GENDER EQUALITY IN CENTRAL AND EASTERN EUROPE:

A COMPARISON OF LABOUR MARKET ATTITUDES, EDUCATIONAL ACHIEVEMENT AND POVERTY BETWEEN EAST AND WEST

PhD thesis

accepted by the

School of Business, Economics and Social Sciences

University of Hamburg

in fulfilment of the requirement for the degree of the

Doctor rerum politicarum

by

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Southampton, 11 April 2005

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Date of the Defence (Disputation): 9 September 2005

ACKNOWLEDGEMENTS

Many people have helped me in various ways to write this PhD thesis. Greatest thanks are due to John Micklewright. Without his invaluable comments, helpful advice, guidance and support this thesis would not have been finished. I am also grateful to Thomas Straubhaar. Situated in Hamburg he managed the difficult job of supervising my thesis and did not forget about me while I was studying and working in Florence and Southampton.

I would also like to thank Colin Crouch for his advice and support during my time at the EUI in Florence and to Christiane Lemke and Marc Suhrcke who helped with many suggestions during the development phase of my PhD thesis. I also greatly benefited from comments and discussions of seminar participants and colleagues at the universities of Southampton and Hamburg.

Funding through a post-graduate grant (Graduiertenstipendium) from the University of Hamburg and additional funding from the DAAD are greatly acknowledged. Thanks for advice in administrative matters are due to Jürgen Steinke.

On a personal level I owe gratitude to my parents Bärbel and Rainer Schnepf for their steady and kind encouragement. My brother Andreas always managed to be just there when things were worse. My sister-in-law Katrin and Tini helped in various ways, too. This support of my family, patience in bad times and shared happiness in good times were invaluable.

Finally, I want to thank my friends and companions, in particular Alessandro, Chr., Cornelia, the German and the Swiss Daniela, Eva, Jeannette, Katja and Ulrich as well as my Irish family Daniel, Isobel and Molly who all coped with me being a terrible social disappointment during the years of writing this thesis.

To my beloved parents

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1 Introduction

The equality of men and women used to be one of the alleged advantages of the communist system. Following the Communist party doctrine the issue of women's equality was 'solved' in 1929, when it was declared, that by definition women were equal to men. Most of the communist countries ratified the 'Convention on the Elimination of All Forms of Discrimination against Women' earlier than Western industrialised Countries[1], thereby demonstrating their adherence to the fulfilment of women's rights. Indeed, pre-transitional data of the gender-related UNDP human development index (GDI) indicate that communist countries had a relative advantage in terms of gender equality compared to countries with similar levels of GDP. (UNDP, 2004; Pollert, 2003) Women's high integration into the labour market as well as the universal access to basic health care and education can be interpreted as the great advantages of the communist system in terms of gender equality.

Nevertheless, whether the authoritarian regimes of countries in Central and Eastern Europe (CEE) did indeed provide the officially declared women's rights within the communist period has been doubted (Einhorn, 1993; Wolchik and Meyer, 1985). Women's higher integration in the labour market was still associated with women's great responsibilities for child rearing and house work (UNICEF, 1999), and the gender pay gap and gender segregation in the labour market was similar to levels found in OECD countries. In addition, the high number of women in representative positions in communist party politics cannot deceive the fact that women's positions in politics were rather toothless compared to those of men. (Pollert, 2003)

Hence, the pre-transitional level of gender equality is complex and the figures need to be interpreted cautiously. In addition, data disaggregated for women and men are often not available for the time during communist ruling.

The years since 1989 have had an enormous impact on people living in post-transitional economies. GDP fell dramatically in some transition countries accompanied by a tremendous increase in poverty and income inequality.[2]

In this context, a large strand of literature argues that the costs of the transition process have not been distributed equally, but women have had to bear a higher

[1] The convention was signed among others by Belarus (1981), Bulgaria (1982), Hungary (1980), Poland (1980), Romania (1982), Russia (1981) and Ukraine (1981), while e.g. Germany, United Kingdom and Japan only ratified in 1985.

burden. (Gal & Kligman, 2000; Pailhe, 2000; Moghadam, 1993a, Dijkstra, 1997) However, as far as gender equality in the economic sphere is concerned, this argument stands in contrast to empirical evidence based on gender-specific macro-economic data that generally do not suggest an increase in gender inequality during transition. (Paci, 2002)

The aim of this study is to assess gender equality across a large set of CEE countries 10 to 15 years after transition has started - a subject that is rarely explored to date[3]. Gender equality today will reflect both the inheritance from the communist period and subsequent developments during transition, and it is the empirical question examined here as to what the net result has been.

This study focuses on gender equality in three areas that are important for women's economic empowerment: the labour market, education and poverty incidence. However, the study does not discuss gender equality in legislation and in political institutions.

Ideally, gender equality should be defined as the equality of opportunity in contrast to equality of outcomes. Diverse gender related outcomes can reflect different preferences and comparative advantages in performing different activities between women and men and can therefore be an efficient consequence of different choices of genders.[4] In contrast, inequality in opportunities mirrors inequality in individuals' life chances and choices that is neither fair nor efficient. Hence, ideally an in-depth analysis of levels of gender equality would need to focus on equality of opportunities. Nevertheless, the differentiation between equality of opportunities and outcomes is not always clear. This is also due to the fact that differences in preferences might derive from social values that could promote diverse stereotypes and expectations of women and men. (Paci, 2002) Preferences to women's work (examined in Chapter 2) are therefore one aspect of gender equality examined in this analysis. Another aspect of gender equality investigated (Chapter 3) regards gender differences in educational achievement. Even though achievement reflects educational outcome, the focus is on pupils in compulsory schooling at the early stages of individuals' human capital accumulation. The analysis of economic well-being might capture not only gender

[2] See Section 1.2 for a more detailed description of economic developments during the transition process.
[3] Exceptions are UNICEF (1999) and Paci (2002).
[4] For example, a comparison of labour force participation between women and men examines equality of outcomes. However, gender inequalities observed might be due to gender differences in preferences. E.g. women might have different preferences for participating in the labour market than men.

differences in opportunities but also in outcomes, even though women and men might have similar preferences to maximise their economic well-being.

How can gender inequality levels observed be assessed in terms of 'high' or 'low' inequality? Most of the literature compares gender equality levels of today with those during the communist period; gender equality is then judged to be high if an increase in women's disadvantage is observed over time. This benchmark of gender inequality during communism has two main disadvantages: first, generally there are no comprehensive data on gender equality available before transition started[5]. Second, this research has a difficult path to go since high levels of gender equality often derived from pre-transitional data available conceal underlying levels of gender inequality in the society that were not addressed during communism.[6]

This study takes another path[7] by investigating how good are absolute levels of gender equality in CEE countries compared to those in the European Union and elsewhere in the OECD. These benchmark countries will be refered to as 'pre-1990 OECD' or simply as 'OECD' countries, hence those countries that were already members in the OECD before 1990[8]. Since literature suggests that gender equality is linked to economic development (see Section 1.2) pre-1990 OECD countries that are generally 'rich' in terms of economic development are likely to set quite high standards for countries in CEE that went through transition. However, here it is argued that the comparison of (pre-1990) OECD with CEE countries is sensible to carry out in a converging Europe where countries are committed to democratic values.

In comparing CEE countries with those elsewhere I am careful to avoid treating them as a homogenous bloc – the variation among them is important to bring out since both the inheritance from the communist period and the subsequent experience differs from country to country.

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[5] Since 'gender equality' was officially declared to be achieved during communist times the collection of data disaggregated by gender seemed not to be valuable.

[6] For example, women had a high participation in politics, but were generally in toothless positions compared to men. In how far is it possible to compare data on women's participation in e.g. the parlament before transition with that after transition? The latter has certainly a different quality in terms of women's influence than the first. Another example is the so-called 'double burden' of women, reflecting that even though women were 'equally' integrated in the labour market, responsibilities in the household and child raising were predominantly those of women. Given the difficulty of comparing and interpreting data between the pre- and post-transitional period results of this literature on gender inequality over time are to some degree contradictory (see Section 1.3). These contradictions have partly attracted more attention than women's actual disadvantage in transition countries today.

[7] Nevertheless, Chapter 2 on attitudes to gender inequality and Chapter 4 on the feminisation of poverty will also examine time trends of gender equality.

[8] However, if data are available also Mexico and Japan will be incuded in the benchmark group of pre-1990 OECD countries.

This Chapter introduces the study, providing the reader with the necessary background for the subsequent Chapters.

The remainder of the Chapter is as follows: Section 1.1 explains the motivation of the study, its positions in the literature and discusses its value added and limitations. Section 1.2 provides a general background on economic developments during the transition process. Section 1.3 switches then to the gender perspective and gives insight into gender equality and its developments during transition. Section 1.4 discusses the outline of the study.

1.1 Motivation, position of this study, value added and limitations

1.1.1 Motivation

Gender equality in CEE countries is only rarely explored even though this subject is of importance, especially for countries going through a process of democratisation and marketisation:

- Gender equality has been recognised as a development goal in its own right in the Convention on the Elimination of All Forms of Discrimination against Women.
- Besides this intrinsic aim of reaching gender equality, its examination in transition countries can evaluate how far they manage to provide equal rights and opportunities to people in CEE, an issue that is certainly of importance for judging the emergence of egalitarian conditions in new democratic societies.
- However, gender inequality might also impede the achievement of development goals that are important for the establishment of successful market economies. An increasing strand of research indicates that gender inequality is costly for societies in terms of slower economic growth (Dollar & Gatti, 1999; Klasen, 1999).
- Furthermore, there is ample evidence that societies with higher gender inequality are struck by more income poverty and other forms of deprivation. (World Bank, 2001)
- Besides the general importance of the subject, research results on changes in gender equality during transition are partly contradictory indicating that further research is needed to clarify the complexity of women's opportunities in transition countries today.

1.1.2 Are women the losers of the transition process?

Predominantly feminists and sociological researchers state that women have had to bear the higher burden of transition costs (Gal & Kligman, 2000; Moghadam, 1993a, Dijkstra, 1997, Pollert 2003). It is generally argued that the marketisation process has weakened the position of the vulnerable social groups, who comprise predominantly women. After the loss of guaranteed employment as one of the main characteristics during communist times, female workers' benefits intended to allow them to combine work with motherhood rendered women's work into 'expensive labour'. Hence, women faced greater difficulties to remain employed or regain employment than men.

On the basis of single country studies Gal and Klingman (2000), Zielinska (2000), Rudd (2000), Kotowska (1995) and Wolchik (1993) claim that women's greater difficulty to maintain full-employment and the re-emerged emphasis on traditional labour division has lead to an increase in gender inequality in the region. In detail, especially the reduction of state-sponsored childcare benefits and maternity leave benefits, the disappearance of state protection and enforcement of anti-discrimination laws, serious challenges to abortion rights and the political dialogue centred on the need for women to stay at home with their children are all used as the main arguments in favour of the statement of women's increasing disadvantage during transition.

In addition, it is argued that the dramatic decline of women participating in politics excluded women's perspectives from policy-making and therefore removed women's issues from the political agenda of the transition process, so that the transition became a pure masculine project (the so called 'democratization with a male face') (Mogadham, 1993a; Watson, 1993; Watson, 2000). This lack of women's representation in politics cuts down women's voice and therefore the support to improve or equalise women's position in transition economies.

Furthermore, previous revolutions in other countries like Algeria and Iran indicated that transition results in a disadvantaged position of women since the redefinition of cultural and religious identity generally tied up with revolution is likely to follow more traditional paths, which deny women's liberal and equal rights in the family and labour market. (Moghadam, 1993b) It is questionable whether these developments also took place in transition countries of CEE. However, the revitalisation of traditional values in Poland (Moghadam, 1993b) and in Central Asia (Tablyshalieva, 1999) might go hand in hand with a decline of women's opportunities.

Given these arguments justifying the view of women's deteriorating situation during transition, we would expect that economic indicators on women's position in the labour market showed a clear increase of gender inequality over time. However, at least as long as the focus is on the economic sphere[9] there is rather little evidence of this: the ratio of female to male activity rates did not decline over time in CEE and there is also no general pattern visible in the region indicating that more women than men are among the unemployed (Paci, 2002). In addition, there seems to be a tendency that the gender pay gap in CEE declined and did not increase (Brainerd, 2000; UNICEF, 1999)[10] and that women have gained from increasing returns to education more than men during transition (Newell and Reilly, 2001). Furthermore, the 'feminisation of tertiary education' indicates a greater advantage of women over men in terms of acquisition of human capital. (Developments of gender equality over time will be discussed in greater detail in Section 1.3.)

1.1.3 The difficulties of measuring gender equality with economic indicators

Given that there is no strong evidence of economic indicators confirming the deterioration of gender equality during transition, it might be simply assumed that women did not fare worse during the transition process. However, the discrepancies of expectations on women's deteriorating situation and results on gender inequality might also show that gender equality is difficult to measure with economic indicators. Besides a general lack of gender-disaggregated data for the pre-transitional period, there are some limitations of economic indicators like gender pay gap, gender-specific activity rate, unemployment rates etc. for measuring gender equality in transition countries:

- Observed gender differences or equalities between the pre- and post-transitional period measured by economic indicators might be determined by unobservable characteristics that cannot easily be quantified. The change from a communist to a market oriented society did impact greatly upon people's economic spheres but additionally shaped people's preferences, opinions, attitudes and with that their behaviour in the economy. The societies in the pre- and post-transitional period

[9] Once e.g. gender empowerment in politics is concerned there is no doubt about the decline of women's participation in political institutions and parties during the transition process.

might have impacted differently on women's and men's economic activities. Hence, gender differences in economic outcomes over time might picture unobservable gender differences in market behaviour and incentives that emerged during the change from the pre- to the post-transitional period.[11]

- Gender inequalities in opportunities but not in outcomes per se are important for the analysis of women's disadvantage. Generally the use of economic indicators for explaining gender inequality is based on the assumption that equality in outcomes is similar to equality in opportunities. Since women are likely to differ from men in their preferences this assumption can be doubted.
- Indicators generally used for the examination of gender equality in Western industrialised countries might not be applicable for transition countries where decades of communist rule lead to different societal structures. For example[12], in Western industrialised countries where women integrated gradually into the labour market (with also the option of part-time employment) it is sensible to use women's activity rate as an indicator for gender equality (as commonly done, see Chapter 2). But in transition countries, where women made up half of the labour force during communism, where part-time employment is still a rarity, and where a two-earner family income is important for overcoming poverty, women's activity rate today mirrors a completely different picture of attitudes, constraints and communist inheritance. The term of 'women's double burden' indicating women's great family responsibilities besides being full-time employed (UNICEF, 1999) is one example showing that people in CEE countries are 'different' regarding the distribution of work within the household. These 'differences' are difficult to catch by focusing on aggregated economic data.

[10] However, these results in the early mid 1990s are questioned by Grajek (2001) who shows that the gender pay gap in Poland narrowed only in the early years of transition and widened again in the mid 1990s with women suffering pay losses particularly through lower pay in the public services.

[11] For example, even if we found a decrease in women's activity rate during transition this would not necessarily mean that women had lower chances in the post-transitional than in the pre-transitional labour market. On the contrary, women might have had higher incentives to participate in the labour market during communism than during the transition process (or more women than men might have decided to increase their human capital or to work on the black market after 1989). At the same time, men's preferences might have remained stable over time.

[12] Also the investigation of gender inequality focusing on occupational segregation enshrines problems. For Western industrialised countries occupational segregation by gender is generally interpreted as a negative sign indicating gender inequality. However, Fodor (1997) states that women's concentration in service occupations lead to an increased job security for women given the flourishing service sector and the rapid decline of the male dominated heavy industry during transition.

1.1.4 The value added of the study in general

Given these limitations of economic indicators measuring gender equality and the special cultural and historical background of transition countries, the study argues that it is sensible to measure gender equality in transition countries with the use of alternative indicators complementary to those commonly used for examining women's economic empowerment.

These alternative indicators used in this study derive from data of recent and large cross-national surveys on attitudes to women's work, on educational achievement and on subjective economic well-being. In two Chapters focusing on gender attitudes to women's work and subjective well-being this study examines what people do actually think. This approach differs from the typical approach in economics: the predominant part of economic literature has generally ignored the expressed views of people about their own well-being or attitudes.[13] This is a paradox since economists assume that people are the best judges of their own welfare and are interested in people's choice dependent on their attitudes.

Also the focus on educational achievement (what pupils do actually know) in contrast to the typical approach of examining education attainment (the measured progression up an educational system) offers a new and (it will be argued later on) preferable way to discuss gender equality in education in a cross-country analysis.

The use of these alternative measures has several advantages:

- There is a natural interest to examine how far different possible indicators measuring gender equality show robust results.[14] Given that this study starts off the examination of alternative indicators of gender equality by referring to results of common economic indicators, the robustness of results on gender equality will be discussed.
- Disaggregated data by gender are still not available for all economic spheres and transition countries. For example, the examination of the 'feminisation of poverty' during transition by the means of objective poverty analysis (using data on household income) is not possible due to the lack of a gender-disaggregated data collection in large-scale household surveys and shortage of

[13] However, an increasing part of economic literature examines people's judgment (e.g. see the recent publication van Praag and Ferrer-Carbonell, 2004).

[14] For example, is it sensible to discuss in how far an objectively high rate of gender inequality (measured by economic indicators) in a country can be judged as bad, if women themselves do not perceive this inequality? Vice versa, objectively neutral results on gender equality need to be discussed, if women's perception of their life situation is significantly worse than that of men.

comprehensive data over time and across countries. However, there are recent and large cross-national data sets available that make it possible to examine gender inequality, its determinants and partly also developments over time with the alternative measures used in this study.

- Transition countries are special regarding their communist past and its impact upon women's and men's life constraints. The focus on people's own judgement in transition countries (also compared to people in pre-1990 OECD countries) is an important complementary approach for estimating gender inequalities to the use of common economic indicators that are very likely to be interpreted with a 'Western' understanding of gender equality.[15] In this context, it is important to note that generally economic indicators cannot measure cultural values and socially constructed roles that form gender inequality. The study's examination of gender inequality by using micro-data on people's own judgement can address directly these gender-specific preferences and societal values.
- Data on people's attitudes and judgements is policy relevant. For example, policy makers might be more interested in the countries' share of people dissatisfied with their financial situation than in the percentage of people below an (arbitrarily set) objective poverty line.

In summary, the use of a diverse set of indicators for measuring gender equality offers a different perspective that might capture a part of the complexity with that research on gender inequality in CEE has generally to deal with.

In addition, there are three further general shortcomings of research on gender equality that this study tries to overcome:

- Most of the research on gender inequality in transition countries does not compare women's disadvantage with that in countries that did not go through a rough transition process. However, a comparison of transition countries using a benchmark group of Western industrialised countries offers the possibility to examine whether indeed gender inequality in CEE is a more severe problem than in other developed countries.

[15] As will be discussed later on, the concept of 'gender equality' is very different between East and West and went to very different developments. 'Gender equality' as concept meets a great range of criticism in transition countries after communism, since people relate it to the communist doctrine.

- Many of the research studies on gender inequality focus solely on one or a small sample of transition countries. These results cannot be generalised across the whole region of CEE since transition countries are largely different in terms of economic and cultural foundations. Hence, this study tries to meet the need of a more comparative research design regarding gender inequality (Gal and Kligman, 2000) with the focus on a large set of transition countries.
- Women are not a homogenous group. A further research interest is to examine how far gender inequality differ between different groups of men and women. Gender equality might follow different trajectories depending on women's education, occupation, and family status. Data used in this study contain a large set on variables about people's background characteristics, so that the heterogeneity of the 'group women' can be examined in detail.

1.1.5 The three subjects examined in this study and their value added

Three different subjects that are important for women's economic empowerment form the core of this study:

Chapter 2 will focus on gender inequality in the labour market by examining *attitudes to women's work.* The labour market acts as the conduit through which reform policies impact upon people's standard of living and at the same time it is the market through which many of the rewards of transition are transmitted (Newell and Reilly, 2001). This makes the labour market one central area that determines the extent to which women have benefited in economic terms during transition.

Gender equality in the labour market is often measured by comparing women's and men's economic characteristics, like gender-specific human capital, labour force participation rates and the gender pay gap. These aggregated economic measures reveal that CEE countries in general keep up perfectly well with their Western neighbours. But a 'good' economic outcome in terms of gender parity does not necessarily mean a preferable outcome regarding gender-equal opportunities and choices. The value added of Chapter 2 is to analyse gender equality in the labour market from a different perspective using an indicator on *patriarchal attitudes to women's work*. Attitudes of both, women and men are examined and compared in and between transition and (pre 1990) OECD countries. The contribution of this Chapter is to describe regional and gender differences in attitudes to women's work as well as

their determinants. In addition, future patterns of social change of these attitudes will be analysed.

An important factor impacting upon women's chances in the labour market is their human capital. Hence, Chapter 3 examines the second field of interest in this study: g*ender equality in educational achievement*. The centre of the analysis is what pupils do actually know and hence their ability to function in modern societies ('functional literacy').[16] This focus on educational achievement stands in contrast to the predominant part of the literature that examines educational attainment (measured progression up an educational system) and that indicates in general gender parity in educational enrolment in post-communist countries (UNESCO, 2003a).

Chapter 3 examines whether this gender balance in educational access translates also into gender equality in educational achievement in and between transition and OECD countries. Besides the use of educational achievement instead of educational enrolment data, the contribution of this Chapter is to check for the robustness of results by using three different large scale surveys on educational achievement that are generally examined in isolation.

Chapter 4 focuses on the third and final subject studied: *the feminisation of poverty*. Gender differences in poverty incidence can be interpreted as the total effect of gender inequality in different spheres (e.g. gender differences in labour market opportunities and human capital). The small number of studies examining the feminisation of poverty in transition countries is based on household survey data and hence assumes income pooling and equal sharing between household members. However, recent research rejects this assumption of the unitary household and consequently indicates that results of household data on gender equality are very likely to be flawed. The value added of Chapter 4 is to shift from household to individual data on economic well-being for estimating the feminisation of poverty, its determinants and time trends.

1.1.6 Data sources of this study and value added

This study conducts cross-national analysis using recent data sets for the examination of gender inequality in CEE. It is a special characteristic of this study that micro data are used for the subject in question. Gender inequality is examined by focusing on attitudes, judgements and achievement on the individual level. Table 1.1

presents key information on data sources used in each Chapter including information on date and frequency of data collection, population covered, main topic focused on, coverage of gender and economic well-being modules, CEE countries covered and sample sizes. In the following these micro data sources are introduced (an in-depth description of data is given in each Chapter separately).

Chapter 2 (attitudes to women's work) uses data from the International Social Survey Program (ISSP)[17]. The ISSP is an annual cross-national survey conducted each year on a specific topic on social science research. Generally, about 1000 respondents per country are asked about their attitudes and their socio-economic background. The big advantage of the ISSP for this study is its relative high coverage of CEE countries, the specific focus on gender role attitudes in some rounds and the repetition of single questions on gender stereotypes over time. Chapter 2 uses one question on people's attitudes to women's work asked in four rounds of the ISSP: 1988, 1991, 1994 and 1998.[18] The main focus of the chapter is on the 1998 round of the ISSP ('Religion II') covering eight CEE and 18 OECD countries. In addition, cross-sectional data were compared over time.

Chapter 3 (gender inequality in educational achievement) compares results of three recent cross-national educational achievement surveys covering children in compulsory schooling. All these surveys assess pupils' educational achievement by asking them various questions on subjects concerned – maths, science and reading literacy skills. The answers that a respondent gives to the questions in the surveys are summarised by the organisers into a single score for each subject covered. These achievement scores are comparable between pupils and countries for each survey. All three surveys provide also information on the school and parental background.

PIRLS (Progress in International Reading Literacy Study), the most recent survey pertaining to 2001 and organised by the International Study Centre, Boston, assesses reading achievement of the youngest pupils – 9 to 10 year-olds. Its average sample size is about 3,500 pupils per CEE country.

TIMSS (Trends in International Maths and Science Study) organisers from the International Study Centre, Boston collected data on 7th and 8th graders in the 1995

[16] Educational achievement surveys, the data source for Chapter 3, measure ability of a representative sample of pupils in terms of test scores.
[17] For more information see http://www.issp.org/homepage.htm
[18] The newest round of ISSP (2002 on Family and Gender Roles III) made available at the end of 2004 was not included in this analysis.

and 1999 rounds[19]. The survey measures educational achievement in maths and science by focusing on a mastery of internationally agreed curricula. The sample size is about 3,500 pupils per grade and country.[20]

PISA (Program of International Student Assessment)[21], organised by the OECD, focuses on achievement of 15 year-olds in reading, maths and science attempting to measure whether students would be able to use what they have learned in 'real-life situations'. Data refer to the rounds 2000 and 2002 and sample sizes are around 5,000 pupils per country.

PIRLS and TIMSS cover data on 11 and PISA on 9 CEE countries. These countries are compared to 16 OECD countries covered equally in both, TIMSS and PISA and 10 OECD countries covered in PIRLS.

Chapter 4 (the feminisation of poverty) uses two data sources, the ISSP with data from 1999 and the second and third round (1989-1992 and 1995-1997)[22] of the World Value Survey (WVS)[23]. The ISSP 1999 (on 'Social Inequality III') covers eight CEE countries (the same data source but different rounds were used for Chapter 2) that are compared to eight pre-1990 OECD countries. The WVS aims to measure socio-cultural and political change across countries and has a wide coverage of issues including questions on economic-well being and respondents' socio-economic background. The coverage of CEE countries is great in this survey with data on 14 transition countries in the 1995-1997 and 12 in the 1989-1992 rounds. These data are compared to a great set of pre-1990 OECD countries. Similar to ISSP, sample sizes are around 1000 respondents per country.

[19] The very recent rounds of PISA 2003 (data available since December 2004) and TIMSS 2003 (data probably available in May 2005) were not included in this Chapter.
[20] For more information on TIMSS and PIRLS see http://timss.bc.edu/
[21] See http://www.pisa.oecd.org/pages/0,2966,en_32252351_32235918_1_1_1_1_1,00.html
[22] This Chapter does not make use of the newest World Value Survey round (1999-2001), available since April 2004), since the question on economic well-being examined was not administered in almost all of CEE countries in this round.
[23] See http://wvs.isr.umich.edu/

Table 1.1: Overview on data sources used and competitor data

	Used data sources						Competitor data sources not used in study	
	Chapter 2	Chapter 3			Chapter 4			
	ISSP	TIMSS	PISA	PIRLS	ISSP	WVS	CEEB	ESS
Data collection frequency	Annual	4 years cycle	3 years cycle	5 year cycle	Annual	3 year cycle	Annual	Annual
Date of collection used in study (or available for competitor data)	1988, 1991, 1994, 1998	1995, 1999	2000, 2002	2001	1999	1989-1992, 1995-1997	1990-1997	2003
Age group covered	Pop. sample	7th and 8th grade (14 year-olds)	15 year-olds	4th graders (9 to 10 year-olds)	Pop. sample	Pop. sample	Pop. sample	Pop. sample
Main topic focused on	Religion	Educational Achievement			Social Inequality	Societal values	Economic, political change	Attitudes and beliefs
Module on economic well-being					X	X		
Module on gender stereotypes	X							X
Sample size of CEE countries covered								
Armenia						2,000	1000	
Azerbaijan						2,002		
Albania			4,980				1013	
Belarus						2,092	1061	
Bulgaria	1,102	3,273	4,657	3,460	1,102	1,072	1035	
Czech Republic	1,223	3,453	5,365	3,022	1,834	930	1021	X
Estonia						1,021	1071	X
Georgia						2,593	1006	
Hungary	1,000	3,183	4,887	4,666	1,208	999	1002	X
Kazakhstan							1002	
Latvia	1,200	2,873	3,893	3,019	1,100	1,200	1017	
Lithuania		2,361		2,567		1,009	1012	
Macedonia, Republic of		4,023	4,510	3,711		995	1000	
Moldova		3,711		3,533		984		
Poland	1,147		3,654		1,135	1,153	1004	X
Romania		3,425	4,829	3,625		1,103	1195	
Russian Federation	1,703	4,332	6,701	4,093	1,705	2,040	1065	
Slovak Republic	1,284	3,497		3,807	1,082	466	1066	X
Slovenia	1,006	3,109		2,952	1,006	1,007	1114	X
Ukraine						2,811	1200	X

Note: sample sizes for TIMSS refer only to 8th graders and for WVS to most recent data available for country. Information on ISSP data in Chapter 2 refer to the most recent round examined: 1998. Sample sizes for CEEB refer to year where data on the largest set on CEE were available, 1996. ESS data on the 2004 round are not yet available and hence not the sample sizes of countries, however, the general aim is to reach samples of 2000 respondents. In 2002, ESS covered 4 CEE countries only.

Competitor data sets not used in this study

There are not many cross-national data sets available that provide information on a great set of both, CEE and OECD countries. The most well-known is probably the Eurobarometer. The Central and Eastern Eurobarometer (CEEB)[24], carried out on behalf of the European Commission between 1990 and 1997 (recently replaced by the Candidate Countries Eurobarometer) can be combined with the Standard Eurobarometer in order to receive a greater data set on both, countries in the East and the West. Table 1.1 presents the impressive country coverage of the CEEB for the year with the highest participation of CEE countries: 1996 (in more recent rounds only ten CEE countries were covered in the Candidate Country Eurobarometer). However, the CEEB examines economic and political change and attitudes to Europe and is not designed for providing a comprehensive set of variables measuring gender stereotypes or gender differences in economic well-being.[25]

Another recently established data source is the European Social Survey[26], organised by the Centre for Comparative Social Surveys, City University London. It is a potential source for the examination of gender attitudes in the future. The second round (2003), for that data are not yet available, includes for the first time a rotating module on family work and well-being. However, compared to the WVS and ISSP the survey covers still a smaller sample of CEE (4 in 2002 and 7 in 2003) and OECD countries. In addition, the data are not comparable over a longer time period (since questions on the same topic are also differently formulated than those in WVS and ISSP).

A competitive data source for examining educational achievement is the International Adult Literacy Survey (IALS). This household survey measures literacy on people of working age (16-65). However, it covered only 4 CEE countries and does not have data available on pupils in compulsory schooling.

Value added of this study as regards the use of the data

This study makes use of many recent and large cross-national data sources for the examination of gender inequality in CEE. The great coverage of OECD and CEE countries of the selected surveys permits to analyse how women fare in CEE relative

[24] See http://www.gesis.org/en/data_service/eurobarometer/
[25] Nevertheless, the CEEB provides data on people's judgement regarding the reform process. An examination of gender differences of these data would be an interesting analysis to undergo.
[26] See http://www.europeansocialsurvey.org/

to those in OECD countries on specific aspects, an analysis generally not conducted across such a large set of countries.

In addition, the selection of these surveys with a specific emphasis on e.g. gender attitudes and women's work open room for the use of new measures of gender equality in terms of preferences to gender stereotypes, economic well-being and educational achievement.

A further emphasis of this study regards the robustness of survey results and the impact of the choice of measure of gender inequality on observed outcomes. In case several cross-national data sources are available measuring similar topics, this study compares results of these different surveys. For example, TIMSS, PISA and PIRLS results are generally analysed in isolation. Chapter 3, however, draws evidence on gender inequalities in educational achievement from all three sources. As far as the feminisation of poverty is concerned, Chapter 4 addresses the issue that the choice of the measure impacts upon results by using WVS and ISSP data.

1.1.7 Limitations of this study

This study has several limitations:

- The use of micro data on people's judgements and pupils' achievement comprises itself shortcomings: the examination of people's responses is only possible if it is assumed that the answers are comparable between individuals and countries.
    - An implicit assumption of the analyses in this study is that the problems of the translation of questionnaires into different languages did not impact upon countries' results. This assumption is impossible to test. However, even if translation impacted upon countries' outcomes it is doubtable that this has a great effect on the results of gender differences in these countries.
    - Regarding educational achievement results of PISA, TIMSS and PIRLS (Chapter 3), item response models were used for the calculation of pupils' educational achievement scores that are comparable across countries. However, these models, their application and the lack of transparency regarding the robustness of results derived from differently applied item response models have raised criticism questioning comparability of results across countries (Goldstein, 2003; Brown and Micklewright, 2004;

Micklewright *et al.*, 2005). This problem is one motivation for the use of three different educational achievement surveys in order to see whether results on gender equality in educational outcomes are robust across these sources.

  - Chapters 2 and 4 use cross-national survey data on people's attitudes and subjective well-being. However, it is sometimes argued that these data do not allow for interpersonal comparisons of responses since individuals 'anchor' their scale at different levels. Once anchoring is not random it causes the estimators to be biased. I will deal with the problem in each Chapter separately. However, in line with a growing range of literature, the study assumes that micro-data on people's attitudes as well as people's estimated wellbeing are meaningful, since these data have proved to be successful in predicting e.g. individual and economic factors.

