numbers are 142 and 166 respectively. The maximal value for men (60 000 €) and for women (64 212 €) regarding the differences between their gross and net incomes are far above the second highest values. For men the second highest value is 33 600 € and (by chance) for women it is also 33 600 €. If one exclude these outliers the mean values are 4 000 € and 2 834 €, respectively.

Figure 2.9. Distribution of differences in estimation of Income taxes and social security contributions for interviewed persons in single headed households that have answered to questions regarding the households gross and net income.



The estimated values lie in the higher range of the distribution of the real values, but the level of payments over labor income is similar.

As can be seen here are there some observations regarding the real values where the interviewed persons reported no payments regarding taxes and social security contributions. The accuracy of such answers may be questioned, in particular when set in relation to the received amount of gross labor income. This may to some extent be the result of confusion what the term gross and net income is about, or may just be a deliberately wrong answer by some of the interviewed persons. All in all 34 person reported zero real contributions while earning a total yearly labor income of 8 000 € or more (there were 314 interviewed persons in this subsample who have total labor income above this level). The cut off value of 8 000 € determines the lower bound in total labor income where the estimated values regarding the sum of income taxes and social security contributions are exclusively positive.[73]

[73] When looking at the labor situation for these 34 persons only 2 were self-employed while the others were employees. That implies that reporting zero contributions is not

Figure 2.10. Income taxes and social security contributions according to labor income for interview person in single headed households that have answered to questions regarding the households gross and net income. Estimated and real values in Euro. Average according to labor income.

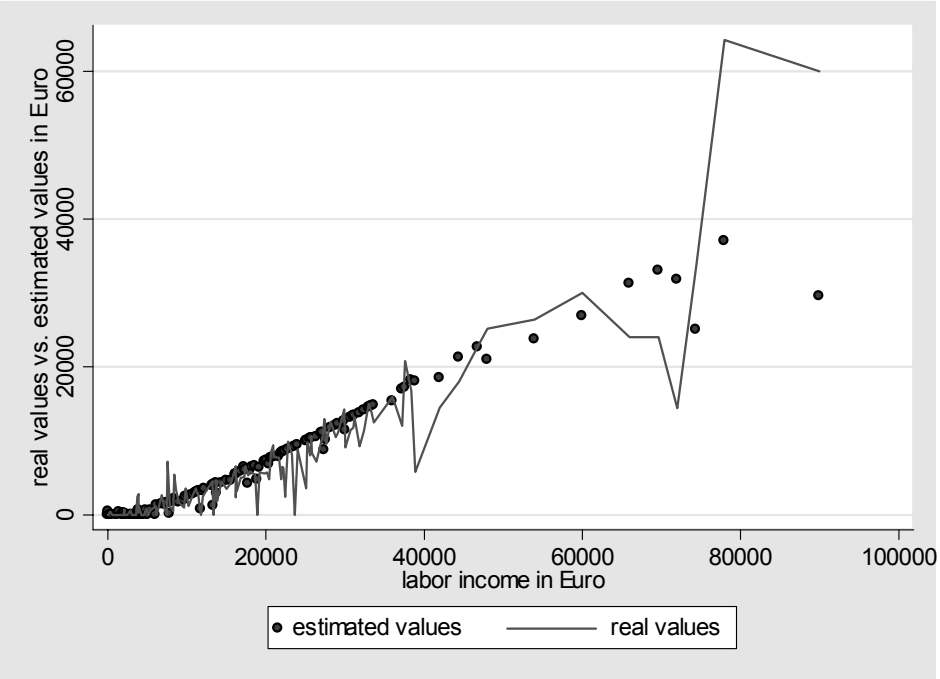


Figure 2.11 shows that the average values according to age are clearly associated; also those persons at the age above 60 are attributed values that can be said to be in accordance with the real values. All in all, these results add some evidence that the calculated values for individualized income taxes and social security contributions are rather reasonable.

Now the item raised in the beginning of this section will be focused on, i.e. the joint taxation for husbands. As outlined above, the estimated values regarding paid income taxes and social contributions are approximately in accordance with the real payments by the interviewed persons when individualized taxation is applied. However, that result taken by itself does not guarantee that the estimated values for the other interviewed persons are equally well suited, especially for those interviewed persons who were married. So the intention here is to test how sensible the results are to joint taxation of married couples' income. As a starting point it may be interesting to look at how the size of the

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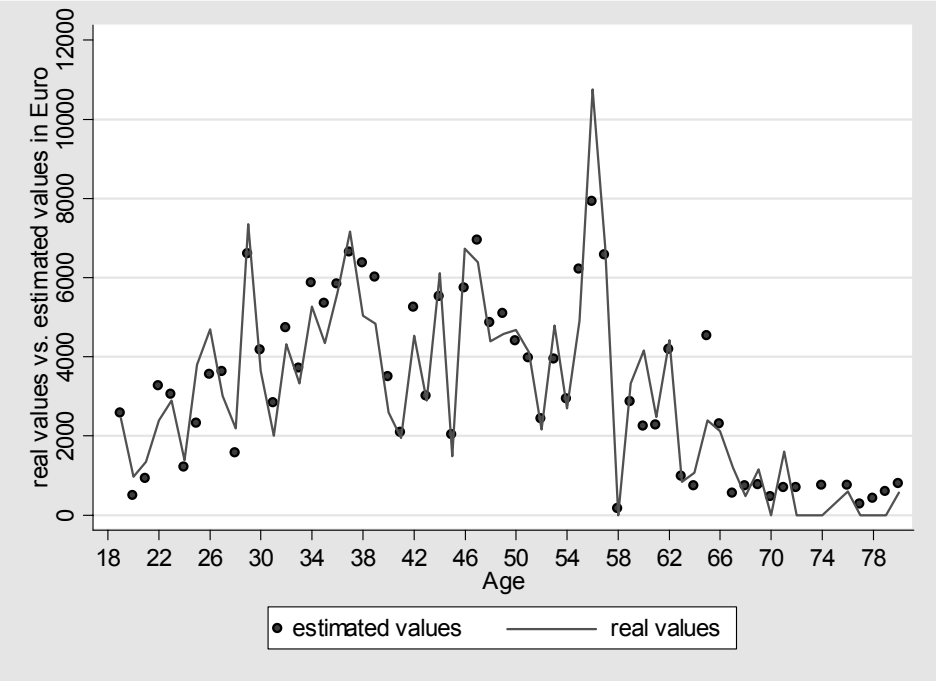
caused by the special conditions for self-employed regarding their tax and social security contributions, described in section 1.4.