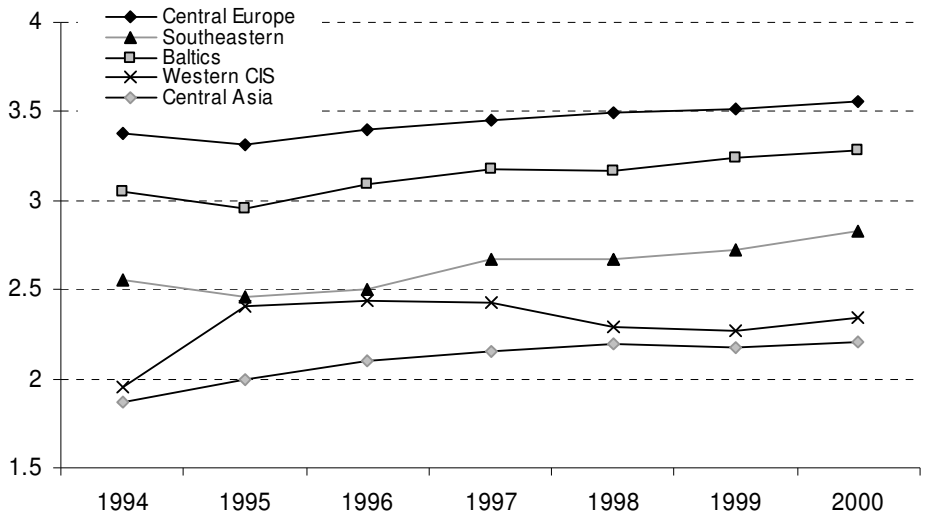
- Even though this study covers a large number of transition countries, it generally excludes the Caucasus and Central Asia (with the exception of Chapter 4 on the feminisation of poverty). Given that these countries are different in terms of economic, cultural and social development this study's results cannot be generalised for the whole region of CEE.
- The focus on the three subjects 'gender attitudes on women's work', 'gender inequality in educational achievement' and 'the feminisation of poverty' neglects many other fields that are important for the examination of gender inequality. For example, gender differences in political representations, gender equality in the household and gender equality in the first and second economy might be other interesting subjects for the presentation of a more encompassing picture on gender equality. However, this study chose an in-depth analysis of the three subjects that I regard as most important for women's economic empowerment.
- Depending on the subject examined and the method used each analysis has its own limitations that are discussed in the Chapters separately.

For providing a more general background on gender inequality in transition countries, the following Sections discuss the economic developments during transition (Section 1.2) and gender-specific developments (Section 1.3).

1.2 Economic developments during transition

The transition process from the centrally planned to the market system evolved broadly by very similar principles and consisted of price and trade liberalisation, privatisation of state-owned enterprises and tax as well as legal reforms. Countries did, however, differ both in terms of their initial conditions (e.g. time spent under communism, degree of prior liberalisation, accumulated debt) and in the speed by which reforms were implemented. Figure 1.1 illustrates the implementation of reform policies with the help of the EBRD transition index[27]. Excluding countries' income or growth elements for its calculation this index provides an assessment of the progress in transition referring to the areas of market and trade liberalisation, enterprises and financial institutions. Progress is measured by using a scale from 1 to 4+, meaning the higher the scale the more profound the system change towards a market economy. A value of 4 (and 4+) implies that the country has reached the standard of the market economy.

Figure 1.1: EBRD reform index



Source: EBRD transition report. Note: the following countries are covered by regions. Central Europe: Czech Republic, Hungary, Poland and Slovakia; Baltic States: Estonia, Latvia and Lithuania; South-Eastern Europe: Bulgaria, Romania and Albania; Western CIS: Belarus, Moldova, Russia and Ukraine; Central Asia: Kazakhstan, Tajikistan, Turkmenistan and Uzbekistan.

The figure clearly shows the advancement of institutional reforms in Central Europe while reform implementation remains low within the sub-regions Central

[27] The EBRD reform index, taking into account the emergence of typically market conform institutions, measures the three main transition aspects: markets and trade, enterprises and financial institutions. The indicators for theses aspects of reform are price liberalization and competition policy, privatization and restructuring of enterprises and interest rate liberalization. (EBRD, 2000).

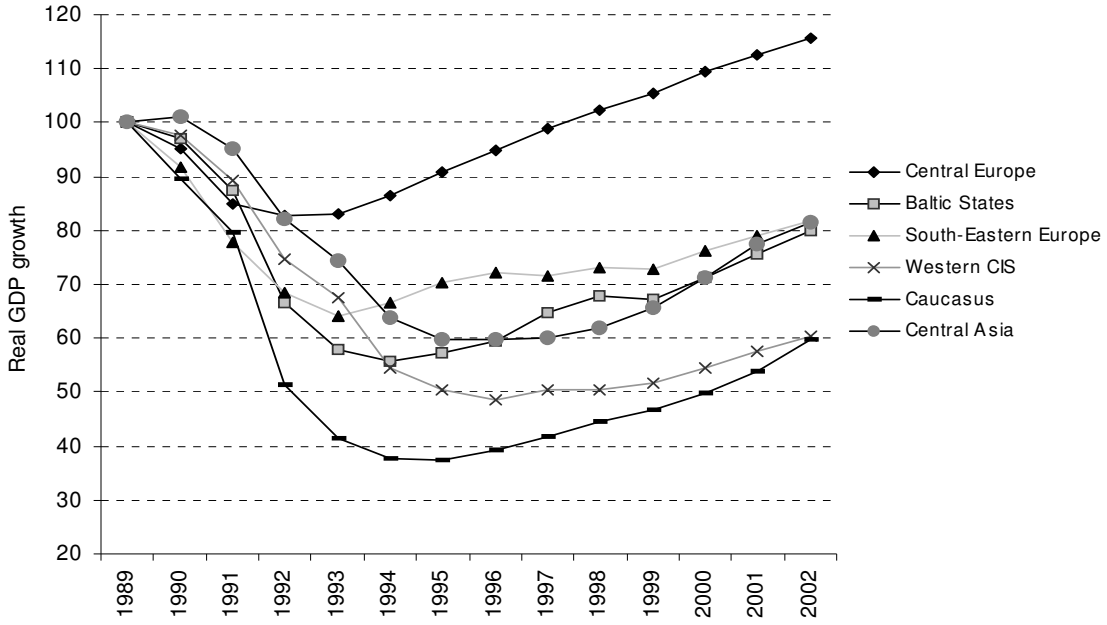
Asia, Western Commonwealth of Independent States (CIS) and South-eastern Europe, given that in 2000 figures of reform status for these regions are below those values of other sub-regions in 1994. While the introduction of institutional reforms has been pushed forward quite steadily in Central Europe and Baltic states, the other regions appear to have experienced reversals of previous reform efforts. These evident differences in actual reform progress are most likely to have implications on economic development.

Throughout all sub-regions the reform process was accompanied by a severe fall in GDP in the early 1990s. Figure 1.2 shows the real GDP growth in different regions. GDP in 1989 was set to 100. In all regions GDP fell steeply with the onset of transition. The recovery of GDP however varied between regions. Only in Central Europe economic growth was higher in 2002 than it had been at the end of the communist area. In South-Eastern Europe, Central Asia and Baltic States GDP was still about 20 percent lower in 2002 than before transition. Figures are even worse for Western CIS and the Caucasus, where economic growth plummeted during transition and still seems not to find a real boost. In 2002 GDP in both these regions reached only 60 percent of that in 1989.

A large range of literature shows that it is both initial conditions at the start of the transition paired with policies that can explain different growth in transition countries. (e.g. de Melo *et al*., 1997; Berg *et al.,* 1999)

The output fall as well as high inflation were associated with large drops in real wages. Figure 1.3 presents the real average wage growth by region. This indicator serves as a proxy for the quantity of goods and services a money wage can buy and is adjusted for inflation. People's available income declined massively throughout all regions. Not surprisingly given trends in GDP growth discussed above, people in Central Europe suffered less than in other regions. In 1991, the peak of the real wage fall in Central Europe shows an 'only' about 30 percent lower real wage than in 1989 (that was set to 100). However, only in 2001 real wages reached the pre-transitional standard of 1989 in Central Europe. In all other transitional regions, real wages in 2001 did still not meet the level achieved 12 years before under communism.

Figure 1.2: Real GDP growth by region, index 1989=100

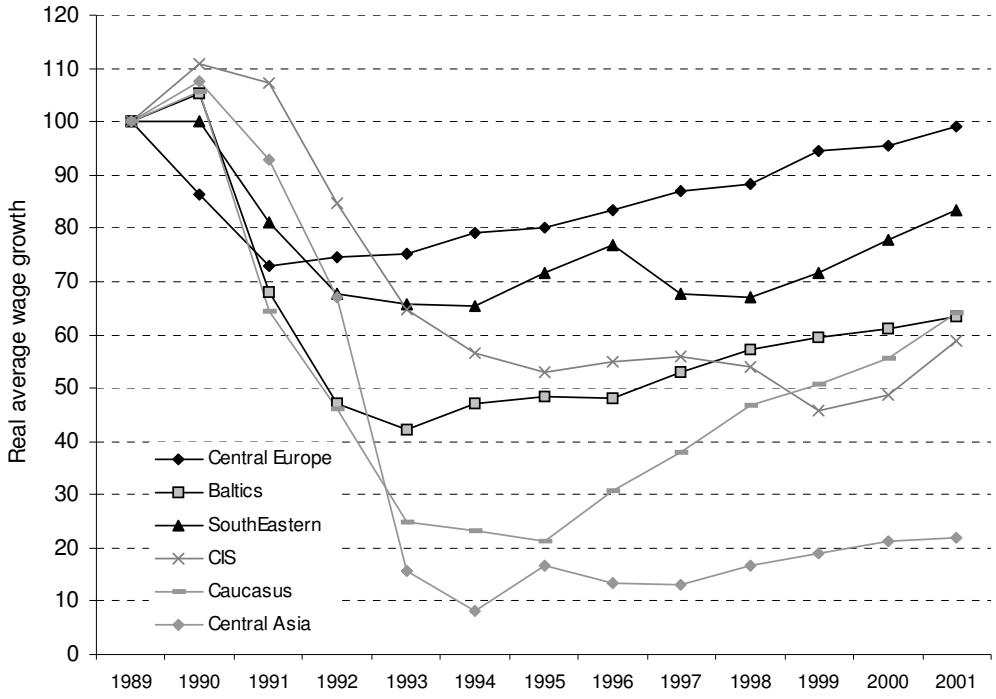


Source: TransMONEE 2003 database. Note: the following countries are covered by regions. Central Europe: Czech Republic, Hungary, Poland, Slovakia and Slovenia; Baltic States: Estonia, Latvia and Lithuania; South-Eastern Europe: Bulgaria, Romania, Albania, Macedonia, Croatia, Serbia and Montenegro; Western CIS: Belarus, Moldova, Russia and Ukraine; Caucasus: Armenia, Azerbaijan and Georgia; Central Asia: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

The situation is worst in Central Asia. In 1994 real wages plummeted to a level lower than 10 percent of the pre-transitional height. In 2001 still people have only about one fifth of the real wages available they received before transition. South-Eastern Europe, the Baltic States, Southern CIS and the Caucasus take middle positions with real wages in 2001 that are about 20 to 40 percent lower than in 1989.

However, the large reduction of people's income and living standard did not hit people in transition countries equally. The declining income in CEE was accompanied by increased income disparities in all transition economies. Starting with some of the lowest levels of income inequality in the world (Atkinson and Micklewright, 1992), during transition income inequality rose significantly and in some CEE countries reached similar or even worse levels than that of OECD countries (World Bank, 2002).

Figure 1.3: Real average wage growth by region, index 1989=100

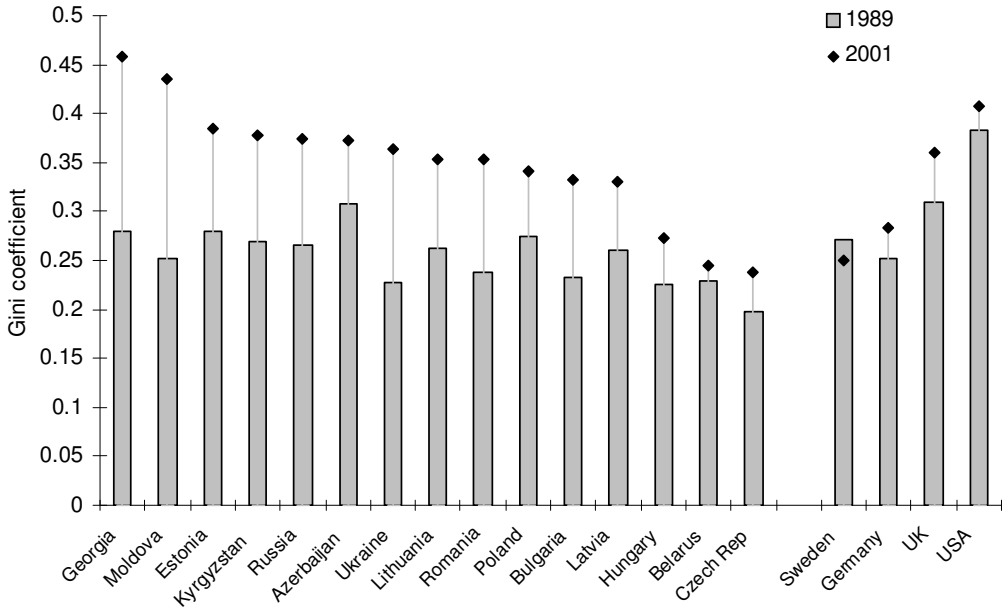


Source: TransMONEE 2003 database. Note: the real average wage is a proxy for the quantity of goods and services a money wage can buy, the real wage represents the money wage adjusted for inflation. The following countries are covered by regions. Central Europe: Czech Republic, Hungary, Poland, Slovakia and Slovenia; Baltic States: Estonia, Latvia and Lithuania; South-Eastern Europe: Bulgaria, Romania, Albania and Macedonia; Western CIS: Moldova, Russia and Ukraine; Caucasus: Armenia, Azerbaijan and Georgia; Central Asia: Tajikistan and Uzbekistan.

Figure 1.4 presents Gini coefficients of household income per capita for a selection of transition countries for that data were available in 1989 and 2001 and for Sweden as an OECD country with a low Gini coefficient, the USA as an example for a high Gini coefficient and the UK and Germany as countries between. The increase in income inequality was particularly severe in Georgia, Moldova, Ukraine, Romania and Bulgaria. However, in Central Europe and Belarus income inequality increased only slightly.

In many transition countries the increase in the Gini coefficient was also large compared to changes and absolute levels of income inequality in OECD countries. In 1989 people in eleven out of the 15 presented transition countries experienced lower income inequality than people in Sweden. In 2001 however, the Gini coefficient is lower in only 2 transition countries (Czech Republic and Belarus) than that in Sweden. In 2001, two transition countries (Georgia and Moldova) are associated with even higher income inequalities than those predominant in the USA, the OECD country with greatest income inequality.

Figure 1.4: Gini coefficient in 1989 and 2001 for transition countries



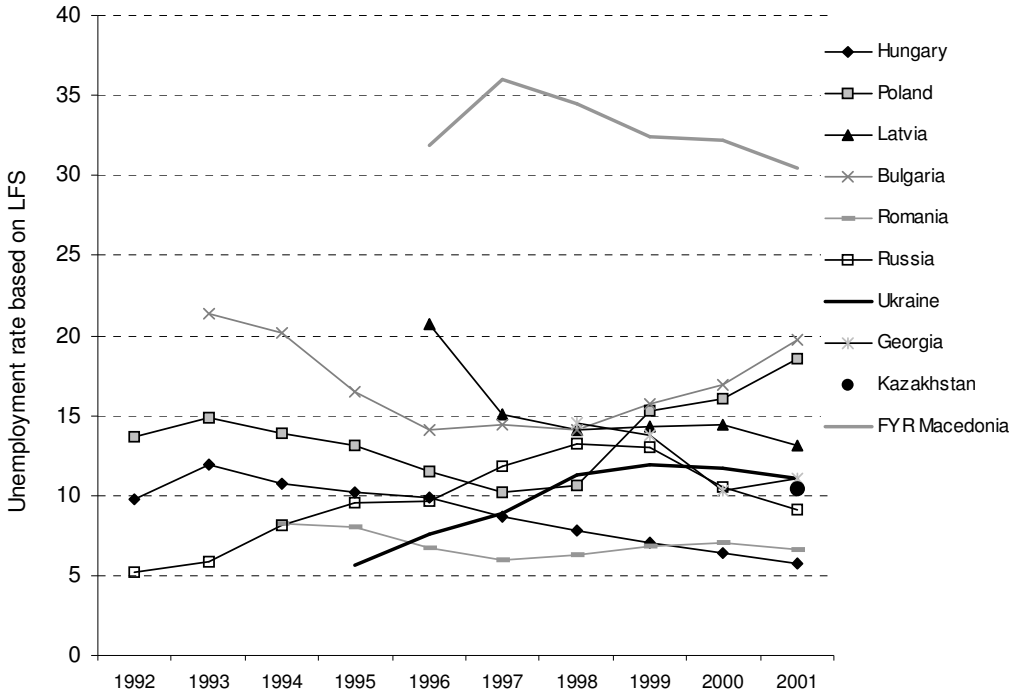
Source: TransMONEE 2003 database for transition countries, Human Development Report 2004 for newer data for OECD and World Bank Deiniger-Squire data set for older data on OECD countries. Note: for Russia Gini coefficient refers to 1998 and for Latvia to 1999. For Sweden, USA and Germany the recent Gini coefficient refers to 2000 and for the UK to 1999. The comparison year refers to 1990 for Sweden, 1986 for the UK and 1987 for Germany. Lowest estimates were taken when two data sources were available.

The dramatic fall of average real wages combined with the increasing income inequality in CEE indicates the high vulnerability of especially people at the bottom of the income distribution. They are for example represented by the unemployed as well as by people in work on low wages. Unemployment increased after 1989 departing from an official rate equal or very close to zero during communist regime.

There are two data sources available for the examination of unemployment rates. Official statistics refer to the segment of the labour force registered at labour offices as unemployed and are suspiciously low in some countries. For example, they just meet the 2 percent level in Central Asia and Southern CIS in 2000 (Source: TransMONEE 2003 database, author's calculations). Reasons for these low official estimates are for example low incentives of the unemployed to register given long distances to travel for registration and low unemployment benefits. (UNICEF, 2001) More reliable but less available over time are estimations that derive from labour force surveys[28] of a representative population of a country.

[28] According to the ILO methodology, this category comprises all persons above a specific age who, during a specified brief time-reference period, have been without work (that is, not in paid employment or self-employment), are available for work, and are seeking work (that is, have taken specific steps in the specified period to seek paid employment or self-employment).

Figure 1.5: Unemployment rate based on Labour Force Surveys



Source: TransMONEE 2003 database

Since differences in unemployment rates within regions are large, Figure 1.5 switches to the country level and presents the development of the unemployment rate calculated on the basis of Labour Force Surveys. (Figure A 1.1 in the Appendix presents additionally unemployment rates calculated with Labour Force Survey data for a greater set of countries for 2001.)

In most of the transition countries unemployment remained below 15 percent during transition with the notable exception of Macedonia where about one third of the population was seeking work in 2001. Also in Bulgaria and Poland still about every fifth person is unemployed. However, in most of CEE unemployment rates fell during the mid 1990s with the exception of Russia and the Ukraine. In Romania and Hungary, unemployment rates were low with about 5 percent of the labour force seeking work.

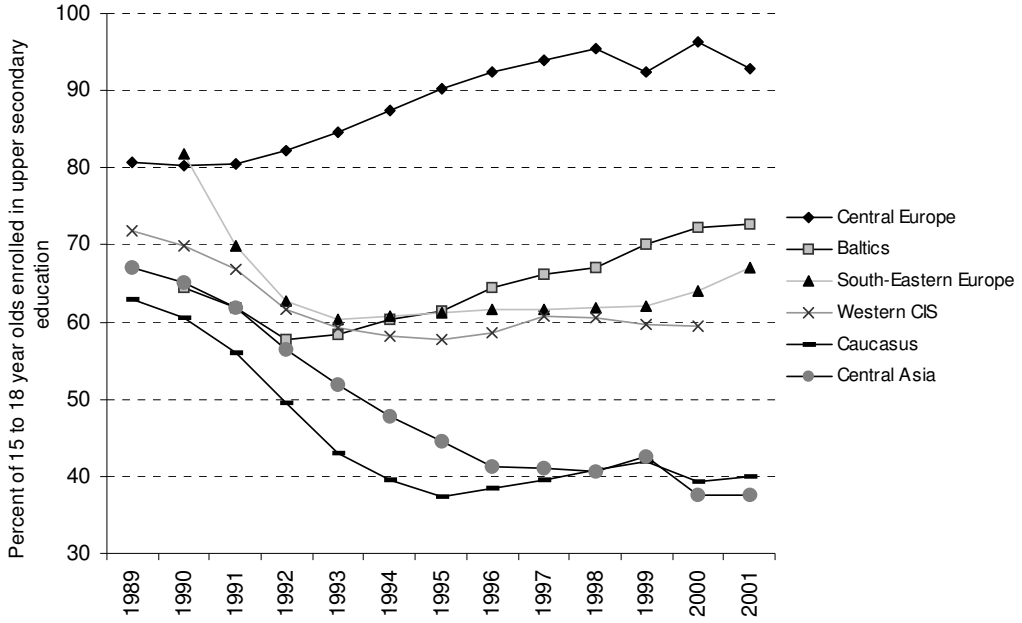
Nevertheless, it is important to note that relative low unemployment figures were achieved at the cost of low wages. As shown in Figure 1.3 real average wages plummeted considerably during transition and minimum wages set by states have

often fallen well below the subsistence minimum (ILO, 1999). Hence, employment was not a guarantee for avoiding poverty in many CEE countries.

The macroeconomic decline and people's economic hardship has had also great impact upon children's educational opportunities. In countries where the fall in output was greatest, spending on education not only shrank in absolute terms but also as a share of the greatly reduced levels of national income. Georgia is the worst example of this (World Bank, 2000b).

Figure 1.6 shows the changes in educational attainment measured by gross enrolment rates[29] of 15 to 18 year-olds in upper secondary education by region and year.

Figure 1.6: Changes in gross enrolment rates in upper secondary education of 15 to 18 year-olds by region



Source: TransMONEE 2003 database. Note: the following countries are covered by regions. Central Europe: Hungary, Poland and Slovakia; Baltic States: Estonia, Latvia and Lithuania; South-Eastern Europe: Bulgaria, Romania and Albania; Western CIS: Belarus, Moldova, Russia and Ukraine; Caucasus: Armenia, Azerbaijan and Georgia; Central Asia: Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan.

Central Europe is the only region where gross enrolment rates in upper secondary education did not fall with the onset of transition. Figures of enrolment in Hungary, Poland and Slovakia compare well with those of other OECD countries

[29] The Gross Enrolment Rate refers to the number of pupils enrolled in a given level of education, regardless of age, expressed as a percentage of the population in the theoretical age group for the same level of education. This stands in contrast to the Net Enrolment Rate which is the number of pupils in the theoretical age group for a given grade/level of education enrolled in that level expressed as percentage of the total population in that age group.

today. However, enrolment in the rest of the transitional regions is lower. Besides Central Europe only the Baltic states managed to increase enrolment rates above the level of 1989. The situation in Caucasus and Central Asia is dramatic: compared to 1989 one third less 15 to 18 year-olds attended upper secondary schools in 2001 in both regions. Figures given in Figure 1.6 do not capture attendance problems that are quite predominant in some transition countries (UNICEF, 1999).

Given these dramatic economic changes, people's hardship and trajectories in educational opportunities during transition, what do we know about the development of gender inequality over time? This will be examined in the next Section.

1.3 Gender equality during transition

1.3.1 General measure of gender equality - the gender development index

Are the CEE countries recognisably 'different' in terms of gender equality from the rest of the world? The answer to this question certainly hinges on the kind of indicator selected. Unfortunately, the choice of economic indicators describing gender inequality is very limited. The Gender Development Index (GDI) and the Human Development Index (HDI), developed by the UNDP, have become increasingly popular in recent years and will be the basis of the following analysis. 'The HDI is a summary measure of human development. It measures the average achievement in a country in three basic dimensions of human development: 1. a long and healthy life, as measured by life expectancy, 2. knowledge as measured by the adult literacy rate and the combined primary, secondary and tertiary gross enrolment ratio and 3. a decent standard of living as measured by GDP per capita.'[30] (UNDP, 2001) The gender-related development index measures achievement in the same basic capabilities as the HDI does, but takes note of inequality in achievement between women and men. The methodology used imposes a penalty for inequality, such that the GDI falls when the achievement level of both women and men in a country go down or when the disparity between their achievements increases. The greater the gender disparity in basic capabilities, the lower a country's GDI compared with its HDI. A value of 1.0 reflects a maximum achievement in basic capabilities with perfect gender equality. The GDI is, therefore, simply the HDI adjusted downwards for gender inequality.

[30] The formula for the HDI is the following: HDI= 1/3 (life expectancy index) + 1/3 (2/3 (adult literacy index)+ 1/3 (gross enrolment index)) + 1/3 (GDP index).

There are two ways for the use of the indicator GDI for this analysis. The application of the GDI alone reflects general human development determined by income, life expectancy and education corrected for gender differences. The disadvantage of the index is therefore that not only gender differences but also other factors of human development are taken into account. This can be avoided by omitting the general levels of human development with the formula

GI = (HDI – GDI) / HDI,

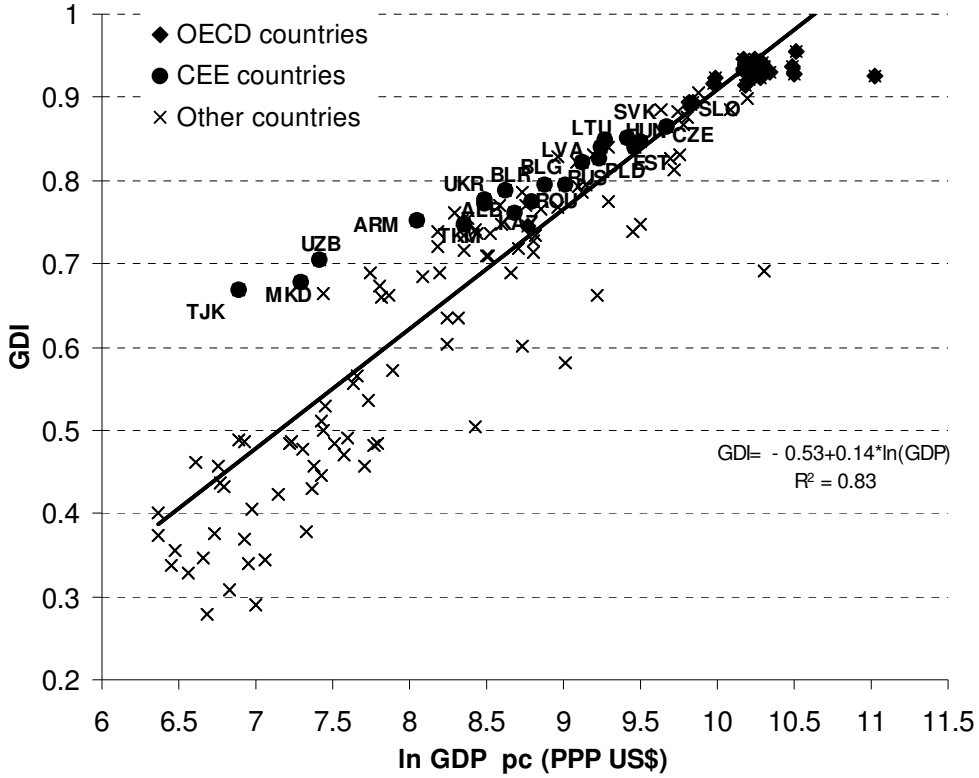
whereby GI is gender inequality[31]. Hence, only gender differences but not the levels of the three factors income, education and life expectancy determine the value of GI.

Although the index GDI has been criticised on several grounds (Bardhan and Klasen, 2000; Dijkstra and Hanmer, 2000)[32], it is extremely useful for the purpose of a world-wide comparison since it combines several indicators corrected for gender differences. [33] Nevertheless, it is noteworthy that the choice of two of the basic factors of the GDI, life expectancy and education might be interpreted as a biased selection for measuring gender inequality in CEE countries where investment into health and education were high given the countries' development. Nevertheless, the indicator can show whether women and men have equal access to these basic provisions.

Since gender equality is positively related to a country's level of development (Dollar and Gatti, 1999) the comparison between countries has to control for the countries' development stage, measured in the following by per capita GDP.

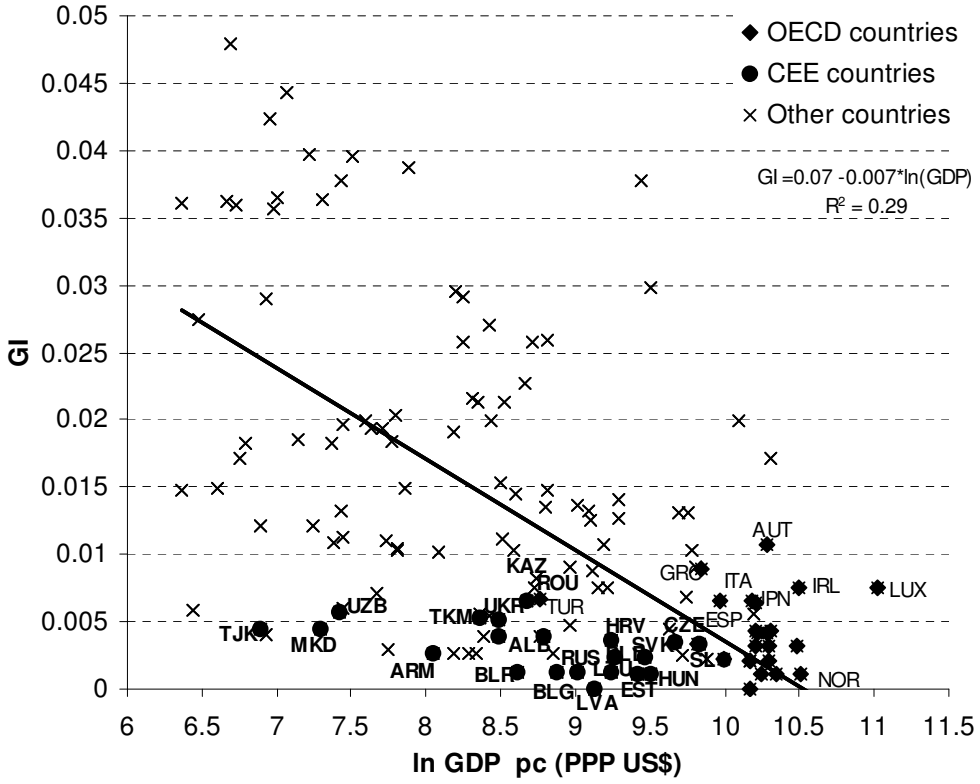
[31] If the difference of both terms is 0 the ideal of gender equality is reached; the higher the differing value the higher is gender inequality.
[32] This criticism lead to a new adapted HDI since 1998.
[33] Another similar index is the Gender Empowerment Index of the UNDP. Since it is only available for a small number of CEE countries it was not used in this analysis.

Figure 1.7: GDI and GDP in 2002



Source: UNDP 2004

Figure 1.8: GI and GDP in 2002



Source: UNDP 2004

Figures 1.7 and 1.8 illustrate the relation between ln GDP per capita (PPP US$) and GDI and GI respectively as introduced before by including data of 20 CEE countries[34] and a large set of (pre-1990) OECD and other countries.

Figure 1.7 demonstrates the high correlation between GDP and GDI. As expected, the wealthier a country the better is its gender development. The correlation between GDI and GDP is predictable since a main factor of the GDI measure is real per capita income, while additionally the other two factors determining GDI, life expectancy and education, correlate with GDP. The striking outcome regarding the CEE countries is that all of these countries lie above the regression line of all countries. Hence, CEE countries have a higher GDI than could be expected from their per capita income level in 2002. This is a surprising conclusion given the economic hardship transition countries went through. Nevertheless, results fit into earlier research, which shows that the transition countries have a higher level of development with respect to certain human capital indicators than other countries once GDP is controlled for. (Gros and Suhrcke, 2000)

Figure 1.8 presents a similar country comparison to Figure 1.7 except that it focuses on gender inequality (GI). Although the GI is determined only by gender differences, we find a correlation indicating that lower GDP is related with higher GI. Hence, gender equality is much more common among wealthy countries. However, within this graph the differences between the CEE and other countries are even much more obvious than outlined in the graph before. Transition countries show more gender equality than can be expected from their level of development. Again, the reform process has not lead to a downgrading of gender equality compared to that of other countries (but we need to remember that the index covers solely education, health and life expectancy). Surprisingly, the level of gender inequality seems to be independent of the level of GDP in transition countries. In addition, pre-1990 OECD and transition countries have similar levels of GI.

Up to now gender inequality for one time point (2002) was compared between CEE and other countries using an indicator that summarises three different dimensions of human development. But how did women's situation change during transition and how do women fare in terms of gender equality based on different single economic indicators? This will be the focus of analysis in the next Section.

[34] CEE countries included are: Albania, Armenia, Belarus, Bulgaria, Czech Republic, Estonia, Hungary, Kazakhstan, Latvia, Lithuania, Macedonia, Poland, Romania, Russia, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

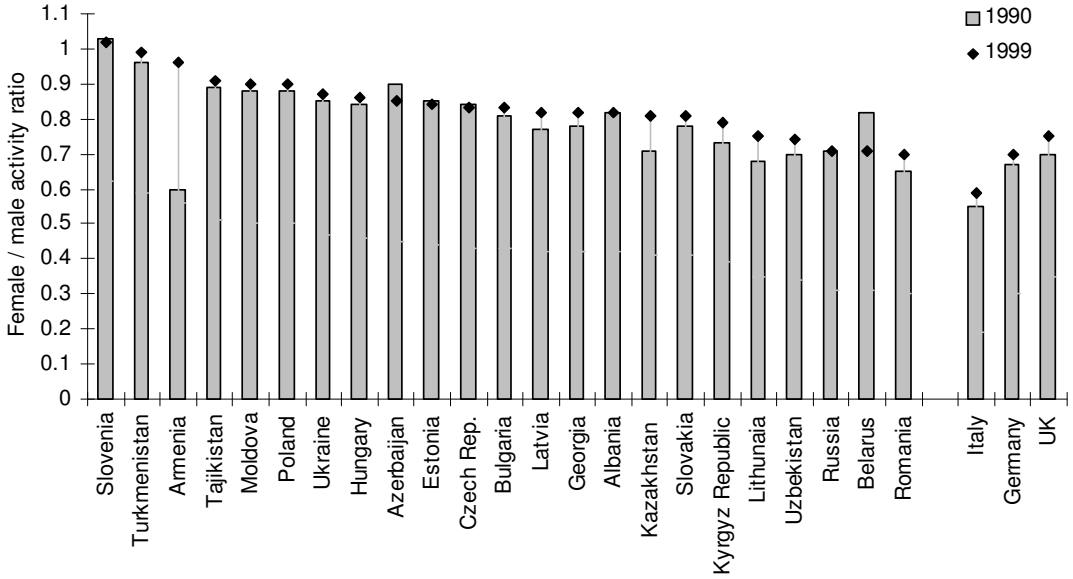
1.3.2 Developments of gender inequality over time

Activity rate and unemployment

Work used to be regarded as one of the highest values within the communist ideology. Being employed did not only provide economic income, social insurance, family benefits and child care institutions but also supplied social integration of the workers by organising leisure time activities and holidays (Lavigne, 1999). Women had to be employed in order to get access to these necessities of life and were ideologically encouraged by party authorities to take part in the economic sector. The idea of women's equal role to men within society facilitated to meet the communist open excess demand for labour by increasingly integrating women into the labour force after World War II. The amount of women's participation in the labour force clearly surpassed international averages. Within the 1970s already Poland, USSR and Romania ranked highest worldwide with a female economic activity rate of about 63 percent compared to 42 percent in the United States and 18 percent in Spain (UN, 1991). These figures increased even more in the later years.

Figure 1.9 shows official data on the female to male activity ratio at the beginning of transition in 1990 and 10 years after for transition countries and Italy, Germany and the UK as a benchmark group of Western industrialised countries.

Figure 1.9: Female to male ratio of activity rate in 1990 and 1999



Source: Genderstats, The World Bank.

These data need to be interpreted with caution given that official statistics do not take activities in the informal sector into account that have increased over time as market liberalisation has evolved in CEE. It can therefore be assumed, that activity rates for women are underestimated in transition countries especially in the later years of the reform process. Furthermore, official activity rates are generally higher than activity rates reported in the Living Standards Measurement Survey, whereby discrepancies are especially high for Central Asia. (Paci, 2001)

In many countries of CEE the female to male ratio of the activity rate surpassed the ratio for Italy, Germany and the UK in 1990 markedly. This underlines the fact that at the onset of transition women's integration in the labour market in the CEE countries was exceptionally high by international standards.

Official figures show that in almost all countries the gender-specific activity ratio increased within 10 years of transition and give therefore evidence that women were not forced out of the labour force. Unfortunately, there is no comprehensive survey data over time available, confirming the trend given by official data. However, less recent data show a decline in activity rates that was fairly equal for women and men (Brainerd, 1997) and hence confirm that women did not fare worse than men regarding their labour market participation.

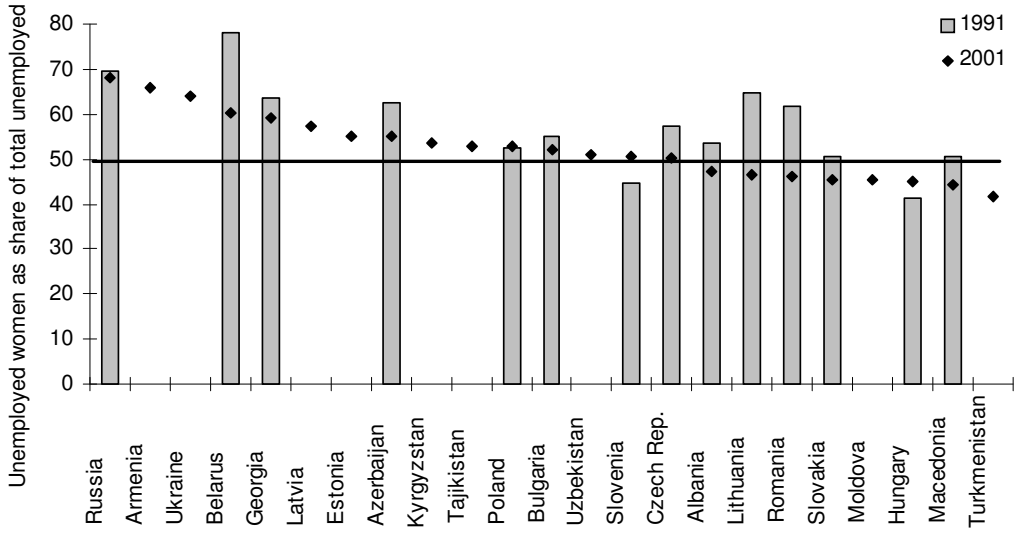
Official data show that Slovenia, Turkmenistan and Armenia reach gender equality in activity rates ten years after transition. On the other hand, Romania, Belarus and Russia meet just a gender activity ratio of 0.7. Nevertheless, official data shows that for neither 1990 nor for 1999 and in none of the transition countries the gender difference was as big as in Italy.

However, even if we had found a decrease of women's activity rates relative to those of men it would be difficult to judge to what extent this can be interpreted as a sign of gender inequality. Women's mass integration into the labour force did not necessarily derive from women's own choice to work during communism. The decision not to work or to work less than full time was socially disrespected, sometimes even prosecuted as well as it went hand in hand with social insecurity. Furthermore, through mass integration into the labour force women had to bear the 'double burden' of family and work obligations (Siemienska, 1996; UNICEF, 1999[35]). Although women were full-time workers, they still were predominantly responsible for child rearing and the household. With the abolition of the communist system the general obligation to work was nullified. Hence, in case there existed a

decline of women's labour force participation during transition relative to that of men this could be interpreted as women's voluntary choice to leave employment.[36]

Besides activity rates, also gender-specific unemployment figures are important for the assessment of equality in the labour market. Figure 1.10 sheds light on women's share of the total unemployed for the years 1991 and 2001 based on official unemployment statistics.[37]

Figure 1.10: Unemployed women as share of total unemployed



Source: UNICEF Monee Database, author's calculations. Note: countries are ranked by the share of unemployed women in 2001.

In 2001, in two thirds of the transition countries a greater share of women than men was seeking employment. In Russia, Armenia, Ukraine and Belarus more than 60 percent of the total unemployed were women. In many countries one- to two-thirds of all unemployed women are long-term unemployed – defined as unemployment lasting longer than one year - and there is some evidence that women are experiencing more difficulties in finding work than men due to their child caring responsibilities (UNICEF 1999).

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[35] See Leven (1994) for Poland, Bacon *et al.* (1994) for Romania.

[36] Of course, during communism there existed also the choice to leave employment in order to work somewhere else. But there was no generally accepted option to choose between employment and staying at home without any participation in the labour market given that the last was related to risk of prosecution and the lack of social security in terms of e.g. social insurances.

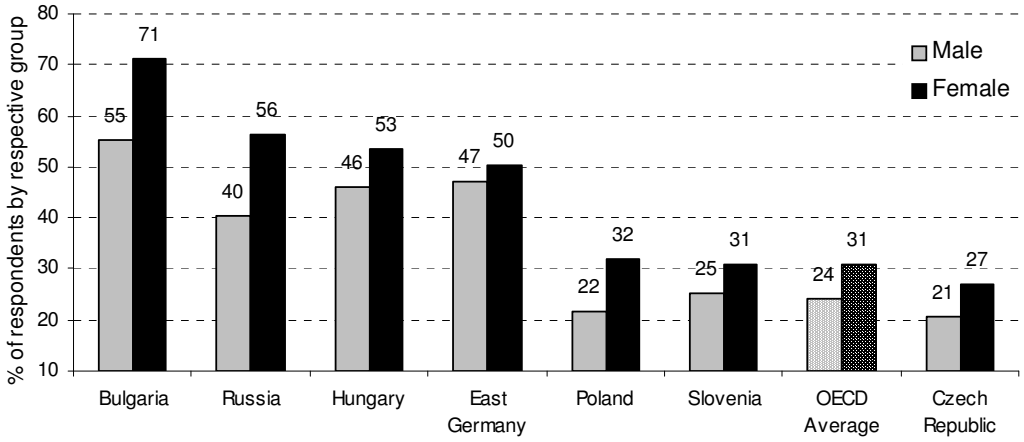
[37] Official unemployment rates are poor indicators, since data are limited by factors such as the size and entitlement condition of unemployment compensation, the anticipated effectiveness of employment services and the amount of coverage provided by the network of labour offices. (UNICEF, 1999)

However, in many countries where data on unemployment are also available for the beginning of transition, women's share among the unemployed was even greater in 1991 (when unemployment rates were still low) than 10 years after. This might indicate a general trend, that female disadvantage is declining over time.

Nevertheless, women's higher proneness for being unemployed is likely to derive from lower labour market opportunities that fit their needs. Figure 1.11 based on the International Social Survey Program (ISSP) 1997[38] on 'Work Orientations' illustrates the percentage of people by gender who have answered 'very difficult' to the following question:

'If you were looking actively, how easy or difficult do you think it would be for you to find an acceptable job? A) very easy, b) fairly easy, c) neither easy nor difficult, d) fairly difficult, e) very difficult, f) can't choose'.

Figure 1.11: Percentage of people finding it very difficult to find an acceptable job



Source: ISSP 1997, author's calculations. Note: OECD countries comprise West-Germany, UK, USA, Italy, Netherlands, Norway, Sweden New Zealand, Canada, Japan, Spain, France, Portugal, Denmark and Switzerland. The OECD figure refers to the unweighted average. For the analysis respondents answering 'f) can't choose' were omitted. Results are ordered by the female percentage of respondents answering 'very difficult'.

With the exception of Poland, Slovenia and the Czech Republic, women in CEE are much more pessimistic about their chances to find an acceptable job than the average women in (pre-1990) OECD countries. More than twice as many women in Bulgaria are sceptical regarding their work opportunities compared to their Western counterparts. Additionally, gender differences are especially high in Bulgaria and

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Especially the low unemployment rate in Russia can be explained by extremely low benefit levels (Bridger, 1999).

[38] For details on this survey see the Introduction and http://www.gesis.org/en/data_service/issp/data/1997_Work_Orientations_II.htm

Russia, where around 15 percent more women than men consider their chances to find an acceptable job as very difficult.

In OECD countries, differences between genders are highest between people with low educational attainment. In contrast to CEE countries, gender differences between tertiary educated people are marginal in the industrialised West. The general trend shows that women in rural areas estimate their chances lower than women in urban areas. Child-upbringing is a further decisive factor hampering job opportunities: focusing on the age group 18 to 34 in CEE countries, about 40 percent of women with children in contrast to 21 percent women without children regard job finding as very difficult, while within OECD countries the relation of answers by women with and without children is only 18 and 16 percent respectively (author's calculations, figures refer to unweighted regional averages). This result suggests that the presence of children and women's responsibility for childcare considerably reduces the probability of female employment in transition countries.

Occupational Segregation

Despite the communist proclamation of equal rights and women's high integration into the labour force the countries of CEE seemed not to be more successful in diminishing occupational segregation than other countries of the world (Anker, 1997).

Within the communist period women were dominantly employed in education, health and social care sectors[39] as well as they accounted for a majority of workers in trade, culture and arts, and finance sectors. They were underrepresented in construction, electricity and gas supply, transport, business and public administration sectors. (EP, 1996) Beside these horizontal components of labour segregation, vertical segregation occurred since women generally occupied lower and mid-level positions with low responsibilities while men held pre-dominantly managerial posts even in 'feminised' sectors. Since women were over-represented both in lower positions and in sectors with lower average wages[40], occupational segregation influenced women's salaries and decision-making potential decisively (McMahon, 1994).

With the states' diminishing role, the economic restructuring and the emergence of the private sector, employment has become more diversified since the

[39] In Czechoslovakia, Poland, Yugoslavia, Albania and Latvia women's share within these sectors comprised more than 70 % (EP, 1996; UNICEF, 1999)

[40] McMahon (1994) illustrates for Russia, that higher participation rates of women in a sector were related with lower average salaries within this sector. For Romania, see: Bacon et al. (1994).

onset of transition. Due to the shift from the emphasis on heavy industry and construction sector to the development of the service sector, women were disproportionately employed in sectors that gained employment shares during transition[41]. Nevertheless, the impact of this restructuring on women's newly emerging opportunities has differed between transition countries. For example, in Slovenia men lost employment while women filled the new demand. On the other hand, in Estonia men disproportionately filled new openings in female sectors (Orazem and Vodopivec, 2000) so that women had to face more competition in jobs earlier disregarded by men.

Gender pay gap

The gender specific occupational segregation is closely connected with the 'gender pay gap', which is insofar of great importance as it has a direct effect on gender differences in living standards, pensions, unemployment benefits and other benefits paid to workers. As discussed above, women were employed in branches and positions, which were typically of comparatively low prestige so that they obtained lower earnings than men. Ogloblin (1999) has shown for the labour market in Russia in the early 90s that by controlling for education and work experiences occupational segregation is a decisive factor for explaining the gender pay gap.[42]

Jurajda and Planovsky (2000) for Czech Republic and Slovakia and Newell and Reilly (2001) for several transition countries show that most of the gender pay gap remains unexplained and therefore can be expected to be due to discrimination. In contrast, Orazem and Vodopivec (2000) using similar control factors state that only a marginal part of gender pay gap is explained by discrimination practices in Estonia and Slovenia. Quantile regression analysis revealed that there are larger gender pay gaps and more discrimination in the higher relative to the lower paid jobs (Newell and Reilly, 2001)[43].

[41] Nevertheless, the service sector remains relatively small in CEE compared with OECD countries. While in OECD 91 % of contributions to public employment derive from the service sector and 83 % in developing countries, only 65 % are gained through the service sector in CEE countries. (Hammouya, 1999)
[42] Similar results received Newell and Reilly (1996).
[43] For similar results in Hungary see: Price (1999).

Regarding changes in wage differentials the predominant part of literature[44] reveals that the gender pay gap decreased or remained stable during the transition process in Central Europe.[45]

There are many factors determining these transitional changes of gender wage differentials.[46] Within the communist area wages were set according to a centrally stipulated wage grid that compressed earning structures (Munich *et al.,* 1999) and returns to education in centrally planned economies (Newell and Reilly, 1999). The rise of income inequality[47] just after the start of transition widened wage discrepancies depending on the degree of liberalisation of the wage grid (Brainerd, 1997). This can be confirmed by the fact that wage gaps remained lowest in the public sector which continued to be more or less centralised in most of the transition countries while it increased dramatically in the non-public sector (Jurajda *et al.,* 2000; Ogloblin, 1999). The widening of the income inequality has, therefore, been an argument for the hypothesis of a deterioration of women's earnings, since they occupied disproportionately the lower half of the earnings distribution before transition (Blau and Kahn*,* 1994).

Alternatively, the loosening of the wage grid can also be used as an argument to explain improvements of gender pay gaps in Central Europe. Through the decentralisation of wage determinations competition became more important as a factor for selecting employers so that a higher demand for educated labour emerged. This lead to rising returns to education throughout the transition process (Munich *et al.,* 1999, Newell and Reilly*,* 1999) from which women - in some of the countries holding equal, in other countries holding even more human capital assets than men - benefited from.

[44] See: Newell (2001) for 11 countries of CEE; Brainerd (1997) for Central Europe; Reilly (1997) for Russia, Leven (1994) for Poland, Orazem and Vodopivec (2000) for Slovenia and Estonia. For a summary of results on the gender pay gap see UNICEF (1999).

[45] However, more recent data on Poland suggests that the narrowing of the gender pay gap was only a temporary phenomenon of early transition (Grajek, 2001).

[46] Hunt (1998) has shown that an about 10 % fall in the gender pay gap in the first half of the 90s in Eastern Germany derived from the withdrawal from the labour market of these women who were situated in the lower wage groups at the onset of transition.

[47] Beside decentralized wage settings also industrial and occupational restructuring could have contributed to the rise of income inequalities. The drift towards non-manual employment lead to rising relative wages and employment in the service sector, falling employment and rising wages in the production sector and declining wages in agricultural branches. (Newell, 2001)

Work benefits

A major factor determining women's labour market participation are work related child care benefits including maternity[48] leaves, parental leave[49], as well as inexpensive or free child care facilities. Although the leave options help parents and especially women to take care of small children and provide guarantees of re-entering the labour market in adequate positions, they affect career and earning opportunities. The provision of childcare facilities enables women to combine work and home duties. Hence, work benefits significantly shape women's supply behaviour on the labour market, since they provide incentives for women's work.

The socialist system's provision of childcare facilities within public enterprises was outstanding in terms of quantity by international standards. Nevertheless, the quality of these services was a matter of concern and not all countries managed to provide sufficient services. Since parental leave was not costly given the provision of quite low benefits for parents, governments often favoured extended parental leave over large-scale investment in day-care facilities. (UNICEF, 1999)

The real value of childcare related work benefits shrunk during transition, since general public expenditure on family benefits decreased throughout the region. In almost all CEE countries family allowances declined through the later 1990s. Especially in CIS and Central Asia these drops were sharp compared with Central European countries. (World Bank, 2000c)

Besides the focus on declining financial transfers for families and legislation, changing enterprise environments had a great impact on women's decision to take advantage of family related legislation. Since work benefits were offered by a centralised system and fell mostly into the responsibility of the government, women's maternal duties were not regarded as disadvantageous or costly within public enterprises before transition. However, the legislation from 1990 to 1992 transferred the responsibility for financing childcare related benefits from the Social Insurance Fund – or the government – to local enterprises (Lavigne, 1999). Hence, women lost a part of their competitiveness with men, since the hardening budget constraint resulted in employers considering indirect costs related to maternity leave and women's legal claim of job guarantee after parental leave. In consequence, women had to be

[48] Maternity leave regards women's and children's health and is consequently only available for women. It is similar to social insurance benefits so that women receive wage compensation.

competitive with men and could not make use of generous maternity leave provisions but had to negotiate with employers about their parental leave options. Therefore, it was not shrinking social provisions by governments that reduced the actually taken advantages of maternity and parental benefits but new labour force constraints. (UNICEF, 1999)

Women and education

The gender equality in basic educational enrolment during compulsory schooling that was achieved under communism has been maintained also during the transition process. In all sub-regions girls still accounted for between 48 and 49 percent of enrolled pupils in 1999[50].

In CEE countries vocational and technical schooling acquired greater emphasis in the educational system than the general secondary schooling that leads to the admission to universities. Boys commonly frequented vocational schools more often than girls which resulted in the pre-transitional phenomenon that relative to men employed women had a higher education in regard to finished general secondary and tertiary education, but did not have the same chances in the labour market since their occupational skills were less oriented towards industrial production than those of men. (Leven, 1994) At the onset of transition many enterprise-based vocational schools were closed. Additionally, general secondary education gained attraction since general schooling was increasingly regarded as more suitable to prepare students for the labour market in a market economy environment. Both factors initiated a decrease of vocational and technical secondary school enrolment in all sub-regions with the exception of Central Europe. The fall was particular steep in South-Eastern Europe: about 90 percent of all 14 to 17 years olds were enrolled in vocational education in 1989 compared to only 45 percent 10 years later. (TransMonee Database) The relative decline in vocational education has pushed more boys towards general education, so that the female share of secondary general enrolment has fallen in almost all sub-regions with the exception of the Caucasus and Central Asia. The decline in the female share in general secondary enrolment does, therefore, not reflect shrinking women's participation in general terms but the increased attraction of general secondary schooling for boys. (UNICEF, 2001)

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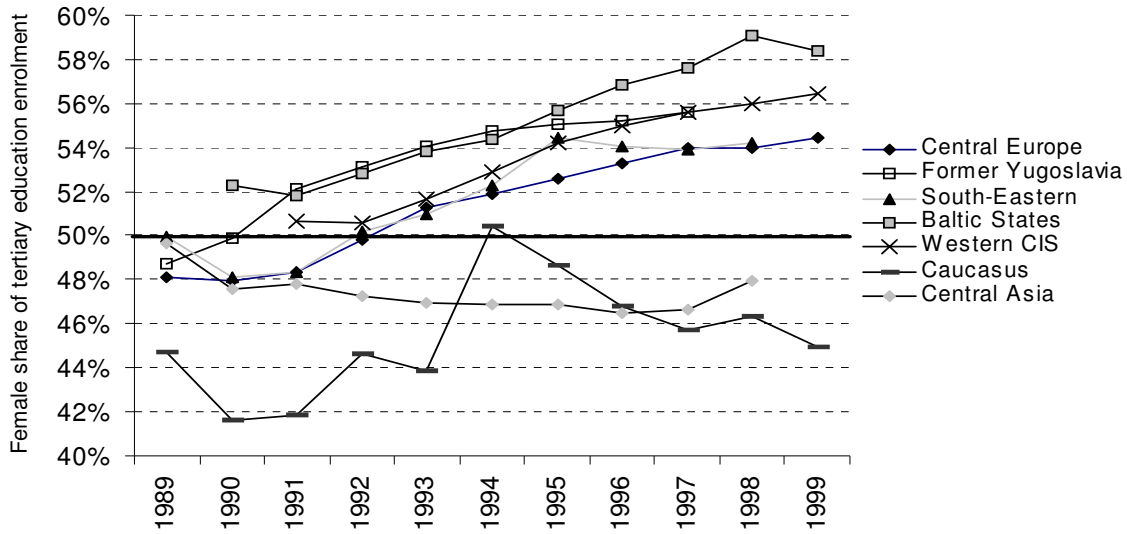
[49] Parental leave is normally available for both parents and regards a period of time in which a parent can take care of a child whereby reemployment is guaranteed. Since within this time there exists no wage compensation, it is rationally best if the parent with the lowest income takes parental leave.
[50] Source: TRANSMonee Database

Enrolment rates in tertiary education have risen steadily in all sub/regions with the exception of Central Asia and the Caucasus. In 1999 in Central Europe, the Baltic States and the Western CIS tertiary enrolment exceeded 30 percent. (UNICEF, 2001)

In most of the sub-regions, female tertiary enrolment has risen faster than that of males, which is often captured by the term 'feminisation of higher education'. Figure 1.12 shows this striking trend by regions in CEE.

Figure 1.12: Female share of tertiary education enrolment, 1989 - 1999



Source: UNICEF 2001

In Central Europe, former Yugoslavia, South-Eastern Europe, the Baltic States and the Western CIS the female share in tertiary enrolment was between 4 and 6 percent points higher than at the beginning of the decade. In addition, in those regions about 4 to 8 percent points more women than men are enrolled in tertiary education. On the other hand, in Central Asia and Caucasus still more men than women attend tertiary education.

1.4 Outline of this study

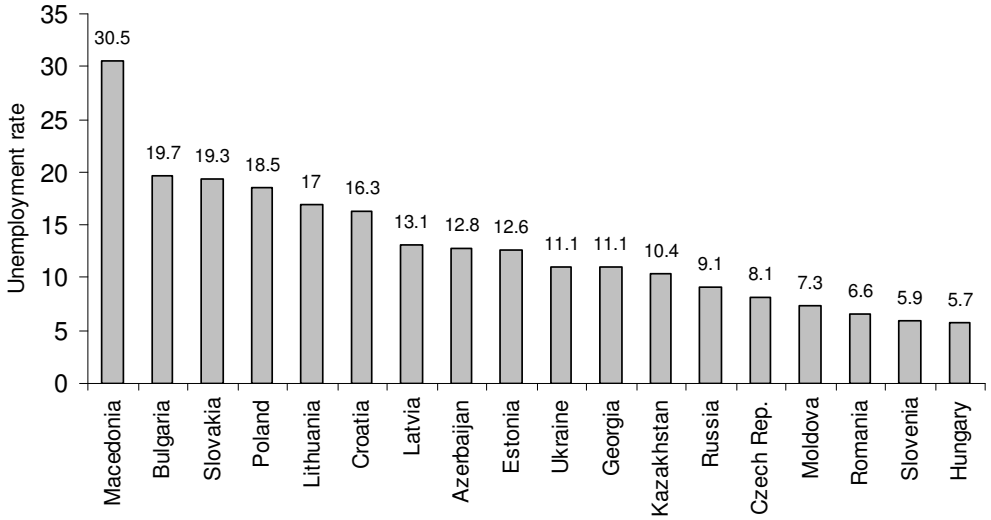
The remainder of this study is composed of four Chapters. The following three Chapters examine gender equality in CEE countries for a different empirical field so that each Chapter can also stand on its own as an independent study. Chapter 2 focuses on gender equality in the labour market, Chapter 3 examines gender equality in educational achievement and Chapter 4 analyses the feminisation of poverty.

However, the Chapters form one unity regarding the approach of how gender equality is examined. Throughout all three Chapters the study compares transition countries with the benchmark of pre-1990 OECD countries and uses micro-data of recent and large cross-national surveys for the examination of the subject in question.

Each Chapter comprises an introduction, the substantive sections and ends with a conclusion. The final Chapter 5 summarises results and discusses policy implications.

1.5 Appendix

Figure A 1.1: Unemployment rate in 2001



Source: TransMONEE 2003 database. Note: unemployment rate based on labour force survey concept. According to the ILO methodology, this category comprises all persons above a specific age who, during a specified brief time-reference period, have been without work (that is, not in paid employment or self-employment), are available for work, and are seeking work (that is, have taken specific steps in the specified period to seek paid employment or self-employment). This concept differs from registered unemployment, which refers to the segment of the labour force registered at labour offices as unemployed.

2 Gender Equality in the Labour Market: Attitudes to Women's Work

2.1 Introduction

The transition process from centrally planned to market economies in Central and Eastern Europe (CEE) confronted the population of post-communist countries with a change of labour market structures. Women's chances to integrate successfully in new work relations are very much dependent on the prevalence of gender equality in CEE labour markets.

Gender equality in the labour market is often measured by comparing women's and men's economic characteristics, like gender-specific human capital, labour force participation rates and the gender pay gap. If these economic measures are applied in order to compare gender equality in the labour market between CEE and Western European countries we find generally that CEE countries keep up perfectly well with their Western neighbours (as noted in Chapter 1).

However, pure economic factors might not catch the 'whole truth' of gender equality. Even though women's labour force participation rates were much higher in CEE than in the industrialised West during communism there is great scepticism that this implied higher gender equality in CEE than in pre-1990 OECD countries (see Chapter 1). During communism, women's full-time labour force participation was constrained in order to maximise the use of all available productive resources to sustain economic growth by 'extensive' means. In contrast, women's labour force participation in the West was a result of the impact of women's organisations and was related to the idea of women's self-realisation. Hence, economic factors compared across regions might reflect different regional policies regarding the genders and a 'good' economic outcome in terms of gender parity does not mean a preferable outcome regarding gender-equal opportunities and choices.

Instead of using economic indicators for measuring gender equality in the labour market, this Chapter aims at analysing and comparing patriarchal attitudes to women's work in and between transition and (pre-1990) OECD countries. It examines what people from different societies actually think about a gender equal division of work in the household and economic sphere. This different measure of gender disparities offers new perspectives for explaining gender inequality by highlighting the importance of societal norms and value systems in different countries and regions

that cannot easily be captured by pure economic factors. Women looking for work in a society characterised by a general belief in the traditional gender division of work are very probable to be worse off in terms of work opportunities and income than women living in societies where liberal gender attitudes are predominant. Hence, it is assumed that patriarchal attitudes shape women's opportunities in the labour market and can serve as a proxy for measuring gender inequality in society.

This Chapter is not the first to compare gender attitudes between transition countries and other regions. Panayotova & Brayfield (1997) examined gender-attitudes in the USA and Hungary using data from the 1992 round of the International Social Survey Programme. The same data source but round 1994 were used by Braun *et al.* (1999) for comparing gender role ideology between socialist and non-socialist countries. The World Value Survey was the basis of Inglehart & Norris (2003). While these studies interpret gender attitudes in a more general sense by using a summarised gender attitude index derived from responses to several questions on attitudes this Chapter has a more simple and transparent approach by focusing exclusively on the examination of attitudes on women's work. The additional value added of this Chapter is the aim to explain regional gaps in attitudes by examining determinants of regional and gender differences in attitudes to women's work using a regression framework. Consequently, it will be also examined whether it is regional differences of population characteristics or of the impact of determinants that drive the regional gap in patriarchal attitudes. Furthermore, this Chapter sheds light on future patterns of social change of gender-role attitudes in transition and OECD countries based on age group and cross-sectional data analyses.

Micro-data derive from mainly two rounds[51] of the International Social Survey Program (ISSP). The 1994 round (also used by Braun *et al.*, 1999) includes seven CEE and 14 Western industrialised countries and the 1998 round (not used before by other authors for the examination of gender attitudes) provides data on nine CEE and 18 OECD countries.

The Chapter will be structured as follows. Section 2.2 compares gender equality between East and West by investigating regional differences using some economic indicators. In addition, it portrays different political and societal trajectories related to women's role in the labour market. Section 2.3 describes the ISSP micro data that is used for the examination of attitudes to women's work. With the tools of

[51] The coverage of transition countries is very small for the 1988 and 1991 rounds, so that only some descriptive results will be discussed for these years.

descriptive and logistic regression analysis, Section 2.4 examines differences in gender norms between East and West and compares women's with men's attitudes. Where do regional and gender differences in attitudes to women's work derive from? Section 2.5 compares the impact of individual background characteristics between regions and gender. In addition, the extent to which the regional gap in patriarchal attitudes is a consequence of regional differences in population characteristics or of differences in the impact of those characteristics will be estimated using an Oaxaca decomposition. Section 2.6 aims at forecasting changes of gender attitudes over time for regions and countries. Section 2.7 concludes.

2.2 Economic indictors on gender equality and different trajectories in the increase of women's participation in the labour market in East and West

Are women at a greater disadvantage than men in the labour market in CEE countries today? This Section examines first some economic indictors for comparing gender equality in the labour market between East and West (Sub-section 2.2.1). Even though these indicators show relative similar patterns between both regions, reasons for disparities in gender equality between East and West are discussed in a second step by describing different trajectories in the development of women's participation in the labour market for both regions (Sub-section 2.2.2).

2.2.1 Similarities between East and West regarding economic indicators on gender equality in the labour market

Table 2.1 presents three economic indicators used to interpret gender equality in the labour market: gender equality in human capital measured by female and male gross enrolment ratios in tertiary education, gender employment/population ratio and the gender pay ratio. The selection of transition countries is driven by data availability. These countries are compared with five OECD countries: Sweden due to its high regulation on gender equality, the Mediterranean country Italy characterised by a traditionally less emphasis on gender equality and three other countries with some regulation (Germany, the USA and the UK). In addition, Table 2.1 gives also the averages of the economic indicators for a group of CEE and OECD countries.

Column 1 of Table 2.1 shows the female/male gross enrolment ratio (GER) in tertiary education. The GER is the number of students enrolled in tertiary education, regardless of age, expressed as a percentage of the population in the theoretical age group for the same level of education. In all countries women are in an advantageous position. In Albania and Latvia 60 percent more women than men are enrolled in

tertiary education; women's advantage is lowest in the Czech Republic and Slovenia with an about 10 percent higher share in tertiary education. However, a similar trend of the 'feminisation of tertiary education' can be observed for OECD countries.

Within OECD countries Sweden shows the highest advantage for women in access to tertiary education (about 50 percent more women than men). Italy, the UK and the US reflect the OECD average: in Western industrialised countries about 24 percent more women than men are enrolled in tertiary education. The average gender enrolment ratio for transition countries is 1.37 showing a substantially higher educational advantage of women over men in post-communist compared to OECD countries.

Column 2 displays a measure of women's economic independence by presenting the employment/population ratio of people in the working age (15 to 64 year-olds) by gender and again the female to male ratio. We find now a reverse picture to education, showing that women's higher human capital is not efficiently used in the labour market since women make up a smaller share of the employed than men. In transition countries female employment is relatively high compared to men's. There is practically no difference between the share of women and men in the labour market in Lithuania. Only in the Czech Republic and Hungary a considerably higher share of women (about 20 percent) than men is not employed.

On average, in transition countries about 14 percent less females than males are employed (ratio 0.86). This compares to 21 percent lower employment of women compared to men in OECD countries. Hence, the gender gap regarding employment is considerably lower in former post-communist countries than in Western industrialised countries. Nevertheless, a higher share of women is employed in OECD countries (60 percent) than in transition countries (54 percent).

Variation in women's employment is much greater in OECD countries (the standard deviation of women's employment/population ratio is 9.8 in OECD compared to 4.3 in transition countries). In Italy, the Mediterranean country with lowest female labour force participation, 40 percent more working age men than women are employed.[52] On the other end, Scandinavian countries like Sweden are characterised by only marginal differences in men's and women's working age employment status. Gender equality here is similar to that in Lithuania and higher than in many other transition countries.