Figure 2.11. Income taxes and social security contributions according to the age of the interview person in single headed households that have answered to questions regarding the household's gross and net income. Estimated and real values in Euro. Averages according to age.



different parts of social security contributions and taxes relate to each other, by looking at men and women separately.

Table 2.17 and Table 2.18 are interesting for two reasons: First, the values regarding income taxes on labor income are higher for women when one applies joint taxation, contrasting the rather extensive reduction when looking at men's income taxes. This result is in accordance with what could be expected. Assuming that married women on average have lower labor incomes than their husbands, joint taxation will implicitly lead to a higher taxation of the women's income. The difference on average is rather small for women, however, which is a result of their overall lower incomes. A second interesting aspect is that the estimated income taxes are on average smaller than the estimated social security contributions. This is even more evident in the case of women. Own social security contributions are mandatory when the wage income from employment lies above a threshold of 325 € per month, which can be compared with the threshold income for income taxes of 7 235 € per year (corresponding to about 603 € per month) in the case of individualized taxation. This implies that lower incomes frequently result in tax payments lower than social security

Table 2.17. Taxes and social security contribution per year in Euro for all persons included. Men.

Variable	Num. of obs.	Mean	Std. Dev.	Min	Max
Income taxes regarding pensions and other income*	2217	27.61	311.36	0	8400
Solidarity tax contribution (Solidaritätszuschlag)	2217	105.84	206.08	0	3781.59
Indirect taxes	2217	1290.34	771.71	60.26	7914.41
Social security contribution	2217	2588.31	2932.73	0	10302.75
Social security contribution with employers share included	2217	4886.10	5525.94	0	20605.50
Social security contribution of pensioners	2217	60.56	240.14		2754
Income taxes when individualized taxed	2217	2592.72	4352.03		72558
Income taxes when joint taxation is used	2217	1938.38	3661.60		63956.25

Note: * Other income is defined as interest payments, capital assets and rental fees.

Table 2.18. Taxes and social security contribution per year in Euro for all persons included. Women.

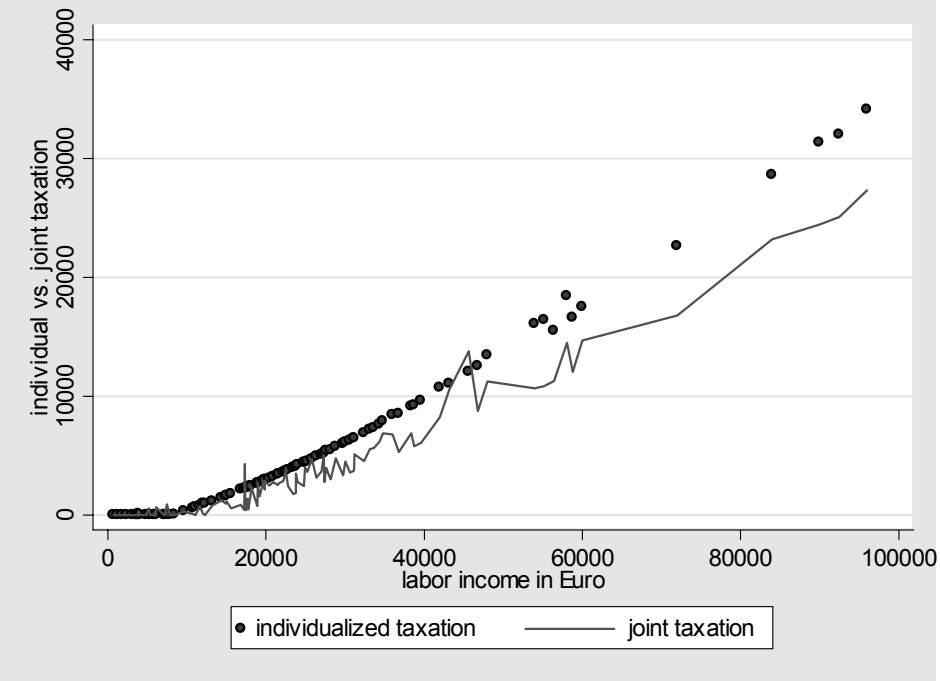
Variable	Num. of obs.	Mean	Std. Dev.	Min	Max
Income taxes regarding pensions and other income*	2271	6.41	108.23	0	3240
Solidarity tax contribution	2271	43.96	117.03	0	1732.59
Indirect taxes	2271	1312.35	683.85	0	8732.02
Social security contribution	2271	1116.54	1972.04	0	10302.75
Social security contribution with employers share included	2271	2128.84	3731.82	0	20605.50
Social security contribution of pensioners	2271	30.46	142.05	0	1652.40
Income taxes on labor income when individualized taxed	2271	793.49	2147.78	0	31338
Income taxes on labor income when joint taxation is used	2271	835.51	2106.35	0	31338

Note: * Other income is defined as interest payments, capital assets and rental fees.

contributions. Moreover, these contributions are not directly affected by the income of the spouse.

In the following two figures the distribution of the estimated income taxes on labor income versus labor income is shown, i.e. both the individualized and the joint taxation approach are compared for men and women respectively.

Figure 2.12. Income taxes on labor income according to labor income. Estimations regarding both individualized and joint taxation, married men. Averages according to labor income.