Table 2.1: Economic indicators on gender equality in the labour market

	Gross enrolment ratio[53] in tertiary education ISCED 5 and 6, 2000/2001 in percent			Employment/ population ratio[54] 2001 in percent			Gender pay ratio[55] different sources		
							A	B	C
	Male	Female	**Ratio female male**	Male	Female	**Ratio female male**	1996, 1997, 1998	1998	1998
Albania	11	19	**1.73**						
Bulgaria	35	47	**1.34**	54	48	**0.89**	69		
Czech	29	31	**1.07**	73	57	**0.78**	81		
Estonia	45	70	**1.56**	66	57	**0.87**	73		
Hungary	35	45	**1.29**	63	50	**0.78**	78		
Latvia	48	79	**1.65**	62	56	**0.91**	80		
Lithuania	42	63	**1.50**	60	57	**0.96**	71		
Macedonia	21	28	**1.33**						
Moldova	24	31	**1.29**						
Poland	46	66	**1.43**	59	48	**0.82**	79		
Romania	25	30	**1.20**	69	58	**0.85**	76		
Russia	56	72	**1.29**				70		
Slovakia	29	32	**1.10**	62	52	**0.84**	78		
Slovenia	52	70	**1.35**	69	59	**0.86**	85		
Italy	*43*	*57*	**1.33**	*69*	*41*	**0.60**		*91*	*93*
Germany				*73*	*59*	**0.80**		81	83
Sweden	*56*	*85*	**1.52**	*77*	*73*	**0.95**		82	88
UK	*53*	*67*	**1.26**	*78*	*65*	**0.83**		76	79
USA	*63*	*83*	**1.32**	*79*	*67*	**0.85**			76
Mean CEE	35.6	48.8	**1.37**	63.7	54.2	**0.86**	76.4		
Std. dev. CEE	(13.1)	(20.5)	**(0.19)**	(5.6)	(4.3)	**(0.06)**	(5.1)		
Mean OECD	52.0	64.7	**1.24**	75.8	59.8	**0.79**		85.3	85.1
Std. dev. OECD	(5.9)	(12.0)	**(0.17)**	(5.0)	(9.8)	**(0.11)**		(5.7)	(5.9)

Source: UNESCO (2003b) for gross enrolment ratio, OECD (2002a) and EUROSTAT (2003) for data on employment rates. Gender pay gap data are not directly comparable. The sources and measures are as follows: A) UNICEF (1999): monthly gender pay ratios (*not adjusted for hours worked*). In general data refer to the year 1996, but for Hungary, Bulgaria, Romania, and Lithuania to 1997 and for Latvia to 1998. B) Eurostat, ECHP, wave 5 (2003): Ratio of women's average gross hourly earnings with respect to men's average gross hourly earnings based on earning data for all individuals employed 15 hours or more at the time of the survey in 1998 (*adjusted for hours worked*). C) OECD (2002a): gender pay gap by median of wage structure, hourly earnings 1998 *(adjusted for hours worked*). OECD country average refers to the following countries for employment ratio and gender pay ratio, source C: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, New Zealand, Portugal, Spain, Sweden, Switzerland, UK and USA. The OECD country group covers the same countries for source B of the gender pay ratio with the exception of Australia, Austria, Canada, Netherlands, Switzerland and the USA. For enrolment ratio the countries not covered compared to the OECD group used for the employment ratio are Finland and Germany. Standard deviation is given in parenthesis for the CEE and OECD unweighted country mean.

[52] Only the OECD countries Turkey and Mexico show considerable lower female participation rates with 63 percent more men employed in the first and 53 percent in the last (not shown and not included in the OECD average).

[53] The gross enrolment ratio is the number of pupils enrolled in a given level of education, regardless of age, expressed as a percentage of the population in the theoretical age group for the same level of education. This contrasts to the net enrolment ratio, that is the number of pupils in the theoretical age group for a given grade/level of education enrolled in that level expressed as percentage of the total population in that age group.

[54] The employment ratio expresses the number of employed people between 15 and 64 years old as a share of the working-age population in the same age group here for women and men separately. Data refer to 2001 for all countries. Even though sources for OECD and the transition countries are different, sources are comparable: for the four countries given in both sources the Slovak and Czech Republic show exactly the same female employment ratio, and for both sources Hungary and Poland respectively have very similar values with a smaller ratio of 0.02 for the first and a higher ratio of 0.06 for the second in the given EUROSTAT source.

[55] The gender pay ratio gives the average earning for women devided by the average earning for men.

The gender pay ratio, the fraction of the average male pay earned by women, is given in column 3. Differences in pay between women and men is of great importance as it has a direct effect on living standards, the level of pensions, unemployment benefits and other benefits paid to employees. Unfortunately, there is no one satisfactory source for measuring the gender pay ratio in a harmonised way across Europe so that figures are not directly comparable between regions. Source A (UNICEF, 1999) refers to monthly gender pay ratios in terms of average total monthly earnings and is available only for transition countries covering the years 1996 to 1998. Sources B (Eurostat, 2003) and C (OECD, 2002) refer to gender wage ratios calculated on the basis of hourly earnings and refer to the year 1998. The monthly ratios (source A) given for transition countries tend to show higher gender inequality than ratios based on an hourly measure (B and C) as men, on average, work longer hours than women. However, it is important to note, that female part-time employment in transition countries is still rare so that the gender pay gap calculation based on monthly earnings (source A) is probably relatively similar to gender pay gap calculations based on hourly earnings for post-communist countries.[56]

Based on the monthly ratio women in transition countries earn about 20 to 30 percent less than their male counterparts with the exception of Slovenia, where the gender ratio is about 85 percent high. Surprisingly, gender pay ratios seem to reveal a quite low gender inequality for OECD countries with the exception of the UK and the US. This stands in contrast to other data that suggest higher gender pay inequality in some Western industrialised countries compared to the East (Blau and Kahn, 2001). However, taking into account that the monthly pay calculation for transition countries might slightly overestimate gender inequality, data do not show that women in transition fare necessarily worse than women in Germany or Sweden. Even by applying the hourly wage calculation, gender equality in the UK is not higher compared to that in many transition countries, where differences in working hours between men and women are not taken into account for the gender gap calculation.[57]

Taken together, women's relative advantage compared to men in access to tertiary education and work seems to be slightly greater in post-communist countries

[56] This would be different for OECD countries where a great share of women work part-time which would effect greatly the estimation of the gender pay ratio if only total monthly earnings (and not hours worked) were taken into account for the calculation of the ratio.

[57] In contrast to the hypothesis of women's higher vulnerability during the transition process, literature suggests, that the gender pay gap diminished in transition countries (Newell and Reilly, 2001; Brainerd, 1997) which might be also related to an increase in return to women's education (Munich *et al*., 1999) – see Introduction.

while the gender pay ratio suggests a somewhat higher disadvantage of women in transition than in Western industrialised countries. Hence, given these economic indicators gender equality is rather similar between transitional and OECD labour markets.

However, can economic factors indeed show the 'whole' picture of gender equal work division? Regional differences in developments of gender equality show another perspective of women's integration into work.

2.2.2 Dissimilarities in developments of women's work in East and West

In Western industrialized countries the increasing labour market participation of women was a gradual process stimulated by economic factors but also by societal contest. New opportunities for women to earn money outside the home opened during the last decades initially driven by an increasing service sector. The availability of part-time employment facilitated women's ability to work. At the same time, the amount of time necessary for household activities diminished, since consumption of household appliances increased and the appearance of inexpensive substitutes for services traditionally provided by women augmented. This increased the costs of conformity to the traditional division of labour between male breadwinner and female homemaker in the West.[58]

Closely related to the economic stimulation of women's work in the labour market was the social contest on gender norms. Starting in the 1970s, women participating in women's organisations fought for women's rights and created an agenda where women's issues were discussed resulting in reinforced equal opportunities for women in all spheres of life in the 1980s and 1990s. The increasing female labour force participation was therefore paired with a discussion on gender equality regarding responsibilities in the household.

Hence, both, economic factors and societal contest led to erosion in traditional gender roles specifying husbands as breadwinners and wives as homemakers in Western industrialised countries. (Blossfeld & Drobnic, 2001; Badgett *et al*., 2000; Frankel, 1997)

In contrast to Western industrialised countries, communist countries used direct state intervention for the implementation of a socialist form of gender equality. This normative imposition of gender ideology impeded the development of a pluralistic and free debate of gender issues that shaped gender norms in the West.

[58] Indeed, over the last decades breadwinner-husband marriages in which the wife did not work outside home slid into an increasing economic disadvantage relative to other marital arrangements where both contribute to the family income. (Dechter and Smock, 1994)

The communist ideology of gender equality did not by far reach the ambitious aim of equality in all spheres of life demanded by Western women's organisations. The socialist term of equality for women was mainly identified with women being wage earners but did not question women's primary responsibilities for childcare and household tasks. (Dijkstra, 1997) While in the West feminism restructured value orientations with e.g. one effect of a voluntarily and gradually increase of women's entry into the labour force, women in the East were often constrained to work full-time due to two reasons. First, women's participation in the labour market was meant to maximise the use of all available productive resources to sustain economic growth by 'extensive' means. Second, women had to participate in the labour market as a means of economic survival and not self-realisation.

2.2.3 Greater adherence to traditional attitudes to women's work in the East?

These different trajectories in increase of women's labour force participation in the West and East are likely to have impacted on people's adherence to traditional attitudes to women's work in both regions.

Since the communist gender ideology focused only on access to paid work but not on the division of caring and household tasks, women's full-time employment led to an overburdening of women as workers and mothers. This so-called 'double burden' (UNICEF, 1999) might have promoted the acceptance of traditional orientations towards CEE women's work and family responsibilities (Lobodzinska, 1995) in transition countries today. In addition, different patterns of women's employment might matter: women in transition countries are generally full-time employed, while women in pre-1990 OECD countries have a wider opportunity of part-time work. Also women's lack of choice in ex-communist countries might have restrained public support for women's employment. (Panayotova & Brayfield, 1997)

Additionally, once boundaries lifted in the aftermath of communism, it makes a difference whether gender equality is a fundamental part of a society that developed over decades as it is characteristic for the West or whether gender equality was dictated from above as found in communist countries. Due to the imposition of gender equality in the work sphere people in the East experienced a discrepancy between their traditionally moulded expectations of women's role as housewives and the necessity of women's fulltime work in the society. The loss of a communist, societal grip caused a revitalisation of traditional values that were concealed during communism.

Such a revival of traditional values was also due to the re-emergence of other powers within the post-communist societies like the revival of religious community life that was in favour of traditional beliefs on gender roles. In contrast, values in Western European Countries are moulded by increasing shares of populations not associated with any religion at all (Crouch, 1999) whereby also a relatively high share of Protestantism might be related to more relaxed attitudes to women's work.

Hence, while in the West women's participation in the economy, women's high access to tertiary education and decreasing gender gaps are argued to be most important for explaining the degree of liberal gender values today, it must be doubted whether this argument can be applied also to post-communist countries. Eastern women's high labour force participation and access to tertiary education might still more reflect inheritance of the communist system than that it is a consequence of a profound societal agreement on women's societal roles. Hence, the much longer and profounder tradition of women's labour force participation in the East compared to the West might not be the reason for a greater acceptance of dual earner households. In contrast, the constraint of and experiences with women's full-time work might have lead to a backlash nourishing traditional gender values in post-communist countries today.[59]

These societal norms on gender equality in the labour force are of high importance. First, attitudes are likely to impact upon labour market policies and peoples (e.g. employers') behaviour. Therefore, they can shape women's equal opportunities in the labour market. Second, the relative high gender equality in the labour market visible through economic indicators today might still be inherited from the communist grip. Profound societal preferences for gender inequality are very likely to impact upon women's role in societies and could therefore lead to increasing gender gaps in the CEE labour market.

Hence, after the introduction of the ISSP data in Section 2.3 the following Sections aim at answering three main questions:

a) *Are there differences in preferences over gender inequality between East and West?* Section 2.4 compares regional and gender differences in attitudes. The results show a large regional discrepancy in patriarchal values even if population characteristics are controlled for.

[59] A comparison of China and Taiwan regarding traditional values of women and men for the male-breadwinner-model showed similarly, that people in China think much more that women should be the homemaker even though women's labour participation in China has a much more profound and longer tradition in China than in Taiwan. (Tu & Chang, 2000)

b) *Where do these regional differences derive from?* Section 2.5 examines different impacts of population characteristics between genders and regions. I estimate the share of regional differences in agreement with the traditional gender stereotypes that derives from i) regionally different impacts of individuals' background and ii) varying regional population characteristics.

c) Given that there is a great gap between OECD and transition countries in patriarchal attitudes it is interesting to know *how attitudes to gender inequality will change over time in both regions*. Section 2.6 examines age group effects and compares agreement with the gender stereotype between 1994 and 1998.

2.3 Data

The data used to measure attitudes to gender inequality are taken from four waves of the International Social Survey Program (ISSP)[60]. The 1988 and 1991 ISSP rounds cover only one (Hungary) and four transition countries (Hungary, Poland, Eastern Germany and Slovenia) respectively. The 1994 round of the ISSP includes seven transition (Eastern Germany, Hungary, Czech Republic, Slovenia, Poland, Bulgaria and Russia) and 14 OECD countries. The 1998 data comprise additionally two further Eastern European countries (Latvia and Slovakia) and a total of 18 Western industrialised countries. Even though the sample of transition countries is quite heterogeneous, data on Central Asia and the Caucasus are missing. Both regions differ in cultural, economic and geographical terms from the countries covered by ISSP. Hence, the results cannot be generalised for these regions that are very likely to show a higher degree of patriarchal attitudes to women's work. In general, the results below refer to most recent data of the ISSP 1998 round. Only in Section 2.6 where changes in attitudes are examined are data from the other ISSP rounds also analysed.

In ISSP 1998 approximately 1000 respondents per country were asked questions related to preferences about gender roles. Table A 2.1 in the Appendix shows the sample size, response rate, fieldwork method and sample type for each country. In all transition and half of other OECD countries data were obtain by face-to-face interviews. Response rates are over 80 percent in Latvia and Bulgaria, slightly above 50 percent for Russia and Hungary and small for Slovenia (35 percent) and Czech Republic (40 percent). Results on the last two countries need to be interpreted with caution. Also some OECD countries show very low response rates, especially

[60] Further information on ISSP data beyond that given here can be found under http://www.issp.org/.

France with only 10 and Canada with 30 percent of response. I exclude both countries from the analysis since results are very likely to be biased. In general, the weighted results of respondents' characteristics in ISSP 1998 approximate[61] population characteristics of the country derived from countries' census data.

The focus of this analysis is on one ISSP question that is given in the form of a statement to which respondents are asked to register their attitude on a scale of 1 to 5.

Table 2.2: Question on attitudes to women's work

Statement asked of respondents	Response categories
Do you agree or disagree… 'A husband's job is to earn money; a wife's job is to look after the home and family'?	1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

This measure for attitudes to gender inequality limits the focus to gender stereotypes concerning labour division within the family and leaves open gender-specific attitudes regarding politics, the workforce and education.

The question used for this analysis is formulated quite neutrally in contrast to for example a question like: 'Women and men should share housekeeping equally'. This statement would very much picture men's and women's distributional interests instead of general attitudes to women's roles in the household. In contrast, the question in Table 2.2 is not directly related to distributional conflicts between women and men. Men gain from women's work due to an increased pooled household income. Also women can improve their status by becoming breadwinners given the problem of the distribution of homework is solved. Hence, I assume that there is a relative low interference of respondents' very own distributional interests impacting upon results.

It is important to note that respondents being asked about their ideas of women's work are likely to associate predominantly female full-time occupation in the East where part-time work is still very rare. In contrast, respondents in pre-1990 OECD countries might think of 'some form of' female occupation given the high variability of part-time work in the West.

[61] I compared countries' census data with the weighted results on population characteristics for the ISSP 1998 round. For some countries there is a slight bias in response. Women, people not in the labour force, youngest and oldest age cohorts and better educated people seem to be more likely to respond in general. However, differences in the coverage of population groups between country's census and ISSP data remain generally below 5 percent of the respective group (see data documentation of ISSP 1998 on http://www.gesis.org/en/data_service/issp/data/1998_Religion_II.htm).

A general problem of comparing country results regards respondents' exact interpretation of the question that might be determined by differences between languages and translations. The effect of translation differences remains a black box, e.g. we do not know how far different response categories mean exactly the same in each country. The word 'strongly' of the answer categories 'strongly agree' and 'strongly disagree' seems open to variations in interpretation from country to country while the 'agree' and 'disagree' difference is likely to be the same in every country. Hence, for reducing response differences due to these translation problems I generally analyse agreement with the patriarchal gender attitude and collapse therefore the answer categories 'strongly agree' and 'agree' into one category 'agreement'.

2.4 Are there differences in preferences to gender inequality between East and West?

This Section provides a first glance at cross-country differences in preferences to gender inequality by examining the distribution of answers to the question listed in Table 2.2 and by discussing gender differences in attitudes (Sub-section 2.4.1). In a second step the 'pure' regional and country differences in gender attitudes is measured by controlling for individuals' characteristics (Sub-section 2.4.2).

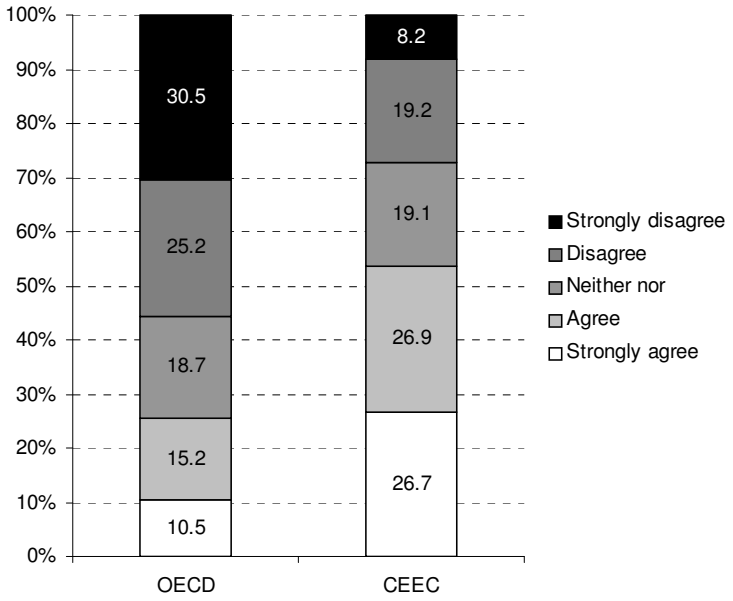
2.4.1 General preferences for gender inequality

Figure 2.1 displays the share of respondents for each answer category of the question on attitudes to women's work by region. In OECD countries about every tenth respondent strongly agrees with the patriarchal gender attitude but almost every third respondent strongly disagrees. About 26 percent of respondents generally agree (strongly agree and agree) but opposition is much greater with a share of 56 percent who disagree with the gender attitude (strongly disagree and disagree). For transition countries the picture is reverse. As many as 27 percent of respondents strongly agree that a wife's job is to look after home and family and only 8 percent strongly disagree. 54 percent of respondents with patriarchal attitudes to women's work (strongly agree and agree) are opposed by only by 27 percent of respondents disagreeing in CEE countries. Only the share of people in the middle position (neither agree nor disagree) is similar between regions. Hence, descriptive regional results show a large difference between Western and Eastern European countries with a high preference for patriarchal gender roles in post-communist countries. This confirms results of ISSP

1994 data (Braun *et al.,* 1999) and results from the World Value Survey (Inglehart & Norris, 2003).[62]

How do different countries compare and what can we say about differences within regions? For answering this question I collapse the response categories into a dichotomy of respondents agreeing (strongly agree and agree) and others and compare the share of respondents in favour of patriarchal gender attitudes across countries in Figure 2.2. The countries are ordered first by regional groups (CEE, OECD and other countries (incl. developing countries)) and second by the share of agreement.

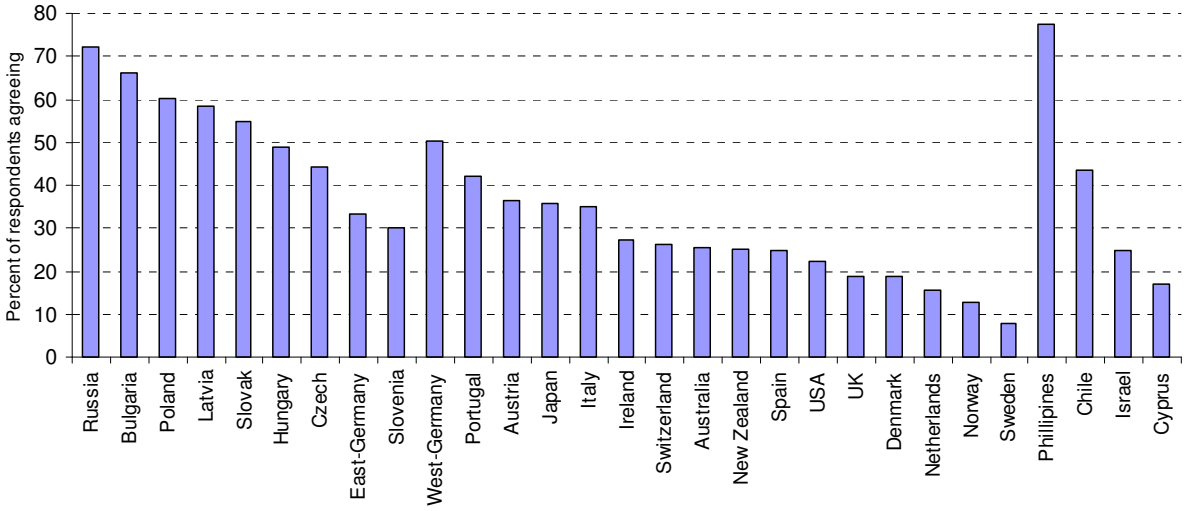
Figure 2.1: Percent of respondents in response categories of gender attitude by region



Source: ISSP 1998, author's calculations.
Note: OECD countries are Australia, Austria, Denmark, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, UK, USA and West-Germany. CEE countries are Bulgaria, Czech Republic, East-Germany, Hungary, Latvia, Poland, Russia, Slovakia and Slovenia. Figures refer to the unweighted country group average.

[62] See Section 2.1 discussing differences between this Chapter and the both studies stated.

Figure 2.2: Percent of respondents agreeing with the patriarchal gender attitude by country



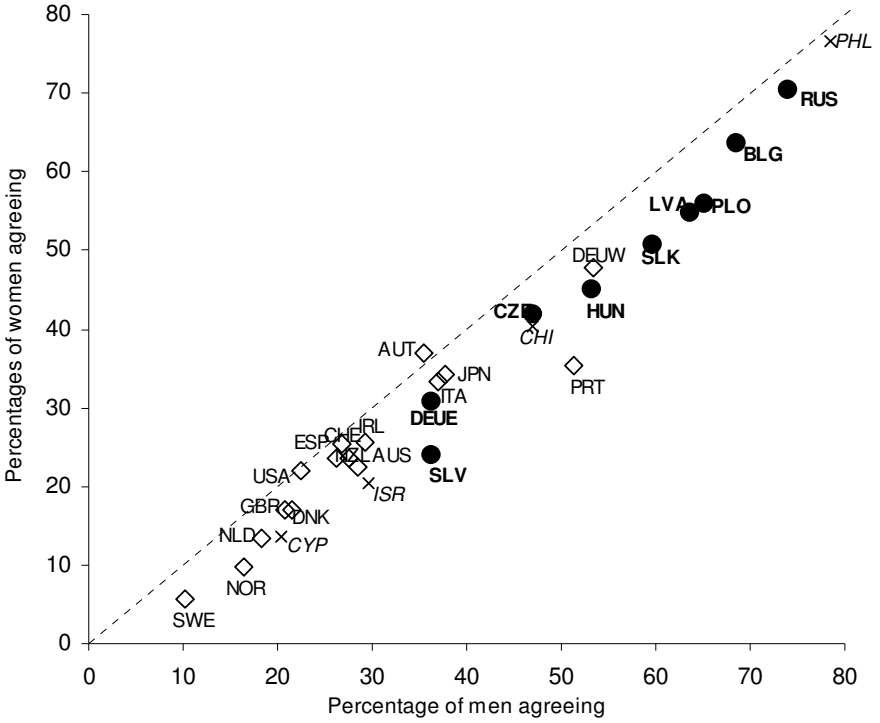
Source: ISSP 1998, author's calculations

As the graph reveals there is substantial variation across the entire set of countries. People in the Philippines assume the top rank with almost 80 per cent agreeing with the patriarchal gender attitude, closely followed by 70 per cent of people in Russia. On the other hand, only 8 percent of respondents in Sweden think that the statement is right. The share of agreement in Sweden is also significantly lower (1 percent level) than in any other OECD and transition country as multiple comparison of agreement between countries reveals (Table A 2.2 in the Appendix).

Within each group variation in agreement is also considerably high. The share of respondents in West-Germany adherent to traditional gender stereotypes is about 6 times higher than in Sweden.

Regarding CEE countries, more than half of the population in Russia, Bulgaria, Poland, Latvia and Slovakia believe in the traditional division of work between genders. Traditional values in Russia are significantly more pronounced than in any other transition or OECD country. This is also true for Bulgaria once Russia is not taken into account. (see Table A 2.2 in the Appendix)

Figure 2.3: Percent of women and men agreeing with patriarchal gender attitudes



Source: ISSP 1998, author's calculations.

One might think that the views on this issue differ greatly between men and women, for instance because the current construction of society is one that has very much been dominated by men thereby leaving women in the economically less advantageous positions. Hence, in this case we would assume that differences between countries regarding patriarchal gender attitudes are driven predominantly by the differences in agreement of men. Quite surprisingly, the empirical evidence contained in the answers to the above question firmly rejects the hypothesis of substantial male-female differences in attitudes to women's work. To illustrate this finding, Figure 2.3 shows a scatter plot containing the national shares of 'agree' and 'strongly agree' for woman (on the vertical axis) and for men (on the horizontal axis) for 29 countries covered in ISSP 1998.

As the figure indicates, the gender-specific answers appear to lie on a straight line parallel to the 45° line. I run a simple linear regression through the data-points expressed in the following formula:

Agree female= $ß_0$+ $ß_1$*Agree male

Column 1 of Table 2.3 presents the result for the data points given in Figure 2.3.

Table 2.3: OLS regression results with dependent variable percent of women agreeing and independent variable percent of men agreeing with patriarchal gender attitude

Age group	All age groups	17-29	30-44	45-59	60-
Men's agreement	0.960	0.879	0.937	0.913	0.946
	(0.035)**	(0.056)**	(0.063)**	(0.054)**	(0.070)**
Constant	-3.9	-3.2	-3.5	-3.0	-2.1
	(1.5)*	(2.0)	(2.4)	(2.5)	(4.2)
No. countries	29	29	29	29	29
R-squared	0.96	0.90	0.89	0.91	0.87

Note: standard errors in parentheses, * significant at 5%; ** significant at 1%

The intercept of - 3.9 (constant) captures the average differences in agreement in percent points between women and men: surprisingly, within the sample of countries analysed women agree (and strongly agree) by a mere four percentage points less than men with the above statement. This difference is significant at the 5 per cent level and it is indeed anything but 'substantial'. One might also suspect that the degree of disagreement between men and women differs systematically across countries, for instance in the sense that in countries where male 'patriarchal attitudes' are particularly pronounced, women are much less in favour of the traditional roles they 'are bound to' assume. However, as the slope of 0.96 - which is not significantly different from 1 (p=0.26) – indicates, gender differences in agreement do not vary between countries with more and less traditional societal values on women's work.

The results of column 1 discussed until now reflect countries' entire population. However, we might expect that gender differences in agreement vary between age groups. Women and men in older age groups might be more homogenous in their beliefs in traditional values than the younger generations. I therefore estimate women's and men's agreement with the statement for four different age groups for each country and run again the same regressions but this time through country points of different age groups. The results are given in columns 2 to 5 of Table 2.3. The slight decrease in the intercept over age groups indicates that gender differences seem to decline with older age. However, the difference between the gender gap of 3.2 percent for the youngest age cohort (17 to 29) compared to 2.1 percent for the oldest age cohort (over 59) is not significant (t=0.23).

Similar to the regression for all age groups (column 1), the slope is generally not significantly different from 1 for regression results by age group indicating that gender differences in agreement do not vary between countries with higher or lower

patriarchal attitudes. However, one exception is the youngest age group where the slope of 0.879 is significantly smaller (4 percent level) than 1. Hence, in countries where young males' patriarchal attitudes are greatest young women are less in favour of their traditional gender roles. However, the slopes for over 60 year-olds and for the youngest age group are not significantly different and there is no constant trend of increasing slope with higher age. Therefore, it is difficult to tell, whether the result of the youngest age group indicates a future trend that gender differences in patriarchal attitudes increase the more men adhere to traditional gender roles.

Hence, the surprising pattern of women's and men's similar agreement with patriarchal attitudes is robust across different age cohorts.

2.4.2 Regional differences in attitudes conditional on individuals' characteristics

The practice to measure traditional values by summarising people attributing themselves to gender stereotypes cannot take into account 'pure' (or 'conditional') effects that demographic variables have on individuals' agreement with traditional gender roles. However, these pure effects are of interest since regional differences in agreement with the patriarchal gender attitude might partly be driven by regional diversity in terms of individual background characteristics. This Section estimates differences in gender attitudes between regions and countries controlling for varying individuals' characteristics across regions.

2.4.2.1 Research design

Ordered logit (or probit) models[63] can measure the pure size effect of attitudes to gender inequality in regions and countries. The ordered logit models described in the following will also be applied similarly in Sections 2.5 (comparing the impact of socio-economic background between genders and regions) and Section 2.6 (estimating changes in attitudes to gender inequality).

Model

I assume that the attitudes to family roles of individual i can be characterised by a latent variable A_i^* ranging from - ∞ to ∞. The structural model is as follows:

$$(1)\quad A_i^* = \beta x_i + \varepsilon_i,$$

[63] For the examination of factors determining attitudes to gender inequality I prefer logistic regressions instead of probit regression models since coefficients of logistic regressions are easier to interpret. However, since the predicted probabilities of logit and probit regressions are very close, probit regressions could be used alternatively.

whereby A* is the dependent variable indicating the degree of patriarchal gender values, β is the vector of unknown coefficients, x the vector of explanatory variables and ε the random term in the equation.

The variable A_i^* is not directly observed, but a variable A_i taking values from 1 to 5 decreasing in individual endorsement of traditional family roles.

In particular, I measure the model

(2)

$$A_i = 1 \text{ if } A_i^* \leq \mu_1$$

$$A_i = 2 \text{ if } \mu_1 < A_i^* \leq \mu_2$$

$$\ldots$$

$$A_i = 5 \text{ if } \mu_4 < A_i^*$$

where $\mu_1,\ldots,\mu_4$ are unknown threshold parameters to be approximated with the β-coefficients. Assuming that the distribution of the error term is logistic, I estimate an ordered logit model**.**

An alternative to the ordered logit model is the binary choice model by applying e.g. a logit analysis. In such a model the dependent variable of interest (originally comprising 5 answer categories) would be collapsed into a dummy variable with e.g. a 1 for answer categories 'strongly agree' and 'agree' and 0 otherwise. (Such a model is applied later on in Section 2.5.3.) On one hand this approach leads to some loss of information since 5 different judgements about the gender attitude are summarised into just two categories. On the other hand it is reasonable to argue that the five different answer categories include considerable 'noise' since the percent differences between countries regarding people adhering to categories like 'strongly agree' and 'agree' might be mainly driven by different interpretations of the word 'strongly' in different languages.

Independent variables used in the model

Region and countries: It is assumed that all transition countries can be treated as a fairly homogeneous group. This may be justified to the extent that all share the common experience of socialism. A 'CEE country dummy' is introduced for measuring the 'effect' of transition countries.

On the other hand, however, it might be reasonable to distinguish between Russia and the other Eastern European countries, all of which have strongly committed themselves to the Western market model by becoming official candidates

for accession to or member states of the European Union. Russia differs also insofar as it has by far the longest history of communism, being the only country under communist rule before the world wars. To capture this I separate the CEE country dummy into one for Russia and one for the remaining eight transition countries ('CEE8').

Besides regional dummy variables, countries' adherence to patriarchal values can be estimated by single country dummies, even though the size and significance of which would certainly be influenced by international differences in the exact interpretation of the question, given the languages differences.

Gender: Women are less likely to agree with patriarchal values as shown before.

Age, education, cohabitation, single parenthood, household income, social class and religion: Literature show that individual resources and characteristics like higher education, lower age, cohabitation, single parenthood, higher household income, higher social class and low degree of religion are all related to more liberal attitudes. (Inglehart & Norris, 2003; Batalova & Cohen, 2002).

Besides these individual resources, gender relations in the family household are likely to shape gender attitudes.[64] In households where gender relations are asymmetric, we can expect a presence of less egalitarian gender attitudes. *Marital status, household size, education, labour force participation, employment status and children in household* are all variables that can capture women's dependence on men. (Baxter and Kane, 1995)

Integrating these variables into the model, I can specify the vector of explanatory variables x in (1) as follows

$$(3)\quad A_i^* = RE_i\beta_1 + G_i\beta_2 + D_i\beta_3 + FS_i\beta_4 + SES_i\beta_5 + ES_i\beta_6 + R_i\beta_7 + (Y_i\beta_8) + \varepsilon_i$$

where the variable RE denotes the region individuals are living in, G is people's gender, D captures individual demography, FS refers to the family structure, SES captures the socio-economic status, ES is individuals' employment status and R refers to people's religious affirmation. In Section 2.6 where trends in gender attitudes are

[64] Asymmetric gender relation in the household might shape patriarchal attitudes. However, these variables might also have an endogenous character since patriarchal attitudes might determine women's dependence in the household. One example might be, that couples with liberal gender values are more likely to cohabit before marriage. (Batalova & Cohen, 2002)

measured I also add a control capturing the year of the data ('Y'). ε is an error term and the vectors β_1 to β_8 are parameters.

The aim of this Chapter is to examine the regional gap in patriarchal attitudes and where these regional differences derive from. The use of independent variables in the model serve for explaining regional differences but these variables are not considered to be of interest *per se*. Hence, no special focus is placed on developing hypotheses of interest relating to the independent variables chosen for the model[65].

The variables and their coding are described in Table 2.4. The variables household size, family structure (number of children and adults in the household), household income level and social class have a high number of missing values. However, since these variables are very likely to be related to gender attitudes, they were used by including a dummy variable to indicate non-response[66].

Tables A 2.3 and A 2.4 in the Appendix present the summary statistics for the question and the independent variables discussed in the following Sub-section for CEE and OECD countries separately. For some variables there is a considerable difference in respondents' characteristics between regions. For example, about 10 percent more respondents in CEE than in OECD countries hold some secondary education[67] while about 5 percent more people in OECD than CEE countries attended tertiary education. In this context, it is important to note that educational attainment levels are difficult to compare across countries and regions due to institutional differences in how education is organised. The OECD sample comprises about five percent less retired people but seven to eight percent more housewives and part-time employed than the CEE sample. In addition, the share of the unemployed and those estimating themselves to be part of the lower societal class[68] is twice as high in transition as in Western industrialised countries. Income levels are measured by people's estimates of their household income in their country's currency. For each country I categorised these incomes into 10 different levels of the distribution of all

[65] Baxter and Kane (1995) and Batalova and Cohen (2002) examine the impact of many variables selected for the model in this analysis on gender attitudes of couples and in general focusing on a different set of countries.
[66] Missing values are too high for integrating the following variables into the regression: household structure, occupation, self-employment and area (rural/urban).
[67] Respondents were asked about their highest qualification, answers were summarised into primary, secondary and tertiary education with a similar country classification system than that used for ISCED levels. (ZA, 2000)
[68] The question on social class is as follows. 'Which social class do you attribute yourself to?' The percentage gives the share of people attributing themselves to the 'lower class' or 'working class' in contrast to the other answer categories 'lower middle class', 'middle class', 'upper middle class' and 'upper class'.

sampled individuals in a country; the higher the level the higher is the individual's household income. As can be expected, the average is around five in both regions.

Table 2.4: Variables used and coding of variables

	Term in formula	Used variables	Coding of variables
A	**Dependent variable**	**Husband's job to earn money, wife's job to look after home and family**	**1=strongly agree, 2=agree, 3=neither nor, 4=disagree, 5=strongly disagree**
RE	Region	Central and Eastern Europe	1= CEE, 0= otherwise
		CEE without Russia (CEE8)	1= CEE without Russia, 0=otherwise
		Russia	1=Russia, 0=otherwise
		OECD countries	*Control group*
G	Gender	Gender of the respondent	0=male, 1=female
D	Demography	Age (age)	Metric
		Divorced or separated	1 = divorced or separated, 0 = otherwise
		Widow / Widower	1=widowed, 0=otherwise
		Married	1= married, 0= otherwise
		Single	*Control group*
FS	Single parent	Respondent single parent	1= single parent, 0= otherwise
	Cohabitation	Respondent is cohabiting	1= Living with steady life partner, 0=otherwise (married or single)
	Household size	Household size /controlled for missing values	Metric
	Children	Children in the household	1=child in household, 0=otherwise
SES	Education	*Primary education*	*Control group (primary education or less)*
		Secondary education	1= some or completed secondary education, 0=other
		Tertiary education	1=Some or completed tertiary, 0=other
	Income	Household income /controlled for missing values	Metric (1 to 10 income categories)
	Social class	Subjective social class / controlled for missing values	1=lower or working class, 0=otherwise
ES	Employment status	*Full-time employed*	*Control group*
		Retired	1 = retired, 0 = otherwise
		Part-time employed	1=part time employed, 0=otherwise
		Not in labour force (disabled, students, housewife or man, others)	1= not in labour force, 0= others
		Unemployed	1 = unemployed, 0 = otherwise
R	Religion	Religious degree	From 1= extremely religious to 7=extremely not-religious
		Religious service (only if 1994 compared to 1998)	From 1= once a week or more to 6=never
Y	Year	Year of ISSP wave	0=year 1994, 1= year 1998

For four variables, 'child in household', 'household income level', 'household size' and 'low social class', dummy variables were introduced in order to control for high non-response to these questions. In OECD countries, for all variables besides

household size information is missing for almost 20 percent and in CEE for between seven to 17 percent of the sample.

Table A 2.5 gives the correlation matrix of the explanatory variables. Correlation between the variables age and retirement (0.6) and children in household and household size (0.5) is considerably high. In general, correlation coefficients of the independent variables remain below 0.3.

2.4.2.2 Results

Table 2.5 displays the ordered logit regression results. (For the interpretation of results it is important to remember that the higher is the value of the dependent variable 'agreement with gender attitude' the more liberal is the respondents' attitude.) Models 1 and 2 measure the regional 'effect' without control variables that are added in Models 3 and 4.

Results reflect patterns of Figure 2.1 showing that CEE countries are on average significantly more 'traditional' than OECD countries that serve as a control group in the ordered logit regression. The absolute difference in the size of the CEE country dummy coefficient is about 1.25 (Model 1). As expected, average predicted probabilities for agreement given in Table 2.6 show similarly to regional averages of agreement (see Figure 2.1) that about 25 percent of people in OECD countries and as many as 54 percent of respondents in transition countries are predicted to agree with patriarchal gender norms on the division of work.

Splitting the CEE country dummy variable into two confirms that people in Russia tend to be significantly (1 percent level) more traditional as regards gender roles (coefficient – 1.93, translates into predicted probability of 0.70 for agreement) than people in Central Europe (coefficient -1.1, predicted probability of 0.51 for agreement), who in turn continue to be more traditional than the OECD average (0.25 predicted probability for agreement).

Table 2.5: Ordered logit regression results, dependent variable agreement with statement (the higher the value the less agreement with the patriarchal gender attitude)

	(1)	(2)	(3)	(4)
CEE	-1.244		-1.315	
	(0.022)***		(0.024)***	
CEE 8		-1.122		-1.202
		(0.023)***		(0.026)***
Russia		-1.937		-1.970
		(0.046)***		(0.051)***
Female			0.509	0.496
			(0.023)***	(0.023)***
Age			-0.025	-0.024
			(0.001)***	(0.001)***
Divorced/separated			-0.009	0.008
			(0.049)	(0.049)
Widow			-0.148	-0.131
			(0.054)***	(0.054)**
Married			-0.093	-0.088
			(0.034)***	(0.034)***
Household size			-0.085	-0.085
			(0.010)***	(0.010)***
HH size missing			-0.725	-0.702
			(0.058)***	(0.058)***
Secondary education			0.418	0.464
			(0.028)***	(0.028)***
Tertiary education			0.963	1.005
			(0.036)***	(0.036)***
Retired			-0.079	-0.142
			(0.038)**	(0.038)***
Part-time employed			-0.031	-0.019
			(0.038)	(0.038)
Not in labour force			-0.299	-0.255
			(0.031)***	(0.031)***
Unemployed			-0.093	-0.092
			(0.047)**	(0.047)*
Cohabitation			0.143	0.136
			(0.045)***	(0.045)***
Child in household			-0.078	-0.077
			(0.032)**	(0.032)**
Single parent family			0.171	0.155
			(0.078)**	(0.078)**
Child missing			0.635	0.605
			(0.036)***	(0.036)***
Household income			0.070	0.064
			(0.005)***	(0.005)***
HH income level Missing			-0.073	-0.067
			(0.028)***	(0.028)**
Low social class			-0.156	-0.146
			(0.025)***	(0.025)***
Class missing			0.303	0.303
			(0.031)***	(0.031)***
Highly religious			-0.630	-0.595
			(0.032)***	(0.032)***
Observations	31511	31511	30232	30232
Pseudo R-squared	0.03	0.04	0.09	0.09
log-lklhd	-48751.12	-48599.71	-43954.37	-43844.45

Source: ISSP 1998, author's calculations.

Note: OECD countries reflect the benchmark and cover the following: Austria, Australia, Denmark, Italy, Ireland, Japan, New Zealand, Netherlands, Norway, Portugal, Spain, Sweden, Swiss, USA and West-Germany. CEE countries are Bulgaria, Czech Republic, East-Germany, Hungary, Latvia, Poland, Russia, Slovakia and Slovenia Standard errors in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%.

Models 3 and 4 estimate the regional differences in agreement with patriarchal gender stereotypes conditional on individual background characteristics. Most of these individual determinants selected enter highly significantly and with the 'right' sign into the regression. Traditional attitudes are increasing in age and decreasing in income, social class and education. Men, the retired and the unemployed are more in favour of the traditional role system than their counterparts.

Once individual characteristics are controlled for results indicate a slight but at the 1 percent level significant[69] increases of the regional CEE dummy coefficient (Model 1 compared to Model 3) and CEE8 (Model 2 compared to Model 4). However, Table 2.6 reveals that these differences in the coefficients are marginal once expressed in predicted probabilities of agreement given mean characteristics of the whole population (OECD and CEE countries) for independent variables. Hence, controlling for population characteristics does not greatly change the result that patriarchal attitudes are much greater in transition than in OECD countries.

Table 2.6: Predicted probabilities of agreement (strongly agree, agree) for models in Table 2.5

	OECD	CEE countries	CEE 8 countries	Russia
Model 1	0.252	0.538		
Model 2	0.251		0.507	0.699
Model 3	0.234	0.532		
Model 4	0.234		0.504	0.686

Note: predicted probabilities for agreement are calculated by assuming mean values of the whole population (OECD and CEE countries) for the independent variables.

How does the ranking of countries regarding their traditional value systems (displayed in Figure 2.2) change once it is controlled for individual background characteristics across countries and regions? For this analysis, I replace the CEE-dummy with country dummies using Austria as the benchmark country. Table 2.7 summarises the results. Russia, Latvia, Bulgaria, Poland, Slovakia, Hungary and the Czech Republic remain the most patriarchal countries. In contrast, only the former communist countries Eastern Germany and Slovenia do not show significantly higher attitudes to gender inequality than the benchmark country Austria. Not surprisingly, Scandinavian countries are situated on the other end of the spectrum with most liberal values on gender attitudes.

[69] The increase of the coefficient for CEE countries from Model 1 to 3 and for Central Europe from Model 2 to 4 is significant with a t-value of around 3. Comparing the coefficient for Russia in Model 2 and 4 shows a significant difference in the coefficients with a t-value of 2.3.

Table 2.7: Country dummies added to Model 3 in Table 2.5.

	β-coefficient	Standard error
Russia	-1.823	0.068
Latvia	-1.613	0.071
Bulgaria	-1.402	0.075
Poland	-1.284	0.074
Slovakia	-1.253	0.070
Hungary	-0.949	0.074
Czech Rep.	-0.805	0.070
West-Germany	-0.760	0.075
Japan	-0.140	0.070
Italy	-0.111	0.074
Switzerland	-0.036	0.070
Slovenia	0.021	0.164
New Zealand	0.078	0.075
Ireland	0.089	0.074
East-Germany	0.089	0.075
USA	0.347	0.073
Portugal	0.399	0.077
Australia	0.401	0.197
Netherlands	0.609	0.063
Norway	0.635	0.067
Spain	0.754	0.159
Sweden	0.913	0.073
Denmark	1.367	0.078

Source: ISSP 1998, author's calculation.
Note: benchmark country is Austria. Same control variables used as in Table 2.5. Pseudo R^2=0.12, log-likelihood=-45497. Significant country parameters (5 percent level) are shaded grey, transition countries are printed bold.

Taken together, even if controlled for population characteristics CEE countries show in general much higher patriarchal attitudes than Western European Countries. However, post-communist countries are very heterogeneous; Russia, Latvia and Bulgaria are definitely different from OECD countries, but Eastern Germany and Slovenia are comparable to Austria in their gender attitudes on women's homemaker role.

2.5 Where do regional and gender differences in attitudes to women's work derive from?

How can we explain the great regional differences in patriarchal gender attitudes? Furthermore, where do gender differences in agreement derive from and are they different between regions? This Section will examine these questions.

2.5.1 Regional differences

Up to now the regression model described in 2.4.2.1 was applied to a sample of OECD and CEE countries using a dummy variable for identifying the region of the individual. The assumption of this model was that individual determinants like education or income impact similarly on gender attitudes in both regions. However,

this is not necessarily the case. In the following, regional differences in the importance of respondents' characteristics for adherence to traditional gender attitudes are investigated by estimating regression models separately for the group of CEE and OECD countries. Hence, the regression model 3 of Table 2.5 is run separately for OECD and CEE countries (consequently excluding the regional dummy). Table 2.8 presents the results. Besides the impact of respondents' characteristics on gender attitudes for both regions (OECD in column 1 and CEE in column 2) it also shows the regional difference in variables' impact (difference of regional coefficients) and its standard error (column 3). Coloured fields denote that dissimilarities in impacts of population's characteristics are significantly different between countries. Light grey colour indicates that the variable has a higher impact in OECD countries (whether in positive or negative direction); while dark grey colour denotes that the importance of the variable is more pronounced in CEE countries.

Results show that background characteristics impact in the same direction for both regions, the OECD and CEE country group. Nevertheless, the comparison of the extent of variables' impact on gender attitudes between East and West does provide some interesting and surprising insights.

The gender dummy reveals that women in OECD countries agree significantly less with their male counterparts (1 percent level) on traditional gender roles than women in CEE countries conditional on respondents' characteristics. This outcome stands in contrast to unconditional results given in Figure 2.3 that did not imply variation in gender differences in agreement with patriarchal attitudes between East and West. It is also noteworthy that conditional on respondent background gender differences in agreement with patriarchal attitudes are lower in the CEE country group with higher levels than in the OECD country group with low levels of these attitudes. This result motivates the examination of gender differences in attitudes and their determinants separately for regions in Section 2.5.2.

Table 2.8: Ordered logit regressions results by region, dependent variable agreement with statement (the higher the value the less agreement with the patriarchal gender attitude)

	OECD	CEE countries	Coefficient difference between OECD and CEE countries
Female	0.574	0.381	0.193
	(0.029)***	(0.038)***	(0.048)***
Age	-0.028	-0.013	-0.015
	(0.001)***	(0.002)***	(0.002)***
Divorced/separated	0.072	-0.107	0.179
	(0.061)	(0.086)	(0.105)*
Widow	-0.212	-0.138	-0.074
	(0.068)***	(0.093)	(0.115)
Married	-0.122	-0.073	-0.049
	(0.040)***	(0.062)	(0.074)
Household size	-0.089	-0.083	-0.006
	(0.012)***	(0.016)***	(0.020)
HH size missing	-0.551	-0.263	-0.288
	(0.062)***	(0.309)	(0.315)
Secondary education	0.536	0.189	0.347
	(0.034)***	(0.050)***	(0.060)***
Tertiary education	1.107	0.590	0.517
	(0.043)***	(0.066)***	(0.079)***
Retired	-0.187	0.025	-0.212
	(0.048)***	(0.064)	(0.080)***
Part-time employed	-0.076	-0.000	-0.076
	(0.043)*	(0.082)	(0.093)
Not in labour force	-0.329	-0.217	-0.112
	(0.038)***	(0.056)***	(0.068)*
Unemployed	-0.044	0.011	-0.055
	(0.070)	(0.066)	(0.096)
Cohabitation	0.212	-0.055	0.267
	(0.055)***	(0.081)	(0.098)***
Child in household	0.072	-0.234	0.306
	(0.042)*	(0.053)***	(0.068)***
Single parent family	0.194	0.015	0.179
	(0.097)**	(0.136)	(0.167)
Child data missing	0.481	0.982	-0.501
	(0.045)***	(0.064)***	(0.078)***
HH income level	0.077	0.065	0.012
	(0.006)***	(0.008)***	(0.010)
HH income missing	-0.168	0.216	-0.384
	(0.034)***	(0.051)***	(0.061)***
Low social class	0.044	-0.524	0.568
	(0.033)	(0.041)***	(0.053)***
Class data missing	0.321	0.173	0.148
	(0.035)***	(0.077)**	(0.085)*
Highly religious	-0.693	-0.475	-0.218
	(0.039)***	(0.055)***	(0.067)***
Observations	20145	10087	
Pseudo R2	0.08	0.05	
log-lklhd	-28694.99	-14829.77	

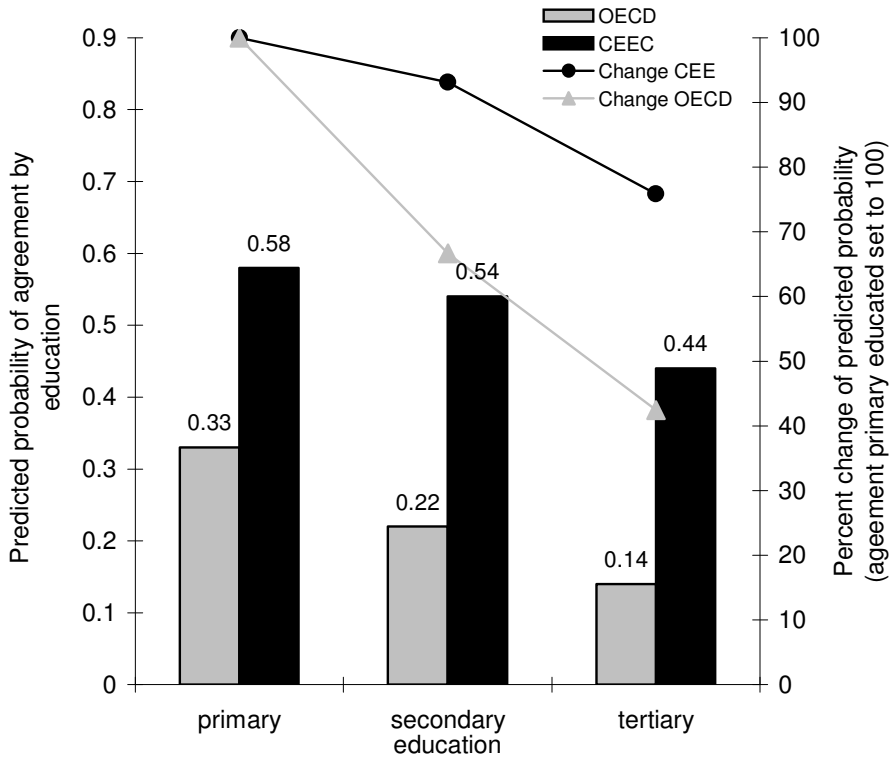
Note: results of this table are based on a similar regression model to that given in model 3 of Table 2.5 but this model here is run for OECD and CEE countries separatly. OECD countries are Austria, Australia, Denmark, Italy, Ireland, Japan, New Zealand, Netherlands, Norway, Portugal, Spain, Sweden, Swiss, USA and West-Germany. CEE countries are Bulgaria, Czech Republic, East-Germany, Hungary, Latvia, Poland, Russia, Slovakia and Slovenia. Source: ISSP 1998, author's calculations. Note: standard errors in parentheses; * significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent, light grey colour denotes that impact is significantly more pronounced in OECD countries, dark grey colour indicates that characteristic is significantly more important in transition countries.

Besides gender, Table 2.8 shows that higher age has a two times greater impact on the adherence to traditional values in the West than in the East. Since birth cohort differences can give some indices on changes in gender attitudes over time, Section 6 will investigate this issue further.

The most important regional difference in determinants is education. Respondents with secondary and tertiary education disagree significantly more with the gender stereotype in both regions than the benchmark respondent with primary education. However, education matters much more in terms of the magnitude of impact in OECD than in former communist countries at a significance level of 0.1 percent. The impact of secondary education (compared to primary education) on attitudes is three times and that of tertiary education two times smaller in the East than in the West.

As an aid for estimating the lower impact of education on traditional values in the East, Figure 2.4 graphs the predicted probabilities for agreeing with the gender stereotype by educational level for both regions (bars) based on the regression model results of Table 2.8 (all other independent variables are set to the regional mean).

Figure 2.4: Predicted probability of respondents to agree with patriarchal gender stereotype by education and region



Source: ISSP 1998, author's calculations
Note: calculations are based on regional means for demographic variables of models 1 and 2 in Table 2.8. Agreement refers to answer categories 'agree' and 'strongly agree'.

In addition, changes in predicted probabilities are given for both regions (lines) as percentage decrease of agreement of the primary educated (set to 100).

The predicted probability to agree with the patriarchal gender attitude for respondents with primary education is 0.58 and shrinks to 0.54 for secondary educated in the East. This decrease of predicted probabilities reflects a change of 8 percent (presented by the black line in Figure 2.4). In contrast, the decrease in the predicted probabilities for agreement from 0.33 (primary educated) to 0.22 (secondary educated) reflects a 35 percent fall in the West (grey line). Even though 10 percent less tertiary than secondary educated agree with the gender stereotype in the East, once expressed in percent of the predicted probability for the primary educated the fall in agreement in the West remains still greater. Hence, better education in the West leads to greater abandonment of patriarchal attitudes than in the East. Or formulated differently: people with different education in the East are more homogenous in their beliefs in traditional values than the population in OECD countries.

Social class does not have a significant impact on gender attitudes in the West but it has an as great impact as tertiary education in the East (the lower the social class the higher is adherence to traditional gender values) once controlled for individual characteristics.[70]

Retired people have (conditional on age) a greater adherence and single parents a smaller adherence to patriarchal values in the West while there are no sizable effects in the East. In addition, cohabitation leads to significantly higher liberal gender attitudes in the West, but is not affecting gender stereotypes in the East. Differences between both regions are significant at the one percent level. This might confirm results of Batalova and Cohen (2002) indicating that cohabiting couples share housework more equally than married couples in the West while this 'effect' could not be found as distinct in several CEE countries.

In transition countries respondents with children in the household are more traditional than other respondents but there is no similar pattern for the West.

Taken together, three main results are of importance. First, in both regions individual characteristics impact generally in the same direction on the degree of tradition gender attitudes. However, there are some interesting differences in the explanatory power and size of those effects. Second, different individual backgrounds are of varying importance in the regions. Lower social class and children in the

[70] While this dummy variable is not correlated with a dummy on secondary education, the correlation is still moderate with a coefficient of -0.23 regarding tertiary education (Table A 2.5).

household leads to more traditional values in the East but have rather no importance in the West. However, in the West single parenthood and cohabitation have some impact on gender attitudes but there is no similarly significant pattern in the East. Third, the size of the impact seems to differ between regions. Without taking into account significant differences for variables that just control for missing values[71] there is a considerable higher number of 'light grey' fields, indicating that in general individual background factors have a bigger sizeable 'effect' in the West than in the East. Especially education, retirement, religion and age gain a much higher explanatory power for differences in gender attitudes in the West than in the East. This indicates that people in CEE countries are more homogenous in their traditional beliefs than people with different background characteristics in Western industrialised countries.

2.5.2 Gender differences

This Sub-section aims at examining gender differences in the impact of individual background characteristics with the use of ordered logit regressions applied separately for men and women in East and West. Table 2.9 shows the results and presents for each region the gender difference of the β-coefficient with the standard error. Light grey fields indicate that males with the specific characteristic are more traditional than their female counterparts (negative values), while dark grey fields show a greater female adherence to gender inequality (positive value).

Results indicate that men who are married are not greatly different from single men in both regions. In contrast, in the East and the West married women adhere more to traditional gender attitudes on women's work than single women. This might suggest that women who marry are in general more prone to patriarchal attitudes. Another explanation could be that marriage in itself changes women's but not men's attitudes to women's work.

A further regional similarity in gender differences of the impact of individuals' characteristics regards those respondents who are not participating in the labour force. Again, men who are not in the labour force do not differ from (CEE country group) or are even more prone to liberal gender attitudes (OECD country group) than their full time working counterparts. In contrast, women who are not participating in the labour force are greatly in favour of patriarchal attitudes on women's work compared to full-

[71] For household size, children in household, household income and social class missing values were great, so that I controlled for missing values with the introduction of a dummy variable indicating non-response.

time working women. This 'effect' found for women might be endogenous, since women who think that it is the women's job to stay at home are likely to decide against entering the labour force. However, it is noteworthy that women's opportunity to stay at home might be quite limited in CEE where two earner incomes are often necessary for maintaining a household.

Table 2.9: Ordered logit regression results by region and gender, dependent variable agreement with statement (the higher the value the less agreement with the patriarchal gender attitude)

	OECD		Coefficient difference Male-female	CEE countries		Coefficient difference Male-female
	Male	female		male	female	
Age	-0.029	-0.025	-0.0040	-0.016	-0.013	-0.0030
	(0.002)***	(0.002)***	(0.0028)	(0.003)***	(0.003)***	(0.0042)
Divorced/separated	0.166	-0.006	0.172	0.132	-0.276	0.408
	(0.092)*	(0.082)	(0.123)	(0.136)	(0.111)**	(0.176)
Widow	-0.133	-0.260	0.127	0.047	-0.262	0.309
	(0.128)	(0.084)***	(0.153)	(0.175)	(0.115)**	(0.209)
Married	0.114	-0.224	0.338	0.134	-0.234	0.368
	(0.060)*	(0.057)***	(0.083)***	(0.095)	(0.084)***	(0.127)***
Household size	-0.133	-0.058	-0.075	-0.074	-0.096	0.022
	(0.018)***	(0.017)***	(0.025)***	(0.024)***	(0.022)***	(0.033)
HH size missing	-0.499	-0.642	0.143	-0.180	-0.377	0.197
	(0.089)***	(0.088)***	(0.125)	(0.474)	(0.408)	(0.625)
Secondary education	0.601	0.500	0.101	0.165	0.200	-0.035
	(0.051)***	(0.045)***	(0.068)	(0.077)**	(0.066)***	(0.101)
Tertiary education	1.071	1.138	-0.067	0.548	0.603	-0.055
	(0.062)***	(0.060)***	(0.086)	(0.101)***	(0.088)***	(0.134)
Retired	-0.120	-0.435	0.315	0.026	0.013	0.013
	(0.069)*	(0.072)***	(0.100)***	(0.099)	(0.085)	(0.130)
Part-time employed	0.117	-0.270	0.387	0.147	-0.084	0.231
	(0.078)	(0.056)***	(0.096)***	(0.139)	(0.102)	(0.172)
Not in labour force	0.369	-0.656	1.025	0.077	-0.355	0.432
	(0.070)***	(0.050)***	(0.086)***	(0.095)	(0.070)***	(0.118)***
Unemployed	0.048	-0.166	0.214	0.048	-0.012	0.060
	(0.098)	(0.103)	(0.142)	(0.097)	(0.092)	(0.134)
Cohabitation	0.129	0.312	-0.183	0.052	-0.162	0.214
	(0.078)*	(0.078)***	(0.110)*	(0.121)	(0.110)	(0.164)
Child in household	0.112	0.090	0.022	-0.230	-0.226	-0.004
	(0.061)*	(0.058)	(0.084)	(0.079)***	(0.072)***	(0.107)
Single parent	0.372	0.094	0.278	0.166	-0.003	0.169
	(0.206)*	(0.112)	(0.234)	(0.379)	(0.149)	(0.407)
Child missing	0.482	0.541	-0.059	0.948	1.034	-0.086
	(0.064)***	(0.063)***	(0.090)	(0.095)***	(0.088)***	(0.129)
HH income level	0.095	0.061	0.034	0.059	0.074	-0.015
	(0.009)***	(0.008)***	(0.012)***	(0.013)***	(0.011)***	(0.017)
HH income missing	-0.191	-0.148	-0.043	0.192	0.244	-0.052
	(0.052)***	(0.045)***	(0.069)	(0.076)**	(0.069)***	(0.103)
Low social class	0.052	0.042	0.010	-0.512	-0.528	0.016
	(0.048)	(0.045)	(0.066)	(0.062)***	(0.055)***	(0.083)
Class missing	0.304	0.355	-0.051	0.317	0.054	0.263
	(0.051)***	(0.047)***	(0.069)	(0.117)***	(0.102)	(0.155)
Highly religious	-0.660	-0.716	0.056	-0.483	-0.443	-0.040
	(0.064)***	(0.050)***	(0.081)	(0.093)***	(0.068)***	(0.115)
Observations	9292	10853		4530	5557	
Pseudo R-squared	0.07	0.09		0.04	0.05	
log-lklhd	-13583.30	-15011.47		-6546.33	-8255.60	

Note: OECD countries are Austria, Australia, Denmark, Italy, Ireland, Japan, New Zealand, Netherlands, Norway, Portugal, Spain, Sweden, Swiss, USA and West-Germany. CEE countries are Bulgaria, Czech Republic, East-Germany, Hungary, Latvia, Poland, Russia, Slovakia and Slovenia. Source: ISSP 1998, author's calculations

Gender differences in the impact of individual characteristics differ across regions for all other variables besides marriage and labour force participation. Being divorced or separated compared to being single has a greater 'effect' on women than on men in the East but a similar pattern is not visible in the West. However, in OECD countries retirement and part-time employment are more related with patriarchal views for women than for men. A similar pattern cannot be found in transition countries. This regional difference corresponds with the finding that retirement was found to be significant for explaining gender attitudes only in the West (see Table 2.8). However, only about 5 percent of respondents in the CEE sample but 13 percent in the OECD sample is part-time employed (see Tables A 2.3 and A 2.4 in the Appendix) so that smaller sample sizes in the East might lead to the insignificant gender difference.

It is noteworthy that the magnitude of gender differences is bigger for the West than for the East. This is similar to the pattern found for regional differences. Regional and gender differences in the impact of explanatory values show that the influence of demographic factors in forming traditional values is generally lower in CEE than in OECD countries. This indicates that people in transition countries seem to be more homogenous in their traditional beliefs.

2.5.3 Decomposition analysis

Where do regional differences in gender attitudes derive from? First, they might be determined by differences in the population composition between regions. On one side Section 2.4.2 showed that the control for regional characteristics did not change greatly the regional gap between OECD and CEE countries regarding the agreement with patriarchal attitudes. This might indicate that regional differences in population characteristics are not of great importance. Nevertheless, as shown in Tables A 2.3 and A 2.4 in OECD countries more people complete tertiary education and less people are retired or attribute themselves to a low social class than in CEE. This composition in Western industrialised countries seems to be favourable in terms of liberal gender attitudes since low social class, retirement and lower education are related to higher traditional values in CEE (as discussed above). Hence, regional differences in gender attitudes might be partly due to variation in population composition between regions.

Second, another explanation for attitude gaps could be the great regional differences in the impact of individual characteristics on patriarchal attitudes that were examined in Section 2.5.1.

This Section examines the contribution of the two factors (first regional differences in population characteristics and second regional differences in the impact of these characteristics) on the regional gap of gender attitudes by estimating an Oaxaca decomposition that is described in Sub-section 2.5.3.1. Results are discussed in 2.5.3.2.

2.5.3.1 Theoretical considerations

The decomposition analysis, introduced by Oaxaca (1973) and Blinder (1973), offers a way of determining the extent to which any observed differences is a consequence of characteristic differences (e.g. in the West more people completed tertiary education than in the East) or the consequence of a different impact of characteristics (e.g. higher age has a greater impact on gender attitudes in the West than in the East).

Gomulka and Stern (1990) extended the Oaxaca and Blinder method for decomposing group differences in means into an explained and residual component for group differences in probabilities for probit models.

This analysis uses a logit model based on the following equation for CEE countries:

$$(1) \qquad P(\hat{\beta}^{CEE} X_i^{CEE}) = \frac{1}{1+\exp(-\hat{\beta}^{CEE} X_i^{CEE})}$$

where $P(\hat{\beta}^{CEE} X_i^{CEE})$ is the probability of person *i* in the CEE countries to agree or strongly agree with the gender stereotype, $\hat{\beta}^{CEE}$ is the vector of the estimated coefficients and X_i^{CEE} is the associated vector of characteristics like socio-economic background and gender. A similar logit model is fitted for OECD countries.

Using equation (1) the probability of agreement for each individual is calculated separately for East and West and then averaged for both regions. The regional differences in the average probabilities for agreeing with the patriarchal attitude Pr is then

$$(2) \qquad \overline{\Pr}_{CEE} - \overline{\Pr}_{OECD} = \overline{P}(\hat{\beta}^{CEE} X_i^{CEE}) - \overline{P}(\hat{\beta}^{OECD} X_i^{OECD})$$

By subtracting and adding the term $\overline{P}(\hat{\beta}^{OECD} X_i^{CEE})$ this regional difference (PR_{Dif}) can then be decomposed into the two components:

$$(3)\ \overline{\Pr}_{CEE} - \overline{\Pr}_{OECD} = [\overline{P}(\hat{\beta}^{CEE} X_i^{CEE}) - \overline{P}(\hat{\beta}^{OECD} X_i^{CEE})] + [\overline{P}(\hat{\beta}^{OECD} X_i^{CEE}) - \overline{P}(\hat{\beta}^{OECD} X_i^{OECD})]$$

$$\Pr_{Dif} = \quad \text{CT} \quad + \quad \text{PT}$$

Hence, I make use of the OECD coefficients to predict the CEE countries' average probability using the CEE countries characteristics.[72] The first term in square brackets (CT) is the contribution of the coefficients and the second term (PT) is the contribution of population characteristics to the total differences in regional average probabilities.

Due to the use of a logit model, I collapse the categorical variable with five response categories into a binary variable as dependent variable with A_i= 0 / 1 whereby A_i= 1 if respondents agree or strongly agree with the traditional statement A_i=0 otherwise. Independent variables are again those given in Table 2.4.

2.5.3.2 Results

Table A 2.6 in the Appendix presents parameters of the logistic regression model used for the estimation of probabilities by regional coefficients and population characteristics displayed in Table 2.10.[73] Similar to results in previous Sections (see Table 2.6) OECD countries' predicted probability of agreement with traditional gender stereotypes is 0.263 and it is about twice as high with 0.534 in CEE countries. Hence, in post-transition countries there is a 0.271 higher probability to agree with gender stereotypes (Pr_{Dif}). If the impact of determinants in CEE countries were that of OECD countries (β_{OECD}) the probability of agreement in post-communist countries would be rather similar to that in OECD countries (0.265). On the other hand, if we applied the coefficients of CEE countries to the sample of OECD countries, the degree of agreement in OECD countries (β_{CEE}) would be slightly lower than in transition countries (0.491). Hence, it is the different impact of coefficients

[72] The construction of a second decomposition for CEE countries by simply adding and subtracting the term $\overline{P}(\hat{\beta}^{CEE} X_i^{OECD})$ in (2) shows that the use of the CEE countries coefficients to predict the OECD probabilities leads to similar results.