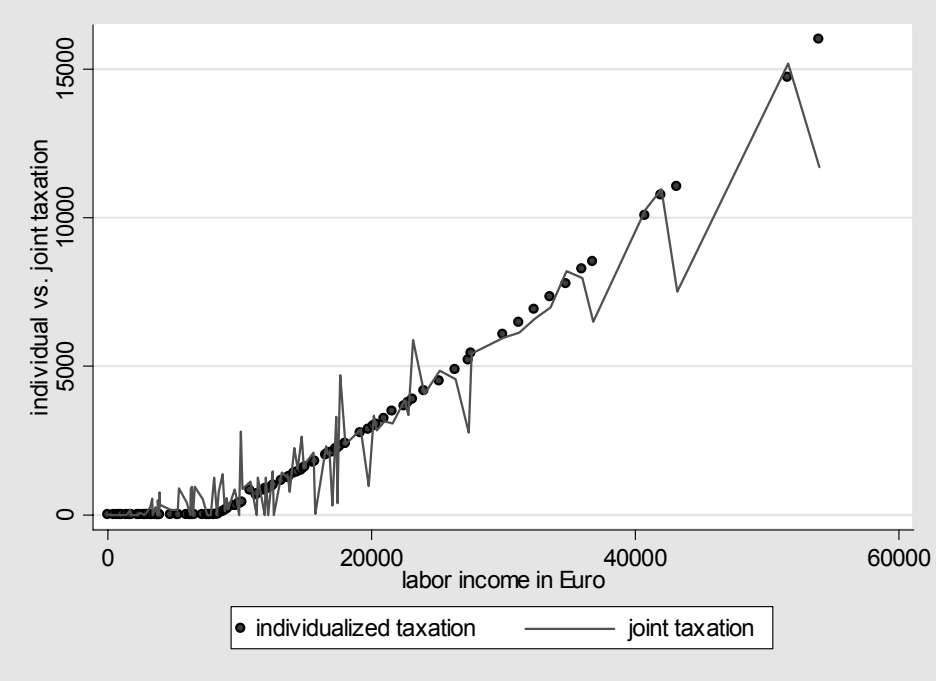


The figures show that for men tax payments are in general lower when joint taxation is used, this holds over the whole range of labor income. Women with low labor income are frequently paying more in taxes than if taxed on their own. The values regarding joint taxation are more volatile which reflects the differences in total income of both spouses and accordingly differences in taxation rates.

When using the joint taxation approach it is not possible (or at least not as simple) to test the results against the answers regarding households' gross and net incomes. As the answers regarding the spouse's income can be assumed to lack in precision the estimated values using the joint taxation can also be assumed to be less accurate.

Provided that the results of individualized taxation estimation are of acceptable quality they can be used as a benchmark for how sensitive the results in Chapter 10 (as shown in Table 10.13) are to the chosen taxation method. For this matter the regressions are re-estimated by using individual taxation on labor income instead of the joint taxation approach. One should thereby recall that this only affects the interviewed persons who are married and stated their spouse's income. Applying individual taxation will result in men paying more taxes on

Figure 2.13. Income taxes on labor income according to labor income. Estimations regarding both individualized and joint taxation, married women. Averages according to labor income.



average, which improve their net income variable relative to women, as those pay a bit less on average.

As expected the coefficient estimates for women are now lower than in Table 10.13. Accordingly, also the estimates for married/cohabiting persons with and without children are also more positive (or less negative) than the reference group of single persons. On the other hand the coefficient estimates for single persons with children are now less negative. This outcome is a bit confusing, but the differences are rather small. Overall, this implies that the joint taxation approach has only a small impact on the attained coefficient estimations. The respective dummy variables for women are still significantly positive compared to significantly negative estimates for women in the Danish case as shown in Table 10.12 in Chapter 10. Furthermore, the age variables are more or less unaffected. The age indicators resemble familiar wage growth pattern and point to a higher labor market connection of net transfer outcomes for persons of non-Western origin in Germany compared to what is the case in Denmark.

Table 2.19. Regression estimates (Ordinary Least Squares) with net transfer in 2002 for first generation non-Western immigrants living in Germany (in thousand Euro) as the dependent variable. Taxes on labor income are estimated independent of spouses income. Corresponding to Table 10.13.

Variables	(1)	(2)	(3)
Constant	-15.898 (1.142)***	-11.465 (1.076)***	-9.350 (0.816)***
Female	1.315 (0.247)***	1.072 (0.230)***	2.469 (0.176)*
Age	0.316 (0.058)***	0.261 (0.055)***	0.070 (0.416)***
Age^2	-0.0040 (0.0007)***	-0.0040 (0.0006)***	-0.0020 (0.0005)***
Family status			
Single, no children	*reference*	*reference*	*reference*
Single with children	-15.093 (0.664)***	-15.280 (0.622)***	-15.058 (0.471)***
Married/cohabiting, no children	0.822 (0.351)**	0.867 (0.329)***	0.764 (0.249)***
Married/cohabiting with children	-5.657 (0.322)***	-6.706 (0.301)***	-6.392 (0.228)***
Employment rate	0.197 (0.003)***		
Earnings		0.634 (0.009)***	
Total labor income			0.663 (0.006)***
Number of observations	3927	3952	3952
R^2 (adj)	0.642	0.682	0.817

Notes: Numbers in parentheses are standard errors. *** denotes significance at the 1 percent level of confidence, ** denotes significance at the 5 percent level of confidence, * denotes significance at the 10 percent level of confidence.

2.4. Impact of (Non-)weighting

The last issue brought up in this sensitivity analysis concerns the importance of the weighting procedure connected to the data collecting process. As mentioned before, in this study of the German sample but to a large extent also in Chapter 10, each observation is given the same weight and no correction is made for the size of the immigrant groups in the German population.[74] In this section the impact of this procedure on the regression estimates as shown in Table 10.13 is discussed. More clearly, here the weighting variable according to the ”Data Description”, p. 424 in the Appendix to *Migrants, Work, and the Welfare State* is used. However, the weighting variable is manipulated to some extent, by that aiming to take account of the constrained sample as used in Chapter 10.[75] The so

[74] The expression ”the same weight” refers to the sample, i.e. each observation in the sample has equal impact in the analysis. Nevertheless, to be part of the sample, different weighting procedures have been applied, see ”Data Description” in *Migrants, Work, and the Welfare State.*

[75] That is done by the following algorithm:

```
generate weightadjusted = weight*(4488/5669)*(1472/1181)    if fa01==1
```

Table 2.20. Weights in the *RFMS-G* and the reduced sample used in Chapter 10.