[73] There are slight differences between results of Tables 2.6 and 2.10 even though results are based on a similar assumption of determinants of agreement Table 2.6 shows results of an ordered logit model while Table 2.10 gives results of a binary logistic model (parameter results given in Table A 2.6) for the Oaxaca decomposition. In Table 2.6 the predicted probabilities are estimated by setting independent variables to the mean of both regions.

(CT=0.269) that explain differences between regions, whereby differing populations characteristics have a rather negligible explanatory power (PT=0.002).

Table 2.10: Decomposition analysis showing probabilities depending on regional coefficients and characteristics

	β_{OECD}	β_{CEE}
X_{OECD}	0.263	0.491
X_{CEE}	0.265	0.534

Source: ISSP 1998, authors' own calculations

It is noteworthy that unobserved variables not included in the model might drive results of the Oaxaca decomposition through the constant term. Especially in case a variable were excluded that is very important for explaining differences in agreement in transition but not in OECD countries or vice versa results of the decomposition analysis would be different. However, it is very difficult to judge the inclusiveness of the model used. The low pseudo R^2 of the regression results (see Table A 2.6 in the Appendix) indicates that other factors besides gender, family structure, demography, socio-economic status, employment status and religion are at work. Hence, the results of the Oaxaca decomposition need to be viewed with some caution.

What does it mean in practical terms regarding the further development of liberal values in both regions that it is not differences in population characteristics but in their impacts that drive the great regional gender attitude gap? Assuming that regression results were valid also in the future, an increase of people with higher education, lower average age etc. would decrease traditional values in OECD countries significantly but not so much in CEE countries. Even if people are very different in their characteristics within CEE countries they seem to be more homogenous in their traditional beliefs in post-communist countries than people with different background characteristics in Western industrialized countries. Hence, while in the West traditional values are contested between different population groups, gender stereotypes are a common and widely accepted feature among people in post-communist countries.

Given the much lower impact of individual background factors, increases of liberal gender views over time might be lower in post-communist countries. How patriarchal values might be changing by region over time will be the focus of the next Section.

2.6 How will gender-role attitudes change over time in the East and West?

Explanations for changes of gender stereotypes over time are mainly twofold but interlinked. First, changes in attitudes might simply reflect the trend, that older, more traditional generations are replaced by younger, more egalitarian-minded ones ('cohort succession'). Hence, these changes can be measured by comparing attitudes between different birth cohorts. Section 2.6.1 examines these changes in attitudes. (This Section focuses on age groups instead of birth cohorts. Since both are perfectly correlated once only one time point (data for 1998) is used results are the same whether the focus is on birth cohorts (e.g. born between 1974 and 1980) or age group (18 to 24 year-olds).)

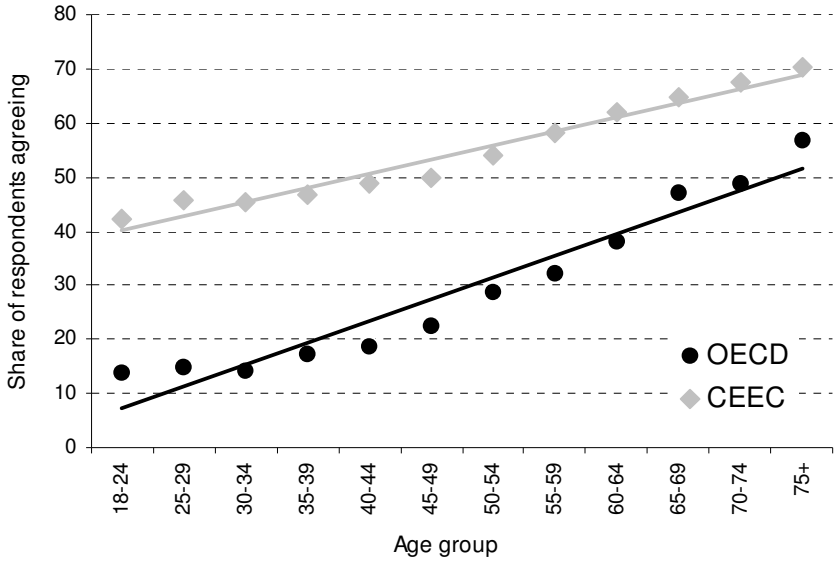
However, the examination of age group or birth cohort effects does not take into account that there might be a deeper underlying value shift among the populations in form of a gradual change across all populations segments. (Rice & Coates, 1995) For CEE countries an important argument in favour of this value shift might be that the impact of transition did not only change people's lives in the economic sphere but had also a direct influence on individuals' cultural and societal norms. For catching this effect, Section 2.6.2 compares cross-sectional data collected in the ISSP waves for the rather short time period from 1994 to 1998.

2.6.1 Change over time estimated by different attitudes of age groups

A precondition for the measurement of changes over time by using solely age groups is the assumption that social trends have only a marginal effect on cultural norms but that, through the socialization process, the experience of predominant conditions during the formative years of childhood and early adolescence make an indelible impression on people. (Ingelhart & Norris, 2003) Even if certain decisive events can alter gender attitudes in age groups the underlying assumption of this Section is that most predominantly values held in later life can be attributed to experiences in early years. (This assumption will be relaxed in Section 2.6.2.)

It is also important to note that attitudes in the next decade will be an average across birth cohorts that are covered in ISSP 1998 data, but also future cohorts that cannot yet be observed. In the following analysis it is assumed that the changes of attitudes over birth cohorts are constant so that it is possible to predict future birth cohorts' attitudes. Nevertheless, we cannot be sure that current trends in changes of attitudes will reflect also those of future cohorts.

Figure 2.5: Share of respondents agreeing (agree + strongly agree) with traditional gender roles by age group and region



Source: ISSP 1998
Note: OECD and CEE country group agreement refers to unweighted average of country figures. OECD countries are Australia, Austria, Denmark, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, UK, USA and West-Germany. CEE countries are Bulgaria, Czech Republic, East-Germany, Hungary, Latvia, Poland, Russia, Slovakia and Slovenia.

Figure 2.5 presents the share of respondents agreeing (agree + strongly agree) with the traditional gender-role statement for different age groups and regions. The graph does not only display the already examined higher liberal values in OECD countries but reveals also the much more pronounced increase in agreement with rising age in the West compared to the East (see regression results on the variable 'age' given in Table 2.8 by region). In OECD countries 40 percent points more people in the oldest age group agree (75 + year-olds) with the gender stereotype compared to the youngest group (18 to 24 year-olds). These differences are less than 30 percent points in CEE countries. Figures A 2.1 and A 2.2 in the Appendix show the share of respondents agreeing with the statement for each transition country covered in ISSP separately.

Transition countries appear to be heterogeneous regarding the impact of age on traditional values. Impacts of age on patriarchal attitudes are similar between (pre-1990) OECD countries and East-Germany, Slovenia and Poland (see Figure A 2.1 in the Appendix). Very different to these countries is the agreement between age groups in Russia, Bulgaria and Latvia (see Figure A 2.2 in the Appendix). In all three countries only 20 percent points more elderly than youngsters agree with the tradition gender statement. Hence, expressed in absolute differences age has a twice as high

impact in Western European countries (with 40 percent points difference) than in these three transition countries.

Changes of attitudes across birth cohorts are likely to reveal time trends of societal traditional value adherence. Greater variation in agreement between cohorts in one country is probable[74] to result in a greater shift of traditional values to liberal values by cohort succession over time (since much more traditional cohorts are taken over from younger much less traditional cohorts). In order to estimate changes over time within countries I run an OLS regressions through the data points given in Figure 2.5 and in Figures A2.1 and A 2.2 for each country separately. Hence, a group's (c) agreement (agree + strongly agree) (A_c) with the gender stereotype is the dependent variable and age groups are the continuous independent variable[75]. The following equation clarifies the simple regression model used:

(1) $A_c = \beta_0 + \beta_1 * \text{age group}$

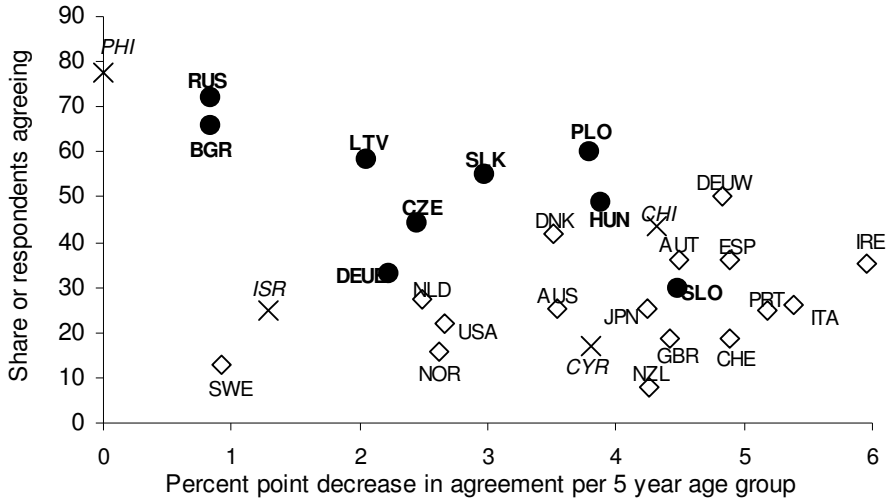
The 'age group' variable is continuous with the units of measurement ranging from 1 to 12; 1 denotes the youngest age group, 18 to 24 year-olds (or youngest birth cohort with those born between 1974 and 1980), 12 the oldest age group (above 75) or birth cohort. In this model it is not controlled for any other respondents' characteristics. The resulting slope given by the β_1-coefficient captures the increase of the share of people agreeing with patriarchal gender attitudes for each older age group or birth cohort (that comprises 5 years).[76] Table A 2.7 in the Appendix shows the regression results for all transition countries separately and for the pooled OECD sample. In OECD countries the constant and the β-coefficient are both about 4 points. This implies an 8 percent agreement of 18 to 24 year-olds (intercept value+1*4) and a 4 percent increase with each older age group. For example, 12 percent of 25 to 29 year-olds and about 52 percent of the last age group (75 + year-olds) are predicted to agree.

Figure 2.6 shows the so calculated β-coefficient for each country on the x-axis and the agreement (agree + strongly agree) for the whole society on the y-axis.

[74] An important assumption is that changes over age groups prevail also in future age groups for that attitudes cannot yet be measured.
[75] The age group variable is continuous since one age group covers respondents born in 5 consecutive years.
[76] I hereby assume a linear relationship between agreement and age cohort which seems true given results of descriptive statistics presented in Figures A 2.1 and A 2.2 in the Appendix.

In OECD countries higher agreement with traditional values is positively correlated with a greater variation between age groups (correlation coefficient between societal agreement and change 0.39). Hence, in Western industrialised countries the gap between more traditional and less traditional countries will decrease over time (assumed that current trends in attitude changes observed across current birth cohorts will reflect also those of future cohorts). The extreme case is Ireland, where a great agreement with patriarchal attitudes in the population of 38 percent is likely to shrink rapidly over time, since there is a fall in agreement of 6 percent points from one age group to the consecutive younger age group. Sweden is the other extreme, where a very low agreement with patriarchal values in the society (10 percent) is paired with a low decrease in agreement over age groups (1 percent) indicating that agreement with the patriarchal statement will change very slowly in this country.

Figure 2.6: Relation between changes of traditional values by age groups and the percentage of people agreeing with traditional gender stereotypes



Source: ISSP 1998, author's calculations
Note: the y-axis shows the percentage of people in a county that agree or strongly agree with the statement that women should stay at home. The x-axis shows the country-specific slope of the curve (see Figures A 2.1 and A 2.2 in Appendix) regarding the increase of traditional values for each age group that comprises 5 years.

In contrast, the trend is the other way round in transition countries (correlation coefficient -0.61). These transition countries that are highly traditional in terms of gender attitudes are also those countries where changes of attitudes take place slowly. The large average agreement with the gender stereotype of 70 percent in Russia is difficult to overcome given that there is only an about 1 percent point difference in agreement between each age group. Attitudes to gender inequality are also very probable to persist in Bulgaria and Latvia over time. On the other hand, Poland with

an average agreement of 60 percent and Hungary with 50 percent show a relative high change in traditional values over groups. This indicates that these countries are very likely to follow the path of greater gender equality in the future. Hence, in contrast to OECD countries the gap in gender attitudes between transition countries is likely to increase over time. In addition, given that attitudes change faster in OECD than in transition countries in terms of age group succession, additionally the East-West gap in gender attitudes is likely to increase.

However, an important assumption of these predictions is that the trend of changes observed across current birth cohorts remains stable also for future cohorts.

2.6.2 Changes of gender attitudes between 1994 and 1998

The cross-sectional focus on changes in gender attitudes cannot disentangle generational effects (cohort succession) from life-cycle effects that may alter attitudes as people move from youth to middle age and to retirement. Two waves of the ISSP survey serve as an alternative estimation of these life-cycle effects. Given that comprehensive data are only available for the years 1994 and 1998 life cycle effects need to be huge for being visible in this short period of time. However, since the transition process was a decisive historical event changing people's political and economical environment dramatically, societal changes might be at stake in this region in the 1990s. If changes in attitudes to gender inequality are as big as changes in the economic and political sphere four years of differences might already be sufficient for showing trends in gender attitudes.[77]

Figure 2.7 presents the changes of agreement (agree + strongly agree) with gender stereotypes for some CEE countries in comparison to three OECD countries between the years 1988 and 1998: Norway with a low, Austria with a moderate and the Philippines with a high average consent on gender stereotypes.

Results indicate that there is little change in agreement with the gender stereotype in Russia, Bulgaria and the Philippines between 1994 and 1998. These are the countries in which changes in traditional values between age groups were very small, too (see previous Section). With the exception of Eastern Germany in all other countries attitudes to gender inequality were decreasing in the time period of four or eight years. From 1991 to 1998 greatest changes in agreement seem to appear in

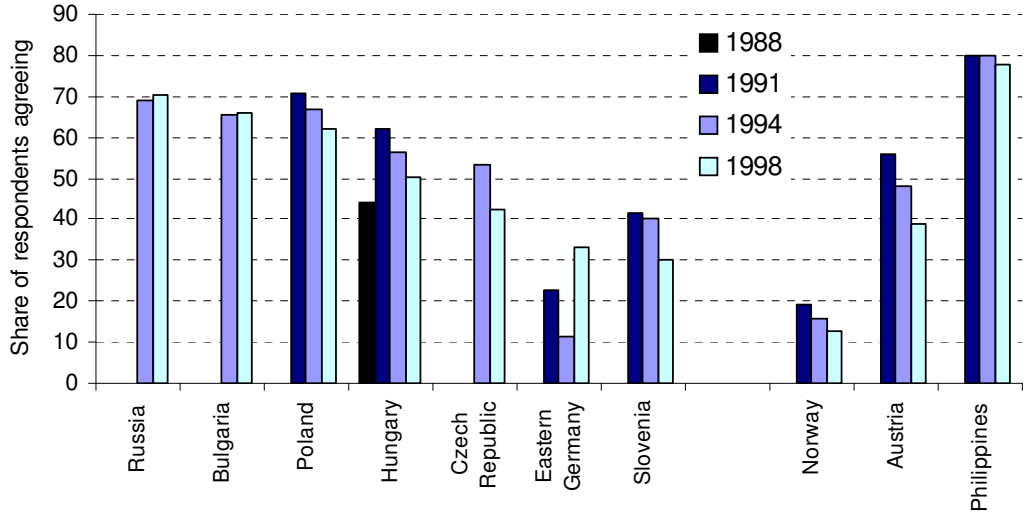
[77] In addition, changes in trends measured from 1994 to 1998 are also likely to reflect the before discussed change from on age cohort to the next, since the time span of one age cohort was set to 5 years.

Austria and Hungary. Both countries were characterised with a relative high variation in gender attitudes between age groups (Figure 2.6).

Nevertheless, in Hungary from 1988 to 1991 and in Eastern Germany from 1994 to 1998 data suggest an increase in traditional values that is difficult to explain.

Differences in gender attitudes over years might derive from different population characteristics between countries and years, even though great changes over time are rather unlikely. Nevertheless, I estimate the 'conditional' effect of the year change by applying ordered logit regression described already in 2.4.2.1 with the additional use of a dummy variable for years (year 1994 set to 0, year 1998 set to 1) and interaction variables for years and regions.[78]

Figure 2.7: Percentage of people who agree or strongly agree with the patriarchal gender attitude by country and year



Source: ISSP 1988, 1991, 1994 and 1998. Countries are ordered first by region and second by agreement in 1998

Table 2.11 presents only these results important for examining changes over years (the remainder of the regression results is reported in Table A 2.8 in the Appendix). The control group are respondents in year 1994 in OECD countries.

In all models of Table 2.11 the year dummy shows a highly significant positive value indicating that in 1998 patriarchal attitudes are less predominant than in 1994. This result confirms unconditional results of Figure 2.7. In order to examine whether there is a different decrease in gender attitudes between regions over time I introduce interaction variables in Model 3 (capturing differences between OECD

[78] In this analysis data refer solely to the 12 OECD and seven CEE countries that were covered in both ISSP waves.

countries as a control group and CEE countries) and 4 (comparing OECD countries with Russia and the six remaining CEE countries).

Table 2.11: Changes of attitudes to gender inequality over years? Ordered logit. 1994 and 1998 data.

	(1)	(2)	(3)	(4)
Year 1998	0.221 (0.029)***	0.235 (0.029)***	0.242 (0.032)***	0.210 (0.032)***
CEE countries	-1.076 (0.020)***		-1.044 (0.029)***	
CEE countries in 1998			-0.058 (0.038)	
cee6		-1.253 (0.021)***		-1.300 (0.031)***
Russia		-2.137 (0.042)***		-2.111 (0.059)***
cee6 in 1998				0.084 (0.039)**
Russia in 1998				-0.055 (0.081)
Observations	40612	40612	40612	40612
Pseudo R-squared	0.08	0.10	0.08	0.10
log-lklhd	-59610.03	-58454.03	-59608.85	-58451.21

Source: ISSP 1994, 1998, author's own calculations
Note: regression model similar to that applied for estimations in Table 2.5. This table shows only the results for the year and regional variables and their interaction; see Table A 2.8 in Appendix for full results. OECD countries refer to Australia, Austria, Ireland, Italy, Netherlands, New Zealand, Norway, Spain, Sweden, UK, USA and West-Germany; CEE countries are Bulgaria, Czech Republic, Eastern Germany, Hungary, Poland, Russia and Slovenia.

The 'CEE countries in 1998' dummy proves not to be significant, indicating that there is no noteworthy difference between OECD and transition countries in the decline of adherence to traditional values during both years (Model 3). Once transition countries and Russia are split up (Model 4), also the 'Russia in 1998' dummy does not show any significant effect in time changes. However, the dummy for the remaining six transition countries becomes significant (5 percent level) with a positive value. This result suggests a slight trend of decreasing traditional values in the transition countries of Eastern Germany, Hungary, Czech Republic, Slovenia, Poland and Bulgaria once pooled together and compared to the OECD country sample. Nevertheless the 'effect' is rather small in magnitude (0.084)[79] given that it is still 15 times lower than the difference in patriarchal attitudes between OECD and transition countries (-1.300) and covers a 4 year time period.[80] Furthermore, a significance level of 5 percent is not very impressive given the high sample size.

[79] The effect vanished once a second dummy variable for Bulgaria is introduced.
[80] One possibility for estimating the impact of the small coefficient is to guess roughly how much time this group of transition countries would need for catching up with the relative low adherence to gender inequality predominant in OECD countries: not before the next 60 years (15 * 4). Nevertheless, this

Taken together, results suggest that traditional values in post-communist countries will not be overcome as quickly as in Western industrialised countries. If we assume that traditional gender values are decisively moulded by early adolescence experience the relation between age groups and agreement with gender values shows indeed that though there is a higher traditional believe in gender roles in post-transition countries this will be transformed slower into liberal beliefs than in Western industrialised countries. Hence, the gap between the East and West regarding the adherence to traditional values on women's work might even increase. However, transition countries are very heterogeneous: changes to liberal gender attitudes are more unlikely in Russia, Bulgaria and Latvia where attitudes on gender inequality are very pronounced than in Poland, Slovakia and Hungary where societies adhere much less to traditional beliefs. This indicates, that the gap in traditional beliefs between transition countries is likely to increase.

Based on attitudes in two time intervals, 1994 and 1998, results show a slight but not very significant trend that especially in Central European countries value changes have taken place more pronounced than in Western industrialised countries. In case this effect is persistent over greater time periods the widening gap between East and West in terms of patriarchal attitudes forecasted by birth cohort succession might be diminished.

2.7 Conclusion

Economic indicators on women's access to tertiary education, women's employment share and the gender pay gap revealed a similar level of gender equality in the labour force for East and West. This stands in contrast to the regional differences in what people actually think on women's societal role: a strikingly higher share of people in the East than in the West believe that women should be homemakers and men breadwinners. In Russia - the country with the longest history of communism – as many as 70 percent of the population judges women's job to be at home. This prevalence of traditional attitudes to women's work is more than twice as high as in a pooled sample of Western industrialised countries. In Sweden agreement with patriarchal values is significantly lower than in every other transition or OECD country covered by the data.

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prediction over a long time period is only based on two data sets covering a four year trend and needs therefore to be interpreted with caution.

It is not population characteristics that determine the great gap in gender attitudes found between East and West. But different impacts of population characteristics explain the regional divergences in gender attitudes as was shown by applying an Oaxaca decomposition analysis. People in the East appear to be quite homogeneous in their strong patriarchal beliefs that are mainly unaffected by their socio-economic background. Patriarchal values in the West, quite the reverse, are predominantly shaped by individual background. Hence, results suggest that an increase in education would diminish patriarchal values substantially in the West, but would not necessarily have an as great effect on societal norms in the East.

Results of ordered logit regressions run separately for OECD and transition countries indicate a much greater impact of education, female full-time employment, gender, retirement and age shaping attitudes in the West than in the East. In addition, some different individual backgrounds gain varying importance in the regions. Single parenthood and cohabitation leads to more liberal gender attitudes only in OECD countries. On the other hand, only in former communist countries lower social class, children in the household and being married account for more traditional values.

Surprisingly, gender differences in agreement with gender stereotypes on work are anything but substantial and seem not to be related to the degree of patriarchal attitudes in the society. This proves also to be true once controlled for population characteristics. However, gender differences in determinants of attitudes are much greater in the West than in the East. Part-time employment and retirement has a significantly greater 'effect' on patriarchal attitudes for the female than for the male population in the West. There is no comparable pattern in the East.

Since there is a huge regional gap in patriarchal attitudes it is important to estimate how preferences for gender-roles will change over time. First, I assumed that changes in attitudes simply reflect the trend that older more traditional generations are replaced by younger, more egalitarian minded ones. Comparing OECD with transition countries shows that agreement with patriarchal values is more conform between age groups in the East than in the West. Hence, the regional gap in patriarchal values might even increase between transition and OECD countries since liberal values are accumulating more quickly in the West than in the East. For OECD countries results suggest that those countries with an on average high agreement with the gender stereotype show greater variation between age groups. This indicates that the gap between OECD countries regarding patriarchal values will decline over time. The contrary is true for transition countries. Those countries that are most in favour of

gender inequality show also the highest conformity between age groups. The average agreement with the gender stereotype of 70 percent in Russia and Bulgaria is difficult to overcome given that there is only an about 1 percent point difference in agreement between age groups (that comprise 5 years of age difference).

Nevertheless, the transition process might have lead to a deeper underlying value shift among the whole population. This is measured by comparing attitudes between the years 1994 to 1998. Results show a very slight trend for predominantly Central European transition countries that value changes have taken place more pronouncedly in the East than in the West. However, the effect is very small in magnitude and not very significant. Nevertheless, if this trend is persistent over greater time periods it might diminish the widening gap between the West and East forecasted by just focusing on birth cohort succession.

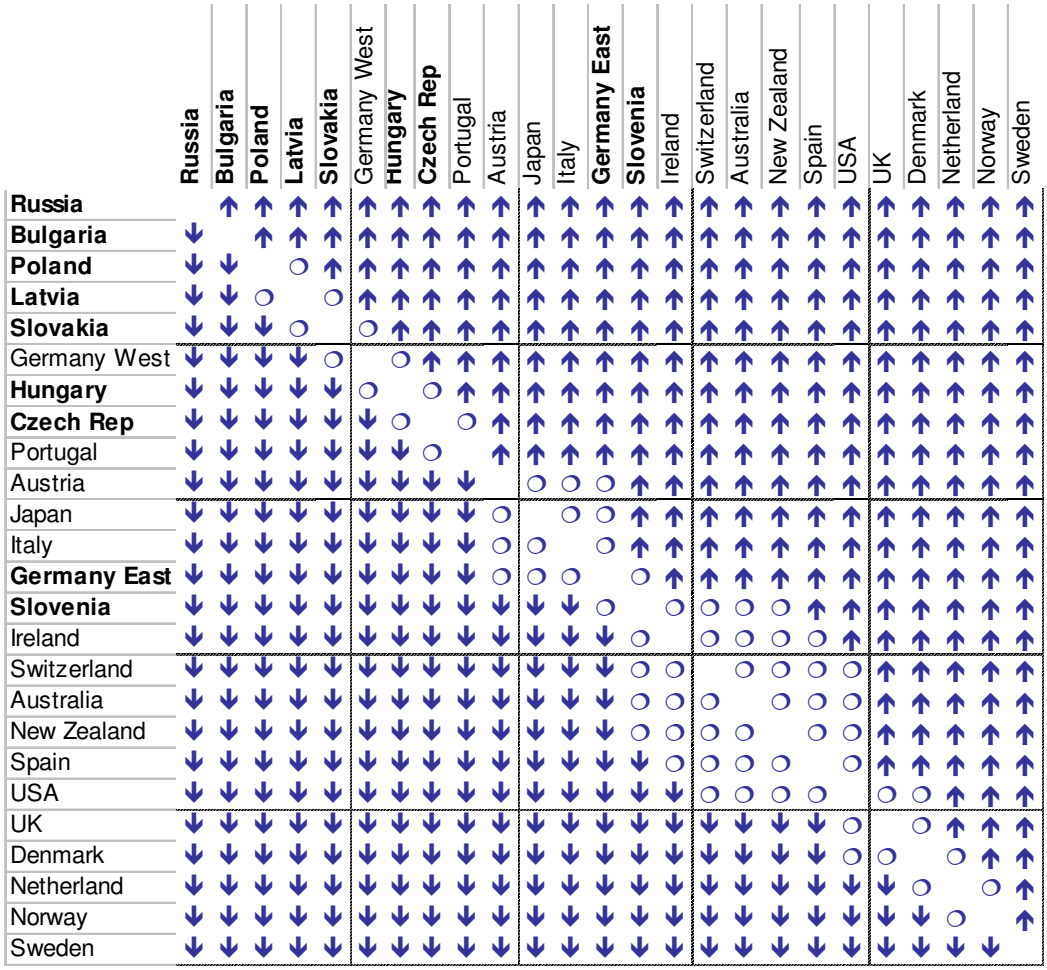
The high adherence to patriarchal values regarding women's work as well as their probable persistence over time are of a great concern for CEE countries. These attitudes are likely to impact upon labour market policies and people's (e.g. employers') behaviour. Therefore, they will probably shape women's opportunities in labour market. Hence it is astonishing, that the high patriarchal attitudes to women's work cannot be revealed once focusing on economic indicators. One reason might be that economic factors discussed do not capture the already existing gap between East and West in gender equality in the labour market that the analysis of attitudes revealed. Another explanation is, that economic indicators still show the inherited 'gender equality' in the labour market having been forced upon the society during communism. In this case, societal agreement on patriarchal values is very likely to change labour market structures and decrease women's opportunities in transitional labour markets over time.

2.8 Appendix

Table A 2.1: Response rate, field work and sample size of ISSP 1998

Country	Response rate in percent	Sample size	Field work	Sample
Austria	60.7	1002	Face-to-face	Stratified multi-stage random sample
Australia	Na	1310	Na	Na
Bulgaria	94.1	1102	Face-to-face	Two stage randomised clustered sample
Canada	29.1	974	Self-completion Mail, one reminder	Stratified random sample
Czech Republic	39.6	1223	Face-to-face	Three stage random stratified sample
Denmark	64.0	1114	Face-to-face	Stratified random sample
France	10.3	1133	Mail, no reminder	Stratified random sample
Germany West	60.1	1000	Face-to-face + self-completion questionnaire	Multistage random sample
Germany East	66.0	1006		
Hungary	52.2	1000	Face-to-face	Three stage random stratified sample
Ireland	Na	1010	Na	Na
Italy	73.7	1369	Face-to-face	Na
Japan	80.4	1368	Self-completion	Two-stage stratified random sample
Latvia	83.4	1200	Face-to-face	Multi-stage stratified sample
Netherlands	96.1	2020	Face-to-face	Random sample
New Zealand	64.9	998	Mail survey with four waves	Random sample
Norway	61.6	1532	Mail-survey, one reminder, two follow ups	Stratified random sample
Poland	67.2	1147	Face-to-face	Multi stage random sample
Portugal	79.7	1201	Face-to-face	Random sample
Russia	52.9	1703	Face-to-face	Multi-stage stratified random sample
Slovenia	35.3	1006	Face-to-face	Stratified random sample
Slovakia	Na	1284	Face-to-face	Stratified random sample
Spain	96.0	2488	Face-to-face	Stratified random sample
Sweden	59.7	1189	Postal survey with two reminders	Stratified random sample
Switzerland	Na	1204	Telephone interviews	Random sample
UK merged Great Britain	45.3	804	Face-to-face + self-completion questionnaire	Multi-stage random sample
Northern Ireland	Na	812		Na
USA	68.6	1284	Face-to-face	Multistage probability sample

Table A 2.2: Multiple comparisons of agreement (strongly agree and agree) with statement between countries



Note: refers to significance at 1 percent level. Without Bonferroni adjustment.

❍not statistically significant difference
🡻country in row significantly smaller agreement with gender stereotype than country in column
🡹country in row significantly higher agreement with gender stereotype than country in column

Table A 2.3: Summary statistics for OECD countries based on ISSP 1998

Variable	Obs	Mean	Std. Dev.	Min	Max
Gender stereotype	21040	3.500	1.338	1	5
Female	21320	0.534	0.499	0	1
Age	21291	45.931	17.356	16	95
Divorced/separated	21248	0.069	0.254	0	1
Widow	21248	0.074	0.262	0	1
Married	21248	0.605	0.489	0	1
Household size	21344	2.956	1.451	1	13
HH size missing	21344	0.069	0.253	0	1
Secondary education	21255	0.522	0.500	0	1
Tertiary education	21255	0.217	0.412	0	1
Retired	21220	0.180	0.384	0	1
Part-time employed	21220	0.125	0.330	0	1
Not in labour force	21220	0.098	0.297	0	1
Unemployed	21220	0.040	0.196	0	1
Cohabitation	21344	0.066	0.248	0	1
Child in household	21344	0.301	0.459	0	1
Single parent	21344	0.023	0.149	0	1
Child missing	21344	0.194	0.395	0	1
Household income level	21344	5.035	2.575	1	10
HH income missing	21344	0.190	0.393	0	1
Low social class	21344	0.252	0.434	0	1
Class missing	21344	0.195	0.396	0	1
Highly religious	20705	0.132	0.338	0	1

Note: OECD countries are Australia, Austria, Denmark, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, UK, USA and West-Germany.

Table A 2.4: Summary statistics for CEE countries based on ISSP 1998

Variable	Obs	Mean	Std. Dev.	Min	Max
Gender stereotype	10471	2.552	1.287	1	5
Female	10672	0.534	0.499	0	1
Age	10660	44.568	16.963	16	92
Divorced/separated	10665	0.085	0.279	0	1
Widow	10665	0.109	0.312	0	1
Married	10665	0.604	0.489	0	1
Household size	10672	3.120	1.531	1	15
HH size missing	10672	0.004	0.059	0	1
Secondary education	10655	0.611	0.488	0	1
Tertiary education	10655	0.161	0.368	0	1
Retired	10646	0.228	0.420	0	1
Part-time employed	10646	0.053	0.224	0	1
Not in labour force	10646	0.116	0.320	0	1
Unemployed	10646	0.097	0.296	0	1
Cohabitation	10672	0.058	0.233	0	1
Child in household	10672	0.360	0.480	0	1
Single parent	10672	0.021	0.143	0	1
Child missing	10672	0.100	0.300	0	1
Household income level	10672	5.252	2.579	1	10
HH income missing	10672	0.165	0.371	0	1
Low social class	10672	0.433	0.495	0	1
Class missing	10672	0.070	0.255	0	1
Highly religious	10305	0.133	0.339	0	1

Note: CEE countries are Bulgaria, Czech Republic, East-Germany, Hungary, Latvia, Poland, Russia, Slovakia and Slovenia.