Country	*Weight*	*Weight adjusted*
Turkey	2.08	2.05
Former Yugoslavia	1.74	1.82
Poland	0.49	0.47
Iran	0.18	0.18
Lebanon	0.07	0.07

estimated values are rather alike the original weighting variable as can be seen by Table 2.20.

By using this adjusted weight variable one can compare the mean values regarding net transfers to the public sector for immigrants from all countries, as was done in Table 10.3 in Chapter 10.

Table 2.21. Net transfer to the public sector in Germany in 2002 per individual in thousand Euro; children's net transfers added to those of their parents. Weighted and non-weighted values.

Group	First generation	Second generation	First and second generation
All, not weighted	-5.107	-1.668	-4.744
All, weighted	-4.422	-2.571	-4.234

Note: The weighting is done by multiplication of the net transfer with the adjusted weighting index.

The weighting procedure leads to a change in mean-values. The changes are, however, rather small. It indicates that the weighting is not of any substantial importance for the outcome of the analysis. The result does not change remarkably when looking separately on women and men, see Table 2.22 and Table 2.23. The pattern is similar when studying net transfer without adding children's net transfers to their parents (not shown here).

```
replace weightadjusted  = weight*(4488/5669)*(1013/768)     if fa01==2
replace weightadjusted  = weight*(4488/5669)*(1221/1006)    if fa01==3
replace weightadjusted  = weight*(4488/5669)*(1010/779)     if fa01==4
replace weightadjusted  = weight*(4488/5669)*(953/754)      if fa01==5
```

"Weight" is the weighting variable as described on p. 424; fa01 is the variable that relates to citizenship, where fa01 is equal to 1 for Turkey, 2 for Former Yugoslavia, 3 for Poland, 4 for Iran and 5 for Lebanon. 4488 is the total number of observations in the restricted sample, 5669 is the number in the *RFMS-G* sample. 1472 is the number of interviewed persons from Turkey in the *RFMS-G* sample, corresponding to 1181 in the restricted sample. Similarly, the other numbers are: for Former Yugoslavia 1013 vs. 768, for Poland 1221 vs. 1006, for Iran 1010 vs. 779 and for Lebanon 953 vs. 754.

Table 2.22. Net transfer to the public sector in Germany in 2002 per individual in thousand Euro; children's net transfers added to those of their parents. Weighted and non-weighted values. Men.

Group	First generation	Second generation	First and second generation
All, not weighted	-3.024	-0.263	-2.724
All, weighted	-2.820	-0.432	-2.561

Table 2.23. Net transfer to the public sector in Germany in 2002 per individual in thousand Euro; children's net transfers added to those of their parents. Weighted and non-weighted values. Women.

Group	First generation	Second generation	First and second generation
All, not weighted	-7.140	-3.064	-6.716
All, weighted	-5.983	-4.692	-5.867

The largest change is found for female second generation immigrants. Applying the weighting approach results in less negative values for the first generation immigrants, while the effect for the second generation is the opposite. Both changes cause smaller differences between first and second generation immigrants. For men the values for second generation immigrants are lower (more negative), contradicting the result for first generation immigrants where the change goes in the opposite direction. Nevertheless, the changes are less pronounced than for women.

Comparing the coefficient estimates from regressions estimations using the weighting approach and the non-weighted as shown in Table 2.19 clarify that they are rather consistent.[76] The estimates are slightly different, but the general pattern is similar.

This result should not be used to draw the conclusion that weighting is redundant in regression estimations in general. But the results above indicate that avoiding a weighting procedure does not lead to spurious coefficient estimations, at least not in this particular regression model. However, this effect may to some extent be caused by the rather high amount of lump sum distribution of public consumption to the interview persons. As discussed above, the values regarding public consumption are less individualized compared to the corresponding values assigned in the Danish estimations, in particular the values allocated to children. This means that the number of children is not equally important for the outcome of net transfer in the German estimations. As the number of children for interviewed persons from Lebanon is considerably higher on average this factor

[76] All OLS estimations are conducted by using *Stata* ©.

Table 2.24. Regression estimates (Ordinary Least Squares) with net transfer in 2002 for first generation non-Western immigrants living in Germany (in thousand Euro) as the dependent variable. The five citizen groups are weighted according to the size in the German population. Corresponding to Table 10.13.

Variables	(1)	(2)	(3)
Constant	-14.932 (1.208)***	-11.065 (1.001)***	-9.790 (0.891)***
Female	1.739 (0.270)***	2.293 (0.265)***	3.148 (0.212)***
Age	0.339 (0.062)***	0.265 (0.056)***	0.131 (0.047)***
Age^2	-0.0047 (0.0007)***	-0.0045 (0.0006)***	-0.0030 (0.0005)***
Family status			
Single, no children	*reference*	*reference*	*reference*
Single with children	-13.609 (1.146)***	-14.421 (0.920)***	-14.036 (0.898)***
Married/cohabiting, no children	0.487 (0.377)	0.422 (0.332)	0.596 (0.238)**
Married/cohabiting with children	-6.082 (0.377)***	-7.065 (0.332)***	-6.694 (0.254)***
Employment rate	0.180 (0.003)***		
Earnings		0.598 (0.009)***	
Total labor income			0.619 (0.008)***
Number of observations	3927	3952	3952
R^2 (adj)	0.667	0.736	0.821

Notes: Numbers in parentheses are standard errors. *** denotes significance at the 1 percent level of confidence, ** denotes significance at the 5 percent level of confidence, * denotes significance at the 10 percent level of confidence.

could be a source of bias in the non-weighting approach; yet, that does not seem to be of major importance in the estimations shown here. However, it may be the case that a more refined determination of public consumption for children could lead to more significant dissimilarities between weighted and non-weighted estimations.

When using the weighting variable in regression estimation one has to take into account that the standard errors can be expected to be underestimated. To get the ”right” standard errors one would have to control for the stratification design in the data acquisition process, which is rather intricate, an issue also discussed in the Appendix to *Migrants, Work, and the Welfare State*.[77] To circumvent the problem of evaluating significance levels of the coefficient estimates, the non-weighting approach can be seen as the more feasible way to go.

[77] For a more detailed discussion of this issue, see ”30.3 Example of the effects of weights, clustering, and stratification”, p. 325 in *Stata User's Guide Release 7*.

All in all, the sensitivity analysis illustrates that one should not take the coefficient estimates too literally, e.g. in the way like saying: ”Given that other demographic characteristics, family status and employment variable are held constant, women contribute 1 739 thousand € more to the public economy on average than men”. It is simply not very reliable to assert such point estimation. However, the coefficient estimates regarding demographic and family status variables as well as employment status are rather robust (and significantly different from zero). Different ways of demarcation bring about similar results. This allows for qualitative statements like: ”Women are contributing (significantly) more than men when controlling for demographic characteristics, family status and employment variables”. Such a statement can nevertheless be useful, for example when conducting a comparison of the net transfer situation between Germany and Denmark, as was performed in Chapter 10.

3. Concluding Discussion

As should be evident by now, estimating a net transfer variable is in no way an easy task. The most severe of all problems and limitations have been highlighted in the previous sections. Instead of extending the discussion of different kinds of problems that relate to measurement errors or forced approximations that each might have had some more or less severe impacts in the reliability of the given estimations, this concluding section is aimed to motivate why a measure of net transfer can be useful in the evaluation of success and failure of the integration of immigrants in destination countries.

First of all, using net transfers as a measure of successful integration and as object of study is more impartial than to look at, for example, probability (and extent) of receipt of social assistance or unemployment benefits one by one. This is because some (group of) immigrants can be subject to dissimilar eligibility regulations regarding different forms of social welfare compared to both the local (native) population and other (groups of) immigrants, for example immigrants with recognized refugee status. Furthermore some immigrant groups can also be restricted by various work permit rules.[78] Due to the fact that some immigrants lack entitlement to unemployment insurance, or that the amount of payment they would be entitled to is considerably smaller than what is the case for the native population, immigrants may apply for social assistance to a larger extent than what is the case for native citizens.[79] In the worst case this can lead to unsubstantiated conjectures in the native population about the "…pernicious nature of immigration" (Bean et al. [1997], p. 261); in particular such deductions may arise more frequently when focusing on just one part of social welfare.[80]

Especially one should be aware of the risk of achieving a misleading result of better (or worse) outcome for some groups mainly because of different entitlement to parts of social security, thereby falsely indicating that some group to a lesser (or higher) degree utilize the welfare system than those not restricted. In general, to allow for more valid conclusions one should as a minimum

[78] This may explain the notable higher take-up rates of social welfare among immigrants as has been found in Germany, Denmark and Sweden, see e.g. Wildasin (2004).

[79] A higher take up rate may be reinforced even more when social assistance works as a supplementary payment. This is possible in the German but not in the Danish social welfare system as pointed out by Nielsen (2004).

[80] Take-up rates for different kind of social security are frequently studied in the international migration literature. One such study is by Hammarstedt (2000), comparing four main branches of social security solutions in a cohort analysis of several immigrant groups in Sweden. In contrast to previous studies that treated one part of the social welfare system at a given period in time that study aims to "investigate the immigrants' participation simultaneously…", p. 241. This is much in the same line as what we have in mind; however, by using net transfer as the outcome variable we make use of just one comprehensive measure of "success" instead.

standard control for aspects like time of immigration and, if such information is available, also for initial immigrant status. By doing this one will, at least approximately, ascertain equal preconditions across different group of immigrants to succeed (assimilate) in the host country. However, here it is essential to have an outcome variable that states a complete and tractable common estimate, and not a number of detached welfare measure, each more or less sensitive to extensive institutional regulations.

Actually, studying net transfer instead of its different determinants in isolation will most notably contribute to a more broad view of cost and benefit of immigration for the host country, especially as it also seeks to take account of tax and social insurance contributions made by immigrants. Including such payments give some verification for the sustainability of the public financial system, where an overall positive net transfer outcome state a necessary, however not always sufficient condition for sustainability.

In order to achieve reasonable estimations one also should take indirect taxes such as value added taxes (VAT) into account. This holds because funding of social welfare systems in various countries are fairly different, for example applying a rather high VAT but relatively low employer contributions in the case of Denmark, whereas Germany applies a rather low VAT but rather large employer contributions. To some extent different funding of the public sector will involve different marginal effects and thus stimulate the individual amount of labor supply and as a consequence also affect the propensity of utilizing social welfare. Among other things, this calls for examining the marginal effect of a change in labor supply on net transfer in different countries.

By focusing on pecuniary outcome and discounting the actual source of payments one emphasizes the mere financial effect for the public sector. Such an approach will also be less vulnerable to normative claims that occasionally show up in public debate, stressing that there is dissimilarity as regards the grade of stigmatization of different payments from the social security system. That is because received support by insurance based public security (in contrast to tax funded social assistance) "...are often described today as 'citizens' rights' or entitlements for which the individual has qualified by paying contributions earlier.", see Lindbeck (1995), p. 10. Applying a net transfer approach will take the sting out of an occasionally infected debate over use and misuse of some particular public welfare program.

Apparently the most natural common denominator to measure welfare expenditures and public financial gain due to individuals' taxes and other contributions are the pecuniary amounts involved. Hence, using the monetary account as the entity of comparison within a particular country at a given time period can facilitate an assessment of the impact of immigration for the social welfare systems in a more pragmatic, comprehensive and intuitive way than to

describe and compare a number of institutional systems one by one. Above all, the benefit of such standardization becomes obvious when one intends to extend the analysis to evaluation over time, or compare according outcomes for different countries. In particular, changes of some part of the social welfare system might be compensated by changes in others. So it could be misleading just to focus on a certain part, as for instance social assistance, leaving aside other possible channels of public support.

However, considering the methodological difficulties accounted for in the preceding sections one may object that a comparison of net transfer outcomes is rather sensible both to demarcations applied but also regarding access to reliable data. In an ideal evaluation framework there would be i) comparable longitudinal register based data sets and ii) a transnational agreement on the specification of reasonable items to be included in net transfer accounts. For the time being none of these two exist.[81] At its best, this study has contributed both to elucidate the usefulness of the net transfer variable, but also to facilitate the accomplishment of such a general instrument of policy evaluation.