Table A 2.5: correlation matrix

	Women	Age	HH size	Secondary	Tertiary	retired	Part-empl.	Not labour	Unemployed	Child HH	HH income	Low class	religious
Women	1												
Age	0.013	1											
HH size	-0.016	-0.318	1										
secondary	-0.018	-0.196	0.072	1									
Tertiary	-0.025	-0.109	-0.020	-0.564	1								
Retired	-0.023	0.642	-0.277	-0.142	-0.096	1							
Part-empl.	0.126	-0.093	0.049	0.012	0.049	-0.162	1						
Not labour	0.024	-0.202	0.024	0.005	0.023	-0.158	-0.115	1					
Unemploy	-0.015	-0.118	0.048	0.037	-0.048	-0.116	-0.084	-0.082	1				
Child HH	0.043	-0.305	0.518	0.076	-0.013	-0.275	0.065	-0.030	0.014	1			
HH income	-0.085	-0.176	0.235	0.025	0.214	-0.207	0.019	-0.066	-0.089	0.132	1		
Low class	-0.021	0.057	0.044	0.038	-0.229	0.056	-0.038	-0.039	0.080	0.026	-0.207	1	
religious	0.072	0.126	0.016	-0.072	-0.019	0.081	-0.021	0.010	-0.019	-0.002	-0.086	0.047	1

Table A 2.6: Logistic regression results by region, dependent variable is set to 1 if respondent agreed or strongly agreed with patriarchal attitudes, 0 otherwise

	OECD countries	CEE countries
Female	-0.497	-0.452
	(0.041)***	(0.045)***
Age	0.032	0.015
	(0.002)***	(0.002)***
Divorced/separated	-0.158	0.134
	(0.089)*	(0.100)
Widow	0.112	0.133
	(0.088)	(0.111)
Married	0.066	0.076
	(0.059)	(0.074)
Household size	0.107	0.096
	(0.017)***	(0.020)***
HH size missing	0.426	0.341
	(0.091)***	(0.398)
Secondary education	-0.668	-0.266
	(0.042)***	(0.060)***
Tertiary education	-1.297	-0.726
	(0.062)***	(0.079)***
Retired	0.141	0.023
	(0.062)**	(0.077)
Part-time employed	-0.167	0.015
	(0.068)**	(0.097)
Not in labour force	0.313	0.273
	(0.052)***	(0.066)***
Unemployed	-0.039	0.003
	(0.100)	(0.077)
Cohabitation	-0.508	-0.023
	(0.098)***	(0.095)
Child in household	-0.018	0.233
	(0.059)	(0.062)***
Single parent family	-0.199	-0.022
	(0.144)	(0.158)
Child data missing	-0.532	-1.030
	(0.063)***	(0.082)***
HH income level	-0.080	-0.064
	(0.009)***	(0.010)***
HH income missing	0.206	-0.263
	(0.044)***	(0.060)***
Low social class	-0.067	0.595
	(0.045)	(0.048)***
Class data missing	-0.541	-0.066
	(0.049)***	(0.088)
Highly religious	0.788	0.596
	(0.048)***	(0.068)***
Constant	-1.761	-0.329
	(0.108)***	(0.134)**
Observations	20145	10087
Pseudo R-squared	0.15	0.09
log-lklhd	-9729.87	-6310.19

Note: this table gives the parameter estimates on that decomposition results presented in Table 2.10 are based on. OECD countries are Austria, Australia, Denmark, Italy, Ireland, Japan, New Zealand, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, USA and West-Germany. CEE countries are Bulgaria, Czech Republic, East-Germany, Hungary, Latvia, Poland, Russia, Slovakia and Slovenia. Source: ISSP 1998, author's calculations. Note: standard errors in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A 2.7: Slopes of agreement by age group in respective countries (Model 1, Section 2.6)

	β_1 (slope)	s.e.	β_0 Const	s.e.
Slovenia	4.48	0.42	4.42	2.78
Hungary	3.88	0.45	23.46	3.43
Poland	3.79	0.43	38.75	2.98
Slovakia	2.98	0.44	41.55	2.41
Czech Republic	2.44	0.42	28.18	2.84
Germany East	2.22	0.44	19.04	3.21
Latvia	2.04	0.45	47.84	2.75
Bulgaria	0.84	0.43	60.91	3.04
Russia	0.84	0.36	65.89	2.23
OECD	3.97	0.09	3.46	0.59

Note: this table gives regression results of Model (1), Section 2.6. Results are ordered by the increase of traditional values with older age groups (slope) and can be interpreted as follows: in OECD countries agreement with patriarchal attitudes increases for about 4 percent with each older age group/birth cohort (that comprises 5 years).

Figure A 2.1: Agreement with traditional gender roles by age group and country

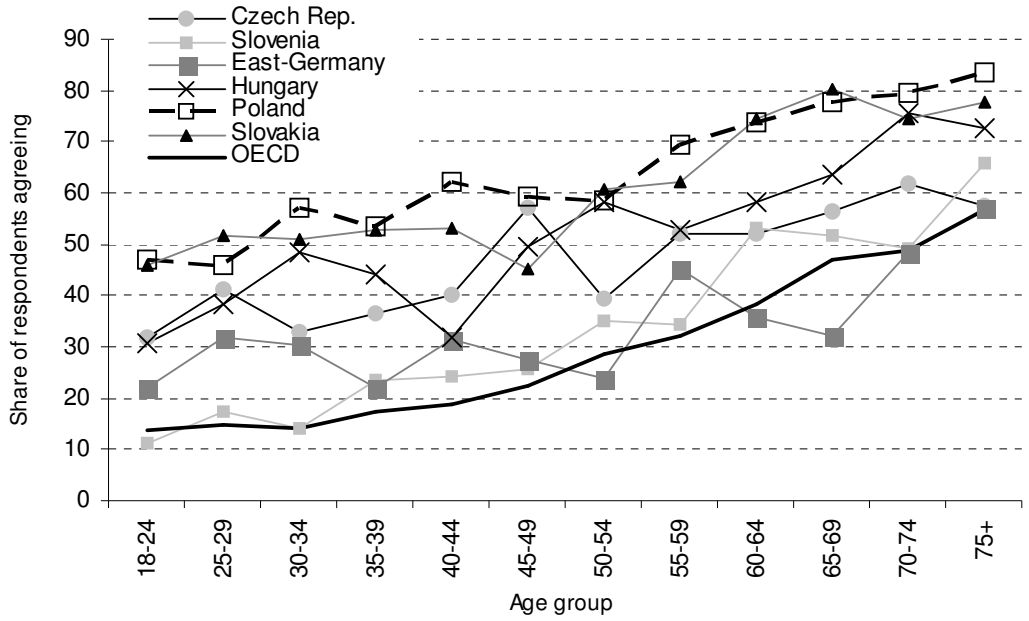
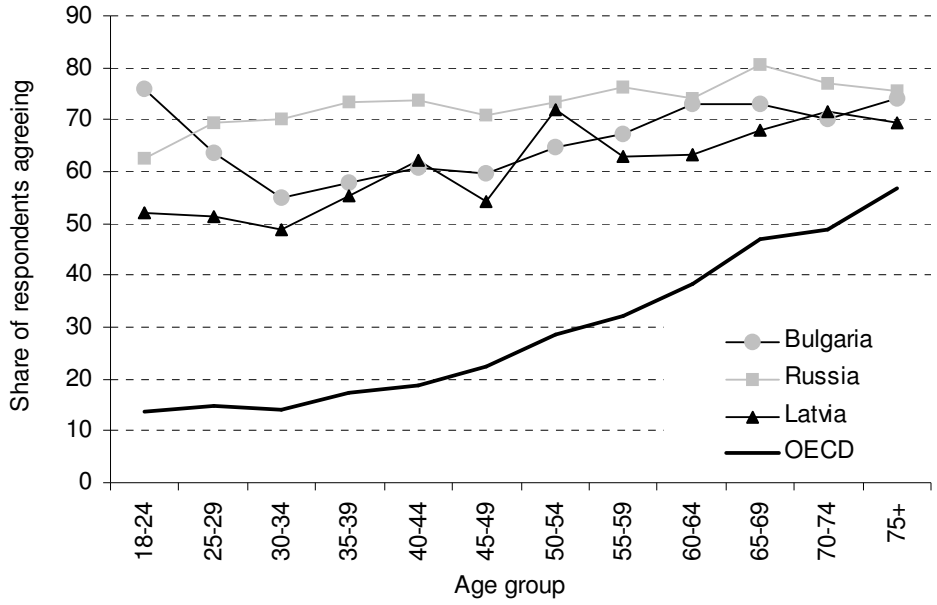


Figure A 2.2: Agreement with traditional gender roles by age group and country



Source: ISSP 1998
Note: OECD refers to unweighted average.

Table A 2.8: Agreement with gender stereotypes over time, remainder of regression results given in Table 2.11

	(1)	(2)	(3)	(4)
Female	0.468	0.458	0.467	0.458
	(0.020)***	(0.020)***	(0.020)***	(0.020)***
Age	-0.023	-0.025	-0.023	-0.025
	(0.001)***	(0.001)***	(0.001)***	(0.001)***
Divorced/separated	-0.140	-0.070	-0.139	-0.074
	(0.044)***	(0.044)	(0.044)***	(0.044)*
Widow	-0.357	-0.260	-0.355	-0.262
	(0.048)***	(0.048)***	(0.048)***	(0.048)***
Married	-0.229	-0.183	-0.228	-0.186
	(0.032)***	(0.032)***	(0.032)***	(0.032)***
HH size	-0.098	-0.090	-0.098	-0.090
	(0.008)***	(0.008)***	(0.008)***	(0.008)***
HH size missing	-0.083	-0.174	-0.082	-0.175
	(0.042)**	(0.042)***	(0.042)**	(0.042)***
Secondary edu.	0.399	0.406	0.399	0.407
	(0.023)***	(0.023)***	(0.023)***	(0.024)***
Tertiary edu.	0.974	1.012	0.973	1.011
	(0.030)***	(0.030)***	(0.030)***	(0.030)***
Retired	-0.184	-0.216	-0.185	-0.218
	(0.032)***	(0.032)***	(0.032)***	(0.032)***
Part-time employed	0.005	-0.010	0.006	-0.010
	(0.034)	(0.034)	(0.034)	(0.034)
Not in labour force	-0.390	-0.347	-0.387	-0.347
	(0.028)***	(0.028)***	(0.028)***	(0.028)***
Unemployed	-0.031	-0.159	-0.028	-0.160
	(0.042)	(0.042)***	(0.042)	(0.042)***
Cohabitation	0.337	0.294	0.335	0.301
	(0.032)***	(0.032)***	(0.032)***	(0.033)***
Child in HH	-0.012	-0.021	-0.012	-0.019
	(0.031)	(0.031)	(0.031)	(0.031)
Single parent	0.239	0.184	0.239	0.185
	(0.078)***	(0.078)**	(0.078)***	(0.078)**
Child missing	0.388	0.393	0.386	0.393
	(0.028)***	(0.028)***	(0.028)***	(0.028)***
HH income level	0.073	0.065	0.073	0.065
	(0.004)***	(0.004)***	(0.004)***	(0.004)***
HH income miss	-0.017	-0.002	-0.019	-0.001
	(0.024)	(0.024)	(0.024)	(0.024)
Low social class	-0.063	-0.074	-0.063	-0.075
	(0.022)***	(0.022)***	(0.022)***	(0.022)***
Class missing	0.207	0.137	0.203	0.143
	(0.026)***	(0.026)***	(0.026)***	(0.026)***
Highly religious	-0.141	-0.110	-0.143	-0.109
	(0.024)***	(0.024)***	(0.024)***	(0.024)***

Source: ISSP 1998 and 1994. Note: standard errors in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%

3 Gender Equality in Educational Achievement

3.1 Introduction

Gender equality in education is one of the preconditions for women's and men's equal opportunities in the labour market. The former communist commitment to education was accompanied by women's relatively equal access to education based on the expectation that women would come to constitute half of the labour force. Additionally, central planning of education characterized by the standardisation of teacher training, school curricula and text books ensured equity in access, especially for rural children and girls. (Laporte and Schweitzer 1994)

However, the onset of transition led to important changes of educational systems in CEE. As discussed in the Introduction, compulsory enrolment rates fell steeply at the beginning of transition for some regions, but increased again to pre-tansitional figures for all sub-regions with the exception of Former Yugoslavia and Central Asia in the second half of the decade. In addition, the shrinking spending on education and rising income inequality paired with increasing poverty described in Chapter 1 might have had a negative influence on equity in educational outcomes. Women could have been more vulnerable in the transition process from plan to market compared to men which consequently might have resulted in a deterioration of gender equality in education during the system change.

Even though there is some reasoning for women's poorer status quo in education relative to men today, data on educational attainment (data on access to education in terms of enrolment rates or figures capturing the progression up national educational systems) suggest gender parity in transition countries.

However, quantitative balances revealed by attainment data do not necessarily imply that gender equality is also achieved in terms of educational achievement that refers to educational outcomes like ability or 'functional literacy' (the ability to function in modern society).

The first aim of this Chapter is to add to existing literature on gender inequality in education by comparing educational achievement data over a large set of transition countries. Hence, the guiding research question is whether gender parity observed with educational attainment data translates also into equality in terms of educational achievement.

There are two important advantages of focusing on educational achievement instead of educational attainment. First, gender differences in attainment are difficult

to compare across countries due to institutional difference in how education is organised. Second, not only gender equality in educational attainment but also in learning achievement has implications for gender equal job opportunities and earnings.

For examining educational achievement we can make use of recent international surveys of learning achievement of children and functional literacy. The survey 'Trends in International Maths and Science Achievement' (TIMSS) examines 7th and 8th graders educational achievement in maths and science and was conducted in 1995 and 1999. The 'Program of International Student Assessment' (PISA) pertaining to 2000 and 2002 focuses on 15 year-olds' reading, maths and science literacy. PIRLS, the Progress in International Reading Literacy Study, is a survey on primary school children's reading abilities. All three surveys focus on what pupils actually know or can do. Which achievement survey to use? Each survey aims to assess something different (e.g. maths or reading) or to assess knowledge in a different way (e.g. in relation to an 'international' curriculum versus the ability to apply knowledge in everyday settings) and uses different methods for assessment (more open-ended or multiple-choice questions). In addition, they each refer to particular age groups or school grades. And they each have been the subject of criticism on one ground or another. These variations between surveys are very likely to impact upon results on educational achievement and gender differences in achievement. Hence, a rounded picture of educational achievement of boys and girls requires the surveys' results to be compared. But generally, each survey is typically analysed in isolation with no consideration as to whether its results support or contradict those from another.[81]

An additional value added of this Chapter is to compare results of different surveys on educational achievement. Hence, the second aim in this Chapter is to pull together the evidence from all three different surveys to see if a robust picture of gender equality in achievement and literacy exists in transition countries. In addition, a comparison of CEE with a benchmark group of pre-1990 OECD countries will reveal whether transition countries are special regarding their pattern of gender equality.

[81] This Chapter benefits greatly from the author's participation in other research projects guided and commented on by John Micklewright that compared different surveys on varying aspects like UNICEF (2002a), Micklewright and Schnepf (2004), Micklewright and Schnepf (2005), Schnepf (2005) and Micklewright *et al.* (2005).

The remainder of this Chapter is as follows. Section 3.2 describes gender equality in education for transition and OECD countries today using educational enrolment data. Section 3.3 introduces briefly the three surveys this analysis draws on: TIMSS, PISA and PIRLS. All surveys focus on children in compulsory schooling. Section 3.4 introduces the analysis by discussing briefly countries' ranking regarding educational achievement and dispersion across the different surveys. After that, Section 3.5 relates gender differences of average achievement scores to country's general achievement and compares gender inequalities between countries, subjects and surveys. Since achievement scores of all surveys lack a simple concept of interpretation, Section 3.6 aims at discussing three alternatives for making gender differences in mean achievement scores meaningful. Whether this gender inequality in educational achievement derives from greater gender differences at the top or the bottom of the achievement distribution is the focal point of Section 3.7. Section 3.8 investigates whether socio-economic background is of any concern when we talk about gender differences in achievement. Section 3.9 concludes.

3.2 Gender differences in educational attainment in CEE countries

Gender parity in enrolment seems to be quite similarly achieved in transition and OECD countries today. Table 3.1 displays net enrolment ratios (NER)[82] for primary and secondary and gross enrolment ratios (GER)[83] for tertiary education for the transition countries covered in the later analysis. In addition, the table shows mean enrolment ratios of Eastern Europe, a larger set of transition countries (including the Caucasus and Central Asia), a group of OECD and developing countries in 2000.

The female-to-male ratio of enrolment is around unity in primary and secondary education for both CEE and for OECD countries as a whole. Only for developing countries, discrimination in access to schooling is sharply concentrated on girls (UNESCO, 2003b) for primary education and strangely on boys in secondary education.

[82] NER is the number of pupils in the theoretical age group for a given grade/level of education enrolled in that level expressed as percentage of the total population in that age group. The Net Enrolment ratio has some drawbacks. Where the official entrance age is different from the usual entrance age, an underestimation of actual school participation results. Often this indicator is combined with the gross enrolment ratio.

[83] GER is the number of pupils enrolled in a given level of education, regardless of age, expressed as a percentage of the population in the theoretical age group for the same level of education.

Table 3.1: Female-to-male ratio of enrolment for primary, secondary and tertiary education in 2000

	Primary Education ISCED 1			(Post-)Secondary Education ISCED 2 + 3 + 4			Tertiary Education ISCED 5a, 5b, 6		
	Net Enrolment Ratio (NER)						Gross Enrolment Ratio (GER)		
	Male	Female	**Ratio female male**	Male	Female	**Ratio female male**	Male	Female	**Ratio female male**
Albania	98	97	**0.99**	73	75	**1.03**	11	19	**1.69**
Bulgaria	95	93	**0.98**	89	87	**0.98**	35	47	**1.35**
Czech	90	90	**1.00**	88	89	**1.01**	29	31	**1.05**
Hungary	91	90	**0.99**	87	88	**1.01**	35	45	**1.27**
Latvia	92	92	**1.00**	87	87	**1.01**	48	79	**1.65**
Lithuania	95	94	**0.99**	88	89	**1.01**	42	63	**1.51**
Macedonia	92	92	**1.00**	82	80	**0.98**	21	28	**1.32**
Moldova	79	78	**0.99**	67	69	**1.03**	25	31	**1.29**
Poland	98	98	**1.00**	90	92	**1.03**	46	66	**1.44**
Romania	93	93	**1.00**	79	81	**1.02**	25	30	**1.20**
Russia	-	-	**-**	-	-	**-**	56	72	**1.29**
Slovakia	89	90	**1.01**	75	75	**1.01**	29	32	**1.09**
Slovenia	94	93	**0.99**	95	97	**1.02**	52	70	**1.35**
Eastern Europe	*92*	*92*	***0.99***	*83*	*84*	***1.01***	*33*	*45*	***1.35***
OECD countries	*97*	*98*	***1.00***	*87*	*90*	***1.03***	*48*	*62*	***1.30***
Transition countries	*89*	*91*	***1.02***	*78.7*	*80.6*	***1.02***	*27.2*	*38.2*	***1.41***
Developing countries	*85*	*79*	***0.93***	*48.3*	*57.1*	***1.18***	*12.0*	*8.7*	***0.73***

Source: UNESCO 2003a, UNESCO 2003b, author's calculations. Note: OECD countries refer to Austria, Australia, Denmark, Finland, France, Germany, Greece, Iceland, Italy, Luxembourg, Netherlands, New Zealand, Mexico, Norway, Spain, Sweden, UK and USA. Eastern Europe averages without Russia. Regional values refer to the mean value of the country group. Average of transition and developing countries refer to published average given in the sources.

During transition, enrolment rates in tertiary education increased steadily in all CEE sub-regions with the exception of Central Asia and the Caucasus. In general, female tertiary enrolment increased faster than male enrolment, which is often captured by the term 'feminisation of higher education' (see Figure 1.12 in the Introduction). The GER for tertiary education in Table 3.1 shows the high variation of women's advantage in tertiary education in CEE countries today. In Albania, Latvia and Lithuania women's share in tertiary education is even one and a half times bigger than that of men. The average female advantage appears to be similarly high in OECD and Eastern European countries as well as in transition countries as a whole (including Central Asia and the Caucasus). In contrast, in the region of developing countries women are facing a large disadvantage in access to tertiary education.

Taken together, in terms of gender parity in access to primary, secondary and tertiary education OECD and transition countries are rather similar. Do we find the same result once educational achievement is used to measure gender equality?

There are two important advantages of focusing on educational achievement instead of educational attainment. First, attainment is difficult to compare across countries due to institutional difference in how education is organised. Hence, reaching a given level of education may correspond to very different levels of learning in an absolute sense from country to country. Second, the focus on quantitative balances in educational access does not reveal whether gender equality is achieved in regard of educational outcomes. Equality of learning achievement is important since it is related to gender equal job opportunities and earnings.

Hence, the aim of the following Sub-sections is to examine whether gender equality in educational attainment for OECD and CEE countries translates also into gender equality in terms of educational achievement.

3.3 Data

Table 3.2 lists the different data sources[84] used for the following analyses. All surveys relate to children in compulsory schooling and are very recent pertaining to 1995, 1999, 2000 and 2001. Their sample designs involve the selection of a sample of schools and then a single class (TIMSS and PIRLS) or a random sample (PISA) of pupils within each school. TIMSS organisers collected data on 7th and 8th graders in the 1995 and 1999 rounds[85] (data for all transition countries refer to 1999).[86] The PISA data relate to an age group rather than a grade, which is an important difference. Some countries promote all children at the end of the year to the next grade irrespective of their achievement, while others insist on a certain competence being reached before passage upwards is allowed. (Several grades can be represented in an age group and several ages can be found in a grade, with the mixes varying from country to country.) The most recent of the three, PIRLS, focused on younger children

[84] Details on the surveys can be found in their reports: Mullis *et al.* (2000), Mullis *et al.* (2003), OECD (2001) and OECD and UNESCO (2003).

[85] TIMSS 1995 covered 3rd and 4th grades, 7th and 8th grades and the last grade of secondary schooling. TIMSS 1999 assessed children in the 8th grade only. I focus on the most recent 8th grade data for each country.

[86] About one third of the questions to 8th-graders in 1999 were exactly the same as those put to 7th and 8th-graders in 1995. The others were intended to give results that were comparable. The TIMSS organisers used different models in 1995 and 1999 but the 1995 data were re-modelled by the survey organisers in order to put them on the same basis as the later data. I use the re-modelled 1995 data when I pool countries from the two years.

– 9-10 year-olds.[87] All three surveys collected information on the schools[88] and on parental background[89] as well as on the children's learning achievement.

The surveys differ widely in the type of achievement that they try to assess. PISA organised by the OECD assessed ability in reading, science and maths, attempting to determine to what extent 'education systems in participating countries are preparing their students to become lifelong learners and to play constructive roles as citizens in society' (OECD, 2001). The aim was to measure broad skills, trying to look at how students would be able to use what they have learned in 'real-life situations'.

While covering a similar age group to PISA and two of the same subjects (maths and science), TIMSS focuses on measuring mastery of internationally agreed curricula. This may seem a narrow approach. But at least the concept of a curriculum agreed by educationalists seems one that a lay person can understand, even though the content of that curriculum is subject to debate. The 'life-skills' approach of PISA, on the other hand, seems more slippery and more difficult to apply especially across countries with wildly differing culturally backgrounds.

These differing approaches for measuring achievement shape also the content of each subject covered by surveys. TIMSS science assessment places great emphasis on physics where boys perform generally better than girls. PISA focuses on life-sciences where girls seem to fair better. Hence, the choice of the survey might shape results on gender equality. This is probable also regarding the way in which information is collected. TIMSS used more multiple-choice questions than PISA and PIRLS (about two-thirds of the TIMSS questions were multiple choice in 1999). There might be a tendency that children in some countries do better with multiple choice questions than children in others[90] (Goldstein, 2003) which is probably due to countries' variation in their traditions of multiple-choice testing in schools. Second, survey results suggest, that girls fare generally better with open-ended questions while tests with more multiple-choice items favour boys. (OECD, 2002b)

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[87] PIRLS assessed children in the upper of the two grades with the most 9-year–olds at the time of testing. This corresponds to the fourth grade and an average age of about 10 years for most of the countries.

[88] School information is collected via questions to the school headmaster for all three surveys and additionally via questions to the teacher for PIRLS and TIMSS.

[89] Family background information is collected via questions to the children in PISA and TIMSS and additional via questions to a children's guardian in PIRLS.

[90] '…the French students are, on average, 0.7 standard deviations ahead of the English for item 136Q01 (a free response Geometry item) but 0.7 standard deviations behind on item 161Q01 (a multiple choice Geometry item). This suggests that the item format may be an important feature of country differences

The answers that a respondent gives to the questions in the surveys are summarised by the organisers into a single score for the subject concerned – maths, science and reading. This is usually scaled to have a mean among all persons in all participating countries of 500 and a standard deviation of 100.[91] The aggregation of answers into a single score involves complex statistical modelling.[92] The basic principle in the process used in each survey is similar but the precise 'item response model' used differs from survey to survey. Survey organisers do not report the sensitivity of results to the choice of model but Brown and Micklewright (2004) and Micklewright *et al.* (2005) show with TIMSS data that this is not a trivial issue. Differences in modelling between the surveys and the lack of reports on its impact on results are more reasons for wanting to compare surveys' outcomes.

Hence age groups studied, subjects assessed, overall approach to assessment, form of questionnaire, and the method for aggregating the answers all vary from survey to survey. Other differences can be cited, including response rates. Even the basic premise that culturally-neutral questions can be successfully designed and translated into different languages can be debated, with the problems in this area probably varying from survey to survey.[93] In short, there seems ample reason for comparing results across the different surveys rather than relying on a single source.

Table 3.2 presents also the transition countries that participated in each survey. TIMSS and PIRLS have the same coverage of transition countries while PISA includes also Albania and Poland but lacks data on Lithuania, Moldova, the Slovak Republic and Slovenia. The surveys cover 13 of 27 countries of former Soviet bloc. In particular, the countries in the Caucasus and Central Asia are excluded. Unfortunately, these regions differ wildly in cultural, geographic and economic terms

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related to curriculum and teaching; a feature which should not therefore be ignored.' (Goldstein, 2003, p. 10)

[91] However, the scores are not directly comparable across surveys in terms of their magnitude, because the 'international' mean of 500 refers in all surveys to a different group of countries. For PIRLS the 'international mean' refers to all countries that participated in PIRLS (e.g. also including quite low performing countries like Iran and Kuwait), for TIMSS the 'international mean' of 500 refers to countries of the 1995 round (scaling scores were later applied equally to 1999 data amounting to a slightly different mean score for 1999) and for PISA the international mean of 500 covers only the better performing OECD countries.

[92] The models come from the discipline of psychometrics. One stage of the process is familiar to those using longitudinal surveys: the use of logit models for panel data (one can think of the series of answers by a respondent to the different questions as the panel element).

[93] Overall country response rates in TIMSS and PISA averaged 88 percent and 85 percent (after replacement of non-responding schools with substitutes) respectively. Response in PIRLS averaged 92 percent. Variation across countries can be marked. Blum *et al.* (2001) consider France's experience in IALS (a survey on adults literacy) and among other things make critical comparison of the French language questionnaire used in France and that used in Switzerland. (France originally participated and then later withdrew.)

from the countries covered. With the onset of transition in the Caucasus and Central Asia educational expenditure plummeted, the purchasing power of teachers' wages decreased, simultaneously the population of basic-school-age children increased (UNICEF, 2002b) and traditional values re-emerged (Tablyshalieva, 1999). These differences are very likely to impact on gender equality in educational achievement. Hence, the following analysis is limited to the estimation of gender equality in educational outcomes in Central and South-East Europe, the Baltic States and Russia.

Table 3.2: Coverage and sample size of CEE countries by educational surveys

	TIMSS	PISA	PIRLS
Description of survey			
Date of collection	1995, 1999	2000, 2002	2001
Age group	8th graders (14 year-olds)	15 year-olds	4th graders (9 to 10 year-olds)
Subjects covered	Maths and science	Reading, maths and science	Reading
Countries covered by survey and sample size			
Albania		4,980	
Bulgaria	3,273	4,657	3,460
Czech Republic	3,453	5,365	3,022
Hungary	3,183	4,887	4,666
Latvia	2,873	3,893	3,019
Lithuania	2,361		2,567
Macedonia, Republic of	4,023	4,510	3,711
Moldova	3,711		3,533
Poland		3,654	
Romania	3,425	4,829	3,625
Russian Federation	4,332	6,701	4,093
Slovak Republic	3,497		3,807
Slovenia	3,109		2,952

Note: PISA data refer to the year 2000 with the exception of Albania, Bulgaria, Macedonia and Romania, where data were collected in 2002 in the PISA Plus round.

The surveys' data on school children cannot shed light on gender equality of children not enrolled in school or attending special schools. This should not be of great concern given results of Section 3.2 that showed the gender neutrality of educational enrolment rates and therefore indicated that there is an equal share of girls and boys not enrolled in school. Nevertheless, educational attainment might be partly gender sensitive once the focus is on minorities. For example, Roma girls in Romania tend to drop out of school earlier than boys as well as disabled children and a high share of ethnical minorities attend special schools (UNESCO, 2003b). Since educational achievement surveys collect data from the pupil population in schools (often excluding special schools), educational achievement data could not reveal gender inequalities in minorities' school attendance in case such an inequality existed in the country examined.

3.4 Central tendency and dispersion in CEE and other countries[94]

Before focusing on gender inequalities in educational achievement it is sensible to examine average achievement and educational dispersion in CEE and OECD countries. Gender inequality in a country with generally low educational achievement might be judged as worse than the same level of gender inequality in a country with high average educational achievement. In addition, even if a country achieves high gender equality with on average low educational achievement and great educational dispersion, girls in these countries might fare worse than girls in a country with low gender equality but high average achievement and low educational dispersion. This combined effect of countries' average achievement, educational dispersion and gender inequality on pupils' educational disadvantage will be discussed in Section 3.6.3 on 'absolute levels' of educational achievement.

Table 3.3: Z-scores of median achievement for PISA, TIMSS and PIRLS

	PISA			TIMSS		PIRLS	Average
	Read	**Maths**	**Science**	**Maths**	**Science**	**Reading**	
Netherlands	1.13	1.66	1.14	1.25	1.44	0.85	1.17
Hong Kong	1.01	1.62	1.42	2.67	0.75	-0.09	0.99
Canada	1.13	0.91	1.06	0.84	0.79	0.48	0.78
Sweden	0.73	0.46	0.68	0.30	0.48	1.22	0.74
UK	0.83	0.83	1.14	-0.41	0.87	0.89	0.68
Hungary	**-0.14**	**-0.09**	**0.20**	**0.95**	**1.63**	**0.52**	**0.60**
Czech Republic	**0.15**	**0.14**	**0.55**	**0.30**	**0.98**	**0.28**	**0.40**
USA	0.45	0.10	0.30	-0.14	0.25	0.65	0.33
New Zealand	1.08	1.06	1.11	-0.51	0.06	0.08	0.31
Germany	0.05	0.10	0.02	-0.03	0.52	0.36	0.22
France	0.45	0.62	0.33	0.81	-0.90	-0.29	0.04
Bulgaria	**-1.33**	**-1.21**	**-1.05**	**0.14**	**0.29**	**0.97**	**0.00**
Russia	**-0.65**	**-0.27**	**-0.79**	**0.61**	**0.60**	**-0.09**	**-0.02**
Latvia	**-0.70**	**-0.57**	**-0.74**	**-0.10**	**-0.36**	**0.52**	**-0.13**
Italy	0.00	-0.63	-0.26	-0.88	-0.67	0.44	-0.21
Norway	0.54	0.23	0.38	-0.24	0.14	-1.14	-0.27
Iceland	0.50	0.52	0.25	-0.61	-1.02	-0.74	-0.38
Greece	-0.30	-0.82	-0.69	-0.81	-1.06	-0.29	-0.61
Israel	-0.75	-1.07	-1.43	-1.18	-1.44	-0.61	-1.00
Romania	**-1.43**	**-1.36**	**-1.32**	**-1.05**	**-1.44**	**-0.61**	**-1.08**
Macedonia	**-2.77**	**-2.25**	**-2.29**	**-1.92**	**-1.90**	**-3.42**	**-2.59**

Source: Beaton *et al.*, 1996; Mullis *et al.*, 2000; OECD and UNESCO, 2003, Mullis *et al.*, 2003; author's calculations.

[94] This Section 3.4 summarises joint work with John Micklewright on educational achievement and dispersion in CEE conducted for UNESCO Institute for Statistic Monteal (Micklewright and Schnepf, 2005).

Table 3.4: Z-scores of educational dispersion (P95-P5) for PISA, TIMSS and PIRLS

	PISA			TIMSS		PIRLS	Average
	Reading	Maths	Science	Maths	Science	Reading	
Hong Kong-China	-1.81	-0.42	-1.34	-1.05	-1.65	-1.02	-1.19
Netherlands	-1.19	-1.13	-0.02	-0.84	-0.92	-1.51	-1.06
Sweden	-0.69	-0.42	-0.54	-1.34	-0.92	-0.75	-0.81
France	-0.82	-0.89	0.63	-1.81	-1.41	-0.38	-0.78
Canada	-0.45	-1.27	-0.97	-0.94	-0.80	-0.23	-0.67
Iceland	-0.78	-1.30	-1.19	-1.02	-0.52	0.01	-0.62
Czech Republic	**-0.12**	**-0.12**	**-0.32**	**-0.22**	**-0.58**	**-0.87**	**-0.49**
Latvia	**0.54**	**0.34**	**0.16**	**-0.44**	**-0.77**	**-1.19**	**-0.48**
Hungary	**-0.61**	**-0.07**	**0.56**	**0.53**	**-0.18**	**-0.82**	**-0.23**
Italy	-0.98	-0.70	0.09	0.64	0.19	-0.36	-0.16
Norway	0.79	-0.59	-0.21	-0.76	-1.16	0.50	-0.15
Russia	**-0.73**	**0.50**	**0.34**	**0.53**	**0.86**	**-0.82**	**-0.03**
Greece	-0.03	0.89	-0.02	0.68	-0.18	-0.21	0.10
Germany	1.86	0.37	0.67	-0.48	0.58	-0.67	0.12
United Kingdom	0.38	-0.61	0.16	-0.22	0.58	0.99	0.38
Bulgaria	**0.63**	**0.97**	**-0.10**	**0.57**	**0.77**	**0.55**	**0.57**
United States	1.16	0.01	0.41	0.75	1.17	0.62	0.70
Macedonia	**-0.65**	**-0.01**	**-1.67**	**1.43**	**1.17**	**2.07**	**0.86**
New Zealand	1.45	0.01	0.34	0.89	0.71	1.46	0.95
Romania	**0.46**	**1.54**	**-0.28**	**1.36**	**1.11**	**1.16**	**0.99**
Israel	1.57	2.91	3.30	1.76	1.96	1.46	1.97

Source: Beaton *et al.*, 1996; Mullis *et al.*, 2000; OECD and UNESCO, 2003, Mullis *et al.*, 2003; author's calculations.