[81] The data source most suited to allow for a comparison of social welfare systems across (OECD-) countries is presumably the Luxembourg Income Study. However, among other things, it does not take account of ”the redistributive effects of the public provision of services, such as education and health care, despite the fact that, services are a critical component of the welfare states of many affluent countries.”, see Kenworthy and Pontusson (2005). However, lately some attempts have been made to facilitate a comparison of the impact of different security systems for citizens within some EU countries, see e.g. Immervoll and O’Donoghue (2003).

Appendix

A.1. Determining Income Taxes

In the following description the steps involved to determine the individual income taxes attributed to the interviewed persons are shown. The description corresponds to the used programming in Stata [StataCorp (2003)], in particular, in the output below actual commands are written in courier style. The intention with this manual is both to provide more detailed description of the calculations but also to illustrate the rather intricate algorithm used in the German fiscal tax legislation, e.g. the functioning of the previous named ”Progressionsvorbehalt”. The model corresponds to the legal term in *§ 32a (EStG)*. The procedure for determining the taxes for those who are assumed to apply for joint taxation is essentially done in a similar way. The main difference is that married couple’s incomes are summed up and divided by two before the tax algorithm is used.

```
recode bruttolön .=0
```
/* bruttolön = gross salary (= fe19 in the *RFMS-G* data). Here income is set to zero in case information is missing*/
```
recode bruttolöneben .=0
```
/* bruttolöneben = other income from work (= fe24 in the *RFMS-G* data) */

```
recode pensbeskbel .=0
```
/* pensbeskbel= the taxable pension income. Here all income is set to zero in case that there is no information about pension income, i.e. even in the case the interviewed person stated that he/she receive pension income but where he/she did not state the according amount */
```
recode pensbelop .=0
```
/* pensbelop = the pension income (= fs01b in the *RFMS-G* data). Here the income is set to zero if information is missing*/

```
generate gesamtlön = bruttolön + bruttolöneben + pensbelop
if arbstat~=. & fe19ka~=1
```
/* fe19ka: Those who did not state an income from work are indicated by fe19ka=1; the variable arbstat (= fe12 in the original data) indicates the work situation. Note that the syntax”~=” stands for ”not equal to”*/

```
generate gesamtlön2=(gesamtlön*12)
```
/* change to year amounts */
```
replace gesamtlön2=(gesamtlön*12)-1044 if arbstat==1
```
/* Take account for the tax deductible amount called ”Arbeitnehmerpauschbetrag” in case IP is employee */
```
replace gesamtlön2=0 if gesamtlön2<0
```
/* Assuring that no negative income are included */

Here the ”tax-algorithm” according to § 32 (EStG) starts:

```
generate y=(gesamtlön2-7200)/10000
generate z=(gesamtlön2-9216)/10000
generate x=gesamtlön2

generate steuertarif1=0 if gesamtlön2<=7235
replace     steuertarif1=(768.85*y     +     1990)*y     if
gesamtlön2>=7236 & gesamtlön2<=9251
replace   steuertarif1=(278.65*z   +   2300)*z   +   432   if
gesamtlön2>=9252 & gesamtlön2<=55007
replace steuertarif1=(0.458*x) - 9872 if gesamtlön2>=55008
& gesamtlön2~=.

generate dum=round(steuertarif1,36)
/* create a dummy variable that round up to whole number that is divisible with
the number 36 */
replace dum=dum-36 if dum>steuertarif1
/* ensure that the number is smaller as when not rounded */

generate einkomsta=dum+18

********
Next I set the tax rate to zero for those who because of the rounding procedure in
the two previous steps got a amount of 18 € */
replace einkomsta=0 if gesamtlön2<=7235

replace einkomsta=einkomsta/12
/* replace to amount per month*/
```

In the following first step the number is calculated that states the percentage that taxes amount to in relation to the here included income. In step 2 the taxable income is determined. In the last step the percentage tax rate determined in step 1 is applied to the taxable income determined in step 2.

```
*Step 1
generate proceinkomsta=einkomsta/gesamtlön

*Step 2
generate gesamtlön3=bruttolön + bruttolöneben + pensbeskbel
if arbstat~=. & fe19ka~=1

*Step 3
generate einkomst=proceinkomsta*gesamtlön3
/* the final amount of income taxes attributed to the interview persons */
```

A.2. Determining Social Security Contribution

Here the different steps in calculating social security contributions are presented. For the most part the following description corresponds to the ”do-file” written in Stata, in particular the according commands are written in courier style. At the same time the subsequent steps reflect the clarification provided in section 1.4.4.

```
recode bruttolön .=0
```
/* bruttolön = gross salary (fe19 in the *RFMS-G* data). Here income is set to zero in case information is missing, which is indicated by “.”*/
```
recode bruttolöneben .=0
```
/* bruttolöneben = other income from work = fe24 in the *RFMS-G* data */

```
generate gesamtlön=bruttolön+bruttolöneben if arbstat~=. &
fe19ka~=1
```
/* fe19ka: Those who didn’t stated an income from work are indicated by fe19ka=1; the variable arbstat (= fe12 in the original data) indicates the work situation. Note that the syntax “~=” stands for ”not equal to” */

Here the amounts regarding social security contributions are determined. In the first step only the share paid by the interviewed person is calculated. In a second step the employer’s share is included. As the conditions are slightly different for employees living in the former Eastern Germany, the calculations are separated with respect to both areas.

First the calculation for employees in Western Germany
```
generate socialavg1=0 if socialförsbet==1 & gesamtlön<=325
```

The variable socialförsbet (fe21 in the original data) indicates if the interviewed person pays social security contributions, where 1 indicates yes, 2 indicates no and 3 indicates no answer. Here I set all amounts to zero, disregarding the fact that the interviewed person stated to pay social security contributions. This is because such low incomes do not make it mandatory to pay own social security contributions. On the other hand it may be the case that contributions are paid voluntarily, especially contribution to the pension insurance. The problem is, however, that it is not possible to state the according percentage shares of social contributions basing on mandatory legislation. There are 91 interview persons who are subjected to this procedure.

```
replace socialavg1=(gesamtlön*(0.2045)) if socialförsbet==1
& gesamtlön>325 & gesamtlön<=3375 & arbstat==1 & region~=11
```

Region 11 (East Germany) is excluded. The value 0.2045 is the percentage share that makes up the different sections of the mandatory social insurance, with the

exception for accident insurance, which is solely financed by contributions of the employers. The variable arbstat (fe12 in the original data) indicates the working situation, where 1 stands for being employed

```
replace socialavg1=(gesamtlön*(0.128)+ 3375*(0.0765)) if
socialförsbet==1 & gesamtlön>3375 & gesamtlön<=4500 &
arbstat==1 & region~=11
```

Here the contributions are splitted because of a lower contribution assessment ceiling (”Beitragsbemessungsgrenzen”) for nursing care and health insurance

```
replace socialavg1=(4500*(0.128)+ 3375*(0.0765)) if
socialförsbet==1 & gesamtlön>4500 & gesamtlön~=. &
arbstat==1 & region~=11
```

Calculation for employees in Eastern Germany

```
replace socialavg1=(gesamtlön*(0.205)) if socialförsbet==1
& gesamtlön>325 & gesamtlön<=3375 & arbstat==1 & region==11
```

```
replace socialavg1=(gesamtlön*(0.128)+ 3375*(0.077)) if
socialförsbet==1 & gesamtlön>3375 & gesamtlön<=3750 &
arbstat==1 & region==11
```

```
replace socialavg1=(3750*(0.128)+3375*(0.077)) if
socialförsbet==1 & gesamtlön>3750 & gesamtlön~=. &
arbstat==1 & region==11
```

The contribution assessment ceiling for unemployment and pension insurance is lower in Eastern Germany

```
*********
```

Next the calculation for the 168 self-employed persons (arbstat = 3), the 27 persons assisting their spouse (arbstat = 2) and those 11 persons who did not answer (arbstat = 4). Note that the syntax “|” stands for ”or”.

For Western Germany

```
replace socialavg1=(gesamtlön*0.344) if gesamtlön>325 &
gesamtlön~=. & socialförsbet==1 &
(arbstat==4|arbstat==3|arbstat==2) & region~=11
```

In the following a correction for min and max values is applied according to information from the labor union organisation igmedien, (”11.2. Versicherungen - aktuelleZahlen”)[82]

```
replace socialavg1=60.94 if socialavg1>0 & socialavg1<60.94
& socialförsbet==1 & (arbstat==4|arbstat==3|arbstat==2) &
region~=11
```

[82] See www.igmedien.de/publikationen/m/2002/1_2/36d.html.

```
replace socialavg1=687.94 if socialavg1>687.94 &
socialavg1~=. & socialförsbet==1 &
(arbstat==4|arbstat==3|arbstat==2) & region~=11
```

For Eastern Germany

```
replace socialavg1=(gesamtlön*0.354) if gesamtlön>325 &
gesamtlön~=. & socialförsbet==1 &
(arbstat==4|arbstat==3|arbstat==2) & region==11

replace socialavg1=61.13 if socialavg1>0 & socialavg1<61.13
& socialförsbet==1 & (arbstat==4|arbstat==3|arbstat==2) &
region==11

replace socialavg1=618.01 if socialavg1>618.01 &
socialavg1~=. & socialförsbet==1 &
(arbstat==4|arbstat==3|arbstat==2) & region==11
```

```
*********
```

Next the employer's social security contributions are added, i.e. the preceding estimation are doubled for those interviewed person who were employed, i.e. not self-employed.

```
replace socialavg1=socialavg1*2 if arbstat==1 &
socialförsbet==1
```

In addition payroll taxes of 22 percent for health- and pension insurance for so-called "Geringfügig Beschäftigte" are accounted for, i.e. employees who work max 15 hours a week and earn a gross wage less than 325 € a month.

```
replace socialavg1=(gesamtlön*0.22) if socialförsbet==1 &
gesamtlön<=325 & veckoarbetstidreal<15
```

```
*********
```

Next the employer's payroll taxes for accident insurance are added. Here a contribution of 1.3 percent on the interviewed person's gross income is applied, which is an average number as the amount varies between occupational groups. I assume that all interviewed persons with work income pay (by their employers' contributions or own contributions) the same percent amount and apply a contribution assessment ceiling of 3 750 €. This is done though such a restriction is not stated in the legislation. The reason to apply such a ceiling in all cases is because of the insecurity of the correct amounts paid, especially as both employed and self-employed in different occupations are included.

```
generate olycksavg=0 if socialförsbet==1 & gesamtlön<=325

replace olycksavg=(gesamtlön*(0.013)) if socialförsbet==1 &
gesamtlön>325 & gesamtlön~=. &
(arbstat==1|arbstat==2|arbstat==3|arbstat==4)
```

```
replace olycksavg=(3750*(0.013)) if socialförsbet==1 &
gesamtlön>3750 & gesamtlön~=. &
(arbstat==1|arbstat==2|arbstat==3|arbstat==4)

*********
```

As a last step these estimations are added to the preceding calculated social security contributions.

```
replace olycksavg=0 if olycksavg==.

replace socialavg1=socialavg1+olycksavg

****
```

A.3. Determination of the Lump Sum and Distribution on Individuals

To clarify how the public consumption in Germany is demarcated in such way that only those items are included that responds to costs that are sensitive to a marginal change in size of the population, extracts from Table 20.4.2 are shown. The corresponding explanations can be found in section 1.3.

Table A.3.1. Corresponding to Table 20.4.2 in *Statistisches Jahrbuch 2002.*

Area of responsibility *)	Year		Expenditures which in sum determine public consumption allocated to individuals
	1998	1999	
1 Politische Führung und zentrale Verwaltung	**33 479**	**34 283**	
2 dar.: Politische Führung	7 729	8 179	
3 Innere Verwaltung	10 096	10 278	
4 Hochbauverwaltung	3 191	3 258	
5 Steuer- und Finanzverwaltung	9 884	10 002	
6 Auswärtige Angelegenheiten	**21 787**	**20 314**	
7 dar. Wirtschaftliche Zusammenarbeit	20 034	18 594	
8 Verteidigung	**23 876**	**24 399**	
9 Öffentliche Sicherheit und Ordnung	**18 909**	**19 452**	**19 452**
10 dar. Polizei/Bundesgrenzschutz	12 297	12 652	
11 Rechtsschutz	**9 644**	**9 898**	**9 898**
12 Schulen und vorschulische Bildung	**54 916**	**55 690**	**55 690**
13 dar.: Allgemeinbildende Schulen	35 757	36 174	
14 Berufliche Schulen	6 034	6 377	
15 Hochschulen	**18 221**	**18 643**	**18 643**
16 Förderung des Bildungswesens	**3 565**	**3 582**	**3 582**
17 Sonstiges Bildungswesen	**2 573**	**2 664**	**2 664**
18 Wissenschaft, Forschung, Entwicklung außerhalb der Hochschulen	**8 769**	**8 805**	**8 805**
19 Kulturelle Angelegenheiten	**7 598**	**7 917**	**7 917**
20 Soziale Sicherung, soziale Kriegsfolgeaufgaben, Wiedergutmachung	**495 222**	**505 783**	**505 783**
21 dar.: Sozialverwaltung	4 200	4 304	-4 304
22 Sozialversicherung	413 337	424 579	
23 Familien-, Sozial- und Jugendhilfe	46 302	46 450	
24 dar.: Sozialhilfe einschl Einrichtungen	27 115	27 043	
25 Jugendhilfe einschl Einrichtungen	8 763	8 823	
26 Soziale Leistungen für Folgen von Krieg und politischen Ereignissen	8 048	7 555	

Continued from preceding page

27 Gesundheit, Sport und Erholung	**14 088**	**13 956**	**13 956**
28 dar.: Krankenhäuser	3 441	3 272	
29 Sport und Erholung	5 357	5 546	
30 Reinhaltung von Luft, Wasser, Erde und dgl	3 335	3 139	
31 Wohnungswesen, Raumordnung, kommunale Gemeinschaftsdienste	**28 804**	**27 998**	
32 Wohnungswesen	7 380	6 707	
33 Raumordnung, Landesplanung, Vermessungswesen	3 846	3 959	
34 Städtebauförderung	1 456	1 322	
35 Kommunale Gemeinschaftsdienste.	16 122	16 010	
36 dar.: Abwasserbeseitigung	5 563	5 483	
37 Abfallbeseitigung	4 980	4 853	
38 Straßenreinigung	677	710	
39 Ernährung, Landwirtschaft und Forsten	10 934	11 251	
40 Energie- und Wasserwirtschaft, Gewerbe, Dienstleistungen . . .	**27 273**	**25 981**	
41 dar.: Energie- und Wasserwirtschaft, Kulturbau	2 486	2 535	
42 Bergbau, Verarbeitendes Gewerbe und Baugewerbe	6 353	6 072	
43 Regionale Förderungsmaßnahmen	15 156	14 052	
44 Verkehr und Nachrichtenwesen	**22 019**	**22 445**	
45 dar.: Straßen	15 828	16 456	
46 dar.: Bundesautobahnen	3 295	3 301	
47 Bundes- und Landesstraßen	3 940	3 917	
48 Kreisstraßen	809	887	
49 Gemeindestraßen	6 677	7 218	
50 Wasserstraßen und Häfen, Förderung der Schifffahrt	1 931	1 963	
51 Eisenbahnen und öffentl Personennahverkehr.	3 148	2 885	
52 Wirtschaftsunternehmen	**6 564**	**13 680**	
53 Allgem. Grund- und Kapitalvermögen, Sondervermögen	**36 140**	**17 139**	
54 dar .Allgemeines Grundvermögen	6 987	6 036	
55 Allgemeine Finanzwirtschaft.	**88 322**	**107 413**	
56 dar.: Steuern und Allgemeine Finanzzuweisungen.	15 933	-64	
57 Schulden.	68 979	70 814	
58 Versorgung	31 610	32 941	
59 Beihilfen	3 413	3 385	
Sum	*921 769*	*940 042*	
Sum of expenditures that makes up for all to individuals allocated public consumption			***642 086***

*) Net amount

Source: *Statistisches Bundesamt*, *Statistisches Jahrbuch 2002* and own calculations.

Sum of expenditures to be allocated on individuals according to section 1.3	642 086 million €
Other investment costs that are allocated[83]	31 767 million €
	67 3853 million €
Sum of both items adjusted to year 2002, i.e. multiplied by the factor 1.02*1.02*1.02	715 098 million €

As was stated in the beginning of section 1.3 are 532 859.548 million € distributed in the first stage of the estimation procedure. The difference determined by

715 098.194 – 532 859.548 = **182 238.646** correspond to the lump sum which remains to be distributed evenly over the sample population. When dividing this amount by using the total number of 82 259 500 persons (i.e. the number of people living in Germany) a mean amount of 2 215.41 € would be distributed. But as is stated in section 1.3 are costs regarding public order and national security only attributed to those older than 15 years of age. That means that for those who are younger than 15 years the lump sum is calculated by controlling for (i.e. subtracting) ”Öffentliche Sicherheit und Ordnung” (19 452 million €) and ”Rechtsschutz” (9 898 million €) and dividing this amount with the whole population of 82 259 500 persons which results in 1 837 €. For those 15 years and older the following quantity is added additionally:

- ”Öffentliche Sicherheit und Ordnung” divided by the entire population 15 years and older (69 482 200 persons)
- ”Rechtsschutz” is multiplied with the factor 0.34 which corresponds to the share of non-natives in 1999 who were sentenced for any kind of punishable offence. This amount is divided by the number of people of non-German citizenship of the age 15 and older (5 914 504 persons).

This leads to an average amount of 2 738 € that is charged to the interviewed persons’ net transfer accounts. The amount of 1 837 € will be charged for each child at the time their costs are added to the parents.

[83] See section 1.3.9.

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