Tables 3.3 and 3.4 present one way of comparing CEE and OECD countries regarding their educational achievement and dispersion across different surveys. 21 countries participated in all three surveys PISA, TIMSS and PIRLS. In order to make the data from different distributions comparable achievement scores are standardised by calculating z-scores (e.g. for the median: the countries' median achievement minus the average median achievement of 21 countries is divided by the standard deviation of the 21 median achievements for each test). Countries' achievement is expressed as a z-score of the median and within country variation by the z-score of the difference between the 95th and 5th percentiles, P95-P5 for each survey and subject (that is, for all six tests). Countries are ranked on the basis of their average z-scores across the six tests whereby each survey weights equally.

In addition, countries are grouped into three divisions of six countries for each set of results: light grey denotes the best performing countries (high average or low dispersion), dark grey the worst performers (low average or high dispersion), and medium grey for the group in the middle.

Regarding median achievement (Table 3.3) only the Netherlands rank in the top third of performers in all three subjects and surveys (that is, for all six tests there is a light grey colour shown). With the exception of the survey PIRLS, its median

achievement is always more than one standard deviation above the average median achievement of the 21 countries covered by all surveys (average z-score is 1.17). At the other end of the spectrum, Greece, Israel, Romania and Macedonia fare consistently badly in all subjects: they are in the bottom third for all six tests. On average across surveys, median achievement in Romania is one standard deviation lower than the average median achievement. In Macedonia, this figure is as high as 2.6 standard deviations.

Hungary and the Czech Republic are the best performing transition countries with an average z-score around +0.50. Bulgaria, Russia and Latvia achieve median results that are similar or slightly below the mean median achievement of all 21 countries (average z-scores around 0).

Results of surveys differ for some countries greatly. Bulgaria is one of the best performing countries regarding PIRLS reading achievement (z-score of +0.97). On the other hand, for achievement in PISA it is one of the worst performing countries (average PISA z-score below - 1.0) and in TIMSS it holds a middle position. Also Russia's rank on median achievement differs greatly between surveys.

The focus on educational dispersion shows (Table 3.4) that Hong Kong, the Netherlands and Sweden are in the top group with low dispersion for 5 of the 6 tests. Greatest educational dispersion appears in Israel, New Zealand and the US consistently across surveys. However, nine of the 21 countries are at least once in each of the three groups, indicating that agreement on educational dispersion between surveys is relatively low.

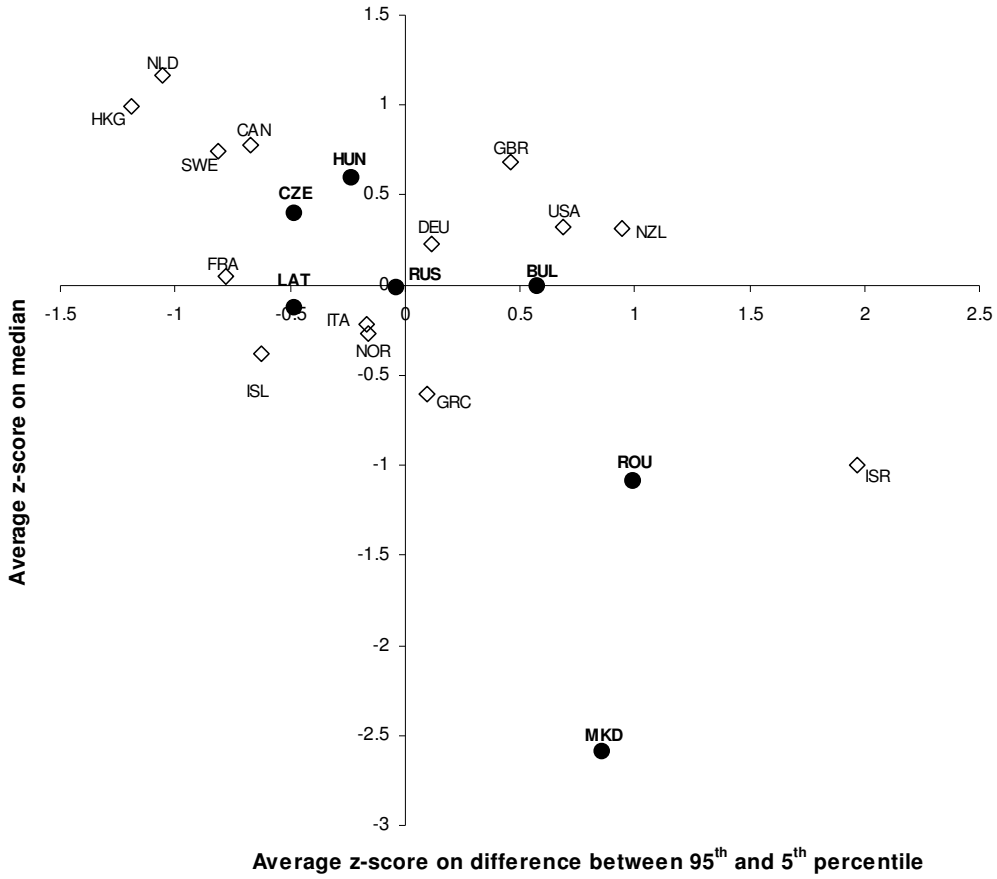
On average educational dispersion in Russia is similar to the mean of the 21 countries. In the Czech Republic, Latvia and Hungary within-country differences in educational achievement seem to be around 0.25 to 0.50 lower and in Romania, Macedonia and Bulgaria around 0.5 to 1 standard deviation greater than the mean dispersion across all countries.

Figure 3.1 summarise the results in Tables 3.3 and 3.4 by presenting the average z-score on educational dispersion on the x-axis and the average z-score on median achievement on the y-axis. The average z-scores have considerable merit as quick summary statistics. If different subjects and surveys produced wildly differing z-scores then the averaging would produce a figure close to zero. The more the average z-scores vary the more the z-scores are in agreement between different

surveys. Having a low or high z-score can only result from z-scores that are consistently good or bad in individual subjects.

Average z-scores in central tendency and dispersion display a considerable amount of variation, reflecting a reasonable degree of concordance between surveys. However, it is also true that there is lot of bunching in the middle of the distribution. Russia has an average z-score of 0 regarding central tendency and dispersion, which is due to an evening out of good performance on one subject and bad performance on another. In addition, Latvia and Bulgaria are clustered around 0 on median achievement and Hungary on educational dispersion.

Figure 3.1: Average z-scores in educational achievement and educational inequalities for 6 different measures (PISA, TIMSS and PIRLS)



Source: Beaton *et al.*, 1996; Mullis *et al.*, 2000; OECD and UNESCO, 2003, Mullis *et al.*, 2003; author's calculations.

However, there is considerable agreement between surveys regarding Romania and Macedonia, the countries with lowest educational achievement and high dispersion. Both countries and Israel are placed far away from the cluster of OECD

countries. Only for the Czech Republic, results show quite consistently a favourable position regarding achievement and educational dispersion.

The graph shows additionally, that higher average levels of achievement are associated with lower educational dispersion.

In summary, in CEE young people have generally lower average achievement compared to (pre-1990) OECD countries even though transition countries differ greatly. While the Czech Republic and Hungary show achievement levels comparable to those of the rest of the OECD, poorer transition countries like Romania and Macedonia are well behind. This picture is generally consistent across different surveys. In general, CEE countries do somewhat better in PIRLS and TIMSS than in PISA. Also regarding education dispersion there is a great variation among CEE countries. Central European and Baltic countries contain disparities more effectively than countries like Macedonia, Romania and Bulgaria.

3.5 Gender inequality in mean achievement in CEE compared to OECD countries

After this general discussion of transition countries' educational achievement and dispersion this Section aims at introducing the gender perspective starting with the most recent survey PIRLS that covers reading achievement of primary school children who where born when the communist area had already ended. Figure 3.2 presents 4th graders' average achievement in reading on the x-axis and gender differences in these mean reading scores on the y-axis for OECD and CEE countries. (For the interpretation of the table it is important to remember that survey organisers set average achievement scores across all countries to 500 with a standard deviation of 100.) The Pearson's correlation coefficient of 0.2 indicates that higher gender differences are only slightly related to lower mean reading scores.

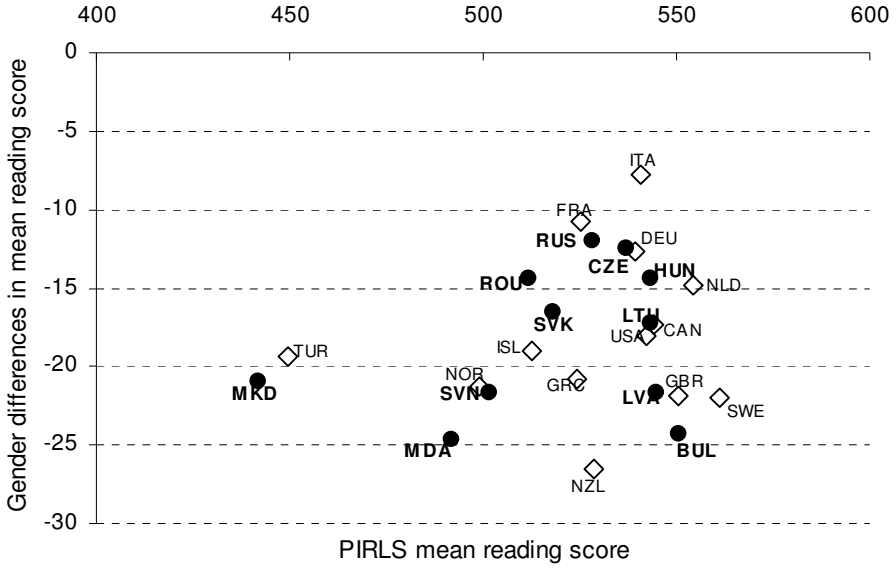
Macedonia, the CEE country with lowest mean achievement, shows similar mean achievement to the OECD country Turkey. Among the high achieving countries CEE and OECD countries are equally represented with e.g. Sweden and Bulgaria (but as discussed before Bulgaria's high achievement in PIRLS is not robust across surveys).

The y-axis gives gender differences in mean achievement. Throughout this Chapter, a negative value of gender differences in average achievement shows a lower performance of boys, a positive value refers to a better achievement of boys.

In PIRLS reading girls perform better than boys and this gender difference is significant for all countries (Mullis *et al*., 2003).

CEE countries do not seem to differ greatly from OECD countries in terms of gender differences. Highest gender differences appear in New Zealand, Moldova and Bulgaria. Boys are much less disadvantaged in Italy, France, Russia, Czech Republic and Germany.

Figure 3.2: PIRLS mean reading achievement and gender differences in mean reading (4th graders)



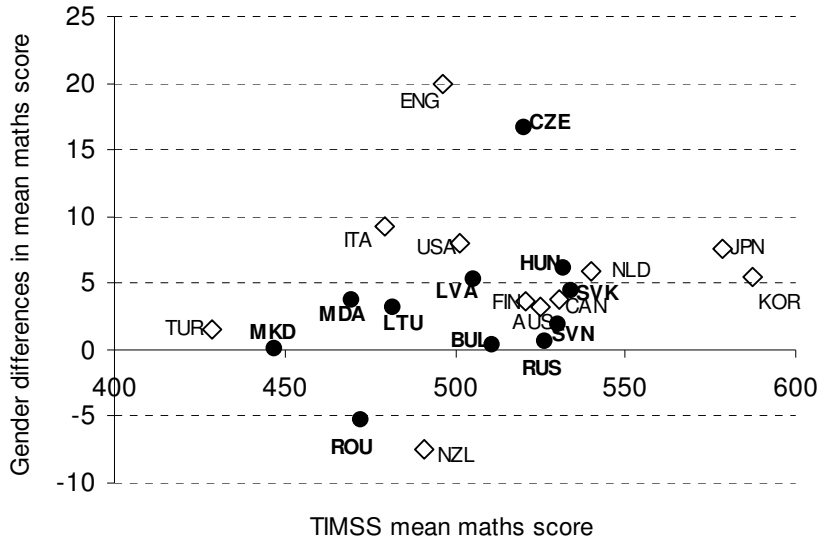
Source: Mullis *et al.*, 2003, author's calculations. Note: gender differences shows differences between boys' – girls' average achievement for each country. Pearson's correlation coefficient for CEE countries is 0.27; the correlation coefficient for all countries is 0.20.

Even though Figure 3.2 provides a first impression on gender differences between primary school pupils in reading for different countries, it does not reveal whether gender differences between countries are significant. E.g. is boys' educational disadvantage significantly greater in Moldova than in countries like Italy and France that show lowest gender differences in reading mean achievement? The part below the diagonal line in Table A 3.1 in the Appendix displays whether PIRLS gender differences in means between two countries are statistically significant. The multiple comparison of countries' gender inequality reveals that countries with similar or higher gender difference in reading achievement than Macedonia are significantly different from countries with lower gender inequalities like the Netherlands. However, all countries where boys' achievement is between 20 and 15 test points lower than that of girls are not significantly different from all other countries in terms of gender equality. Hence, gender differences as such displayed in Figure 3.2 need to

be interpreted carefully in terms of the statistical significance of gender differences between countries.

Until now the focus was solely on the subject reading. Are there different patterns for other subjects? Figure 3.3 places countries again on the achievement and gender differences axes but this time focusing on 8th graders' maths achievement in TIMSS. The widespread distribution of countries shows that there is no relation between gender differences and mean maths achievement.

Figure 3.3: TIMSS mean maths achievement and gender differences in mean maths (8th graders)



Source: Beaton *et al.*, 1996; Mullis *et al.*, 2000; author's calculations. Note: Pearson's correlation coefficient for CEE countries is 0.40, for all countries 0.07. Data on Austria, Denmark, France, Germany, Greece, Norway, Spain, Sweden and Switzerland refer to 1995; data on all other countries refer to 1999.

Regarding TIMSS average maths achievement Japan and Korea represent the group of highly performing countries in terms of children's ability, a pattern generally quite similar for PISA results. In accordance with PIRLS results Turkey and Macedonia are placed at the lower end of the achievement distribution. Moldova, Romania and Lithuania show a similarly low maths average score compared to Greece, Spain and Italy. Slovakia, Slovenia, Russia and Hungary display quite high mean achievements in mathematics comparable to many other OECD countries like Canada, Germany, France and Australia.

With the exception of Romania and New Zealand gender differences in maths average scores are now positive indicating that in general boys fare better than girls in this subject. Nevertheless, gender differences seem to be rather low compared to

PIRLS, since boys' average maths achievement is often not higher than 10 points compared to that of girls. Given that the average score for all participating OECD countries is about 500, these differences are rather marginal and indeed for many countries not significant (Mullis *et al.*, 2000). Notable exceptions are the Czech Republic, Denmark and the UK where boys' average advantage rises to almost 20 points.

Table 3.5 summarises gender differences in mean scores, along with their standard errors, for different surveys and subjects. Gender differences are displayed for post-communist countries that participated in the survey and are averaged for a similar group of OECD countries for different surveys. Light grey fields (negative values) indicate a significant (5 percent level) advantage of girls' achievement over that of boys. Dark grey fields (positive values) show that boys' achievement is significantly better than that of girls. Countries are ordered by gender differences in reading.

Table 3.5: Gender differences in surveys' mean achievement and significance for different surveys by subjects

	PISA	**PIRLS**	**PISA**	**TIMSS**	**PISA**	**TIMSS**
	Reading	Reading	Maths	Maths	Science	Science
Albania	**- 58 (3.8)**		**- 18 (5.7)**		**-22 (5.3)**	
Latvia	**- 53 (4.2)**	**- 22 (3.4)**	6 (5.3)	5 (4.5)	**-23 (5.4)**	**15 (4.0)**
Macedonia	**- 50 (3.2)**	**- 21 (3.6)**	- 3 (4.7)	0 (4.5)	**-16 (4.4)**	1 (4.6)
Bulgaria	**- 47 (5.6)**	**- 24 (3.6)**	-4 (7.1)	0 (5.5)	-5 (6.1)	14 (6.2)
Moldova		**- 25 (4.0)**		3 (4.1)		11 (5.4)
Lithuania		**- 17 (2.7)**		3 (4.0)		**21 (4.6)**
Russia	**- 38 (2.9)**	**- 12 (4.3)**	- 2 (4.3)	1 (3.3)	**-14 (4.5)**	**20 (3.9)**
Czech Republic	**- 37 (4.7)**	**- 12 (2.8)**	**12 (5.2)**	**17 (5.0)**	1 (5.1)	**33 (4.8)**
Poland	**- 36 (7.0)**		5 (3.5)		6 (7.4)	
Hungary	**- 32 (5.7)**	**- 14 (2.1)**	7 (6.2)	6 (3.7)	-2 (6.9)	**25 (4.2)**
Romania	**- 14 (6.0)**	**-14 (3.8)**	-11 (7.3)	-5 (4.7)	**- 14 (6.6)**	7 (5.4)
Slovakia		**- 16 (3.0)**		5 (3.6)		**21 (4.5)**
Slovenia		**- 22 (2.8)**		1 (3.6)		**13 (3.7)**
CEE average	**- 41 (3.4)**	**- 19 (3.5)**	- 1 (3.5)	3 (5.0)	**- 10 (3.1)**	**19 (5.3)**
OECD average	**- 32 (2.0)**	**- 17 (1.6)**	**12 (2.2)**	**7 (2.8)**	2 (2.2)	**21 (3.0)**

Source: Beaton *et al.*, 1996; Mullis *et al.*, 2000; OECD and UNESCO, 2003, Mullis *et al.*, 2003; PISA, TIMSS and PIRLS data, author's calculations. Note: countries are ordered by gender differences in PISA (and if missing value then by PIRLS reading). Standard errors are given in parenthesis. Bold figures show that gender differences are significant at a 5 percent level. OECD countries are for PISA and TIMSS: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Korea, the Netherlands, Norway, Spain, Sweden, Switzerland, USA and UK. For PIRLS OECD countries are France, Germany, Greece, Iceland, Italy, Netherlands, Norway, Sweden, USA and UK. Standard errors for OECD countries are calculated by taking survey design into account (clustering and weights); standard errors for countries are taken from survey reports. OECD gender differences are weighted by countries.

The second column of Table 3.5 refers to gender differences in PIRLS reading that were examined with Figure 3.2. Similarly to these results, girls fare much better than boys in PISA reading for all CEE countries. The correlation of gender

differences between PISA and PIRLS is 0.65 if all OECD and CEE countries covered by both surveys are taken into account (Table A 3.2 in the Appendix gives the correlation matrix of gender differences between different tests).

One main factor might account for similar but not highly correlated PISA and PIRLS results on gender differences: PIRLS focuses on primary schooling and PISA on later secondary schooling. Survey results over different age groups indicate that gender differences as well as general educational disadvantage increase with pupils age (OECD, 2001). Table 3.5 might confirm this pattern. Even though a PIRLS gender difference of 20 is not the same as an equally high magnitude in PISA, both surveys' organisers set the mean scores across countries to the same value of 500 and a standard deviation of 100. The comparison of figures for PIRLS and PISA gender differences reveal that the values are twice as high for PISA as for PIRLS. Albeit these figures are not directly comparable, 1 test point in PIRLS is unlikely to be equivalent to 2 test points in PISA. Hence, the results might indicate that gender differences are higher for older pupils. Nevertheless, also the different nature of the surveys PIRLS and PISA could explain different results.

Gender differences in OECD countries are not significantly different from those in CEE countries for PIRLS. However, regarding PISA results only Hungary and Romania show a similarly low gender difference in reading achievement than OECD countries while all other post-communist countries display greater gender inequalities (even though not all CEE countries show significantly larger gender differences compared to the OECD average).

Varying results on gender inequality means also differently significant gender discrepancies between countries in reading for PIRLS and PISA. Table A 3.1 shows that while France and Russia show rather equally low gender inequalities for PIRLS, France displays a significantly lower disadvantage of boy's compared to Russia with PISA. Gender inequality in Macedonia and Latvia is significantly higher compared to almost all CEE and OECD countries in PISA, while only in comparison to the Czech Republic, France and Italy (and Germany and Hungary for Latvia) in PIRLS.

Column 3 and 4 of Table 3.5 compare TIMSS and PISA results regarding the subject maths. For both surveys the Czech Republic, a country with high educational achievement, is the only post-communist country where girls' average maths achievement is significantly lower than that of boys. In all other CEE countries female pupils' knowledge of mathematics is rather equal to that of boys. An outlier is Albania, where girls fare significantly better than boys and where boys' educational

inequalities are large compared to other CEE countries and across all subjects of the survey PISA. Average OECD and CEE country figures indicate that transition countries are more successful in maintaining gender equality than Western industrialised countries for PISA while country group differences are not significant for TIMSS.

The correlation coefficient of gender differences in mean maths scores is moderate with 0.59 for all OECD and CEE countries covered in both surveys (see Table A 3.2).

An important result deriving from the comparison of maths and reading achievements by gender is that girls' disadvantage in mathematics is obviously not similar to boys' disadvantage in reading. The first is rather marginal compared to the last in CEE countries independent of whether maths achievement is a reflection of curriculum coverage as for TIMSS or of mathematic literacy as for PISA. The overall advantage of female over male pupils in schools seems to be even higher in transition countries, given that girls' advantage in reading achievement is greater than in the West and girls disadvantage in maths appears to be rather small.

The last two columns of Table 3.5 compare gender differences in science for PISA and TIMSS. Surprisingly, gender differences are positive for TIMSS indicating girls' disadvantage and partly negative for PISA indicating boys' disadvantage in science. Contradicting results in gender disadvantages might be due to PISA's greater emphasis on life science, where females tend to perform well, while TIMSS emphasises physics, where males generally perform better. Additionally, the higher proportion of open-ended questions in which females tend to do better and the emphasis on application of knowledge in PISA is probable to account for females' better achievement in PISA science. (OECD, 2001). However, even though PISA and TIMSS results are contradictory given the result of negative and positive gender differences, the correlation coefficient of gender differences in mean science scores is again moderate with 0.56 for all countries covered in both surveys (Table A 3.2). (This means that the higher boys' disadvantage in PISA, the lower boys' advantage in TIMSS.)

Taken all subjects together, girls' advantage in transition countries seems to be generally higher than that in the West, given that girls in post-communist countries fare in three out of six measures better (PISA and PIRLS reading, PISA science) and only in one measure worse than boys (TIMSS science). This is compared to girls in the OECD who show significantly better results than their male counterparts in only

two measures (PISA and PIRLS reading) while they are in a significant disadvantage in three measures (PISA and TIMSS maths, TIMSS science). Hence, regarding the subjects maths and science CEE countries seem to be more successful than OECD countries in limiting girls' educational disadvantage. In addition, in reading achievement girls' educational advantage appears to be greater in post-communist than in Western industrialised countries regarding 15 year-olds in PISA.

However, the position of the Czech Republic is striking. Throughout all surveys and measures girls seem to be in a greater disadvantage compared to other transition countries, since female pupils show relatively low educational advantage over boys in reading and PISA science and appear to have much lower educational achievements than boys in maths and TIMSS science. Regarding survey agreement on gender inequality in educational achievement, differences between surveys are most apparent regarding the subject science, since boys show better performance in TIMSS, but girls fare partly better in PISA. However, the high correlation coefficient of 0.56 for gender differences between both surveys shows that results are not as contradictory as signs seem to imply. Also regarding other measures, correlation coefficients of 0.65 for reading and 0.59 for maths show a moderate agreement between surveys.

3.6 Three interpretations of gender differences in educational achievement

What are the implications of gender differences described in Table 3.5 in terms of something readily understood? The achievement scores lack a natural metric. What does it mean that female pupils' average achievement in PISA reading is 58 test scores higher than that of boys in Albania? Is this a big or small gender difference? This Section discusses the importance of gender differences by offering three different possibilities for interpreting gender disadvantage.

3.6.1 Gender differences expressed in school year progression

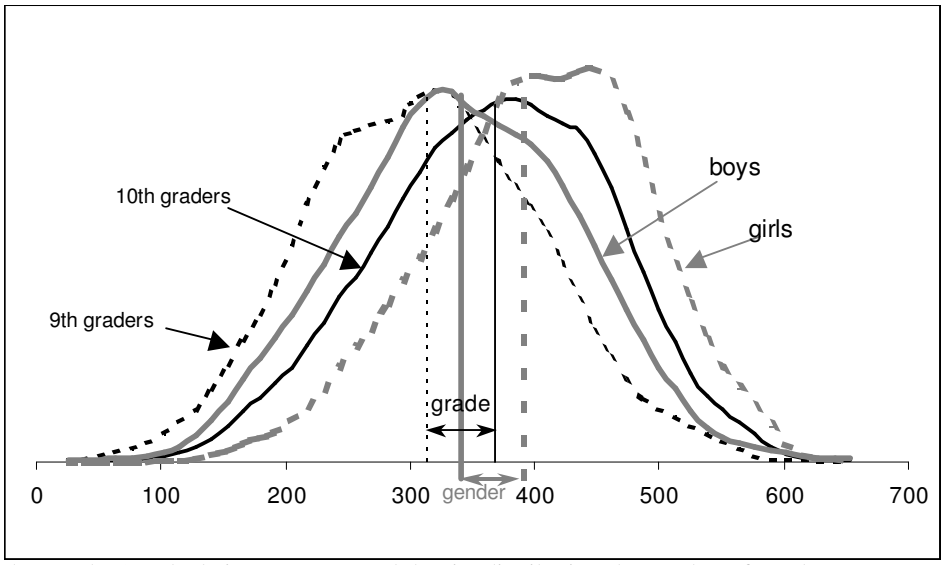
For interpreting gender differences we can make use of variation in mean achievement between different grades. In general, surveys are not designed for comparisons across grades, so that results need to be interpreted cautiously.[95] Figure 3.4 plots the distribution of scores in Albania for boys and girls (grey lines - both only for pupils in 10th grade) and 9th and 10th graders (black lines - both genders) for PISA

[95] This is especially true for PISA that covers a sample of 15 year-olds independent of their grade attendance and not – like TIMSS – a sample of 7th or 8th graders.

reading separately. Average achievement differences between the both grades are 56 reading points. This is roughly equivalent to differences in mean achievement between boys and girls. Hence, on average Albanian girls are about one year of schooling ahead of their male counterparts in reading achievement which appears to be a quite considerable disadvantage for boys.

Table A 3.3 in the Appendix displays the disadvantage of gender expressed in school years for subjects of PISA and TIMSS surveys for these CEE countries where gender differences and grade differences are significant. Regarding reading achievement, girls are almost two school years ahead of boys in the Czech Republic, one and a half year in Macedonia and Russia and about one year in Latvia and Hungary. Compared to OECD countries as a whole this male disadvantage in CEE countries seems quite high since boys in the West lack 'only' about a half year of grade progression compared to their female counterparts. In TIMSS maths girls face educational disadvantage similar to half a year of school progression only in the Czech Republic. Girls' disadvantage is much higher for TIMSS science since they are about one year of schooling behind boys in the Czech Republic and Hungary. Expressed in years of grade progression the other post-communist countries do not differ greatly from OECD countries for the same subject. However, boys in Latvia, Macedonia and Russia are lacking 0.7 years of school progression in PISA science while there is no significance in grade progression for OECD countries.

Figure 3.4: Kernel density distribution of PISA reading achievement in Albania by grade and gender



Source: PISA+ data, author's calculation. Note: Kernel density distributions by gender refer only to 10th graders. The sample size for pupils in 9th grade is 1.211, for pupils in 10th grade 3.475. Mean differences between 9th and 10th graders are 56 reading points. Mean differences between boys and girls in 10th grade are 49 reading points.

3.6.2 Gender differences compared to other factors related to educational inequalities

Another possibility of interpreting gender differences is to relate them to educational disadvantages as a whole or to other factors impacting upon national educational dispersion like parental socio-economic status (SES)[96]. For PIRLS and PISA Table 3.6 reports gender differences in reading mean achievement[97], national standard deviation and differences in mean achievement for children with two different SES: first, children whose mothers completed at least upper secondary education compared to children whose mothers did not; second children in households with more than 100 books compared to children with up to 100 books at home (a measure for parental education but also family income).

A general result of Table 3.6 is that girls' educational advantage in reading seems to be relatively low once expressed in standard deviations for PIRLS. Gender differences make up about 15 percent (Romania) to 35 percent of the national standard deviation (Moldova). In PISA, girls' better educational achievement is as high as half of the national standard deviation in Albania, Bulgaria, Latvia and Macedonia and again quite small in terms of educational dispersion measure for Romania (about 0.14). There is no clear variation between transition and OECD countries, that both show for PIRLS quite similar gender differences of about one fourth and for PISA about one third of the country groups' standard deviation. Hence in general gender differences are far below the total country variance in educational achievement and explain only a small share of educational disadvantage in CEE and OECD countries.

Once mean gender differences are compared with the SES differences in achievement results suggest that the last is often considerable greater than the first. Nevertheless educational achievement differences by mothers' education and gender are quite similar in Moldova (PIRLS), Albania (PISA) and Poland (PISA). In Latvia, Slovenia and Macedonia (only PIRLS) gender differences in achievement are comparable to educational achievement differences of children with more and up to 100 books at home. Hence, in some countries gender is as important as socio-economic background in explaining educational disadvantage. However, the heterogeneity of transition countries is great. For example, in Romania lowest gender-

[96] Another alternative for estimating the impact of gender on achievement results would be to conduct a formal decomposition of variance into that between and that within genders.

differences prevail compared to national standard deviation and mothers' education consistently for both surveys.

Table 3.6: Standard deviation and mean achievement difference in reading by gender and family background in PISA and PIRLS

	PIRLS				PISA			
	Gender	**Standard deviation**	**Mother's education**	**Books at home**	**Gender**	**Standard deviation**	**Mother's education**	**Books at home**
Albania					***-58***	99	64	70
Moldova	***-25***	75	26	54				
Bulgaria	***-24***	83	73	46	***-47***	102	92	67
Latvia	***-22***	62	41	19	***-53***	102	66	62
Slovenia	***-22***	72	46	24				
Macedonia	***-21***	103	55	20	***-50***	94	83	31
Lithuania	***-17***	64	40	28				
Slovakia	***-16***	70	61	29				
Hungary	***-14***		56	36	***-32***	94	71	87
Romania	***-14***	90	36	56	***-14***	99	45	50
Czech Republic	***-12***	65	38	26	***-37***	96	78	71
Russia	***-12***	66	24	18	***-38***	92	54	59
Poland					***-36***	100	42	57
CEE average	***-19***	*76*	*45*	*32*	***-41***	*98*	*66*	*61*
OECD average	***-17***	*75*	*41*	*32*	***-32***	*95*	*48*	*57*

Source: PISA and PIRLS data, author's calculations. Note: countries ordered by gender differences for PIRLS. OECD countries are for PISA: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Italy, Ireland, Japan, Korea, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, USA and UK. For PIRLS OECD countries are Canada, France, Germany, Greece, Iceland, Italy, the Netherlands, New Zealand, Norway, Sweden, Turkey, USA and UK. Mother's education compares achievement differences between children with mothers who completed and did not complete at least upper secondary education. 'Books at the home' refers to achievement differences between children who have more and up to 100 books at home. All values are at least significant at a 5 percent level.

3.6.3 Gender differences expressed in absolute educational disadvantage

A third way for interpreting gender differences is to switch from the comparison of gender differences in average achievement to the share of pupils below a certain threshold of educational achievement. Hence, this focus on *absolute educational disadvantage* is not only sensible to gender differences per se but also to countries' general levels of achievement and educational dispersion (both of them were discussed in Section 3.4). For example, a country with on average low educational achievement and high educational dispersion has a greater share of pupils with high educational disadvantage than countries with low dispersion and high average achievement. Gender differences between boys and girls in terms of the absolute benchmark reflect the before discussed gender differences in mean achievement but also gender differences in educational dispersion (that will be discussed in the next Section).

[97] I focus here on reading and not on maths or science, since gender differences in this subject are highest. Hence, once maths or science gender differences are concerned results will be much less

For the choice of the absolute benchmark of educational achievement I make use of the five literacy levels given in PISA for classifying pupils' achievement. PISA organisers define pupils who have achievement scores below PISA literacy level 2 as 'unable to solve basic reading tasks, such as locating straightforward information, making low-level inferences of various types, working out what a well-defined part of a text means and using some outside knowledge to understand'. (OECD, 2002b) This benchmark will be used in the following. The share of those students who cannot cope with simple reading tasks is of a greater concern than differences between best performing pupils since it reveals the profound shortcomings of educational systems to provide necessary educational skills for all.

Figure 3.5 presents a scatter plot of percentages of male (x-axis) and female pupils (y-axis) below PISA reading literacy level 2. The solid line shows where countries would be situated in case the same share of girls and boys showed equally low average achievement in reading. All countries are situated below the solid line, indicating as seen before that a higher share of boys than girls have serious deficiencies in reading abilities. The dotted diagonal lines show the amount of gender differences in percent; e.g. if countries are situated between the solid and the first dotted line, less than 10 percent more boys than girls perform below PISA level 2 in this country.

OECD and CEE countries show different patterns of low achievement and gender discrepancy. In OECD countries much lower shares of pupils show high deficiencies in reading ability and gender differences between students performing below or at level 1 are generally not higher than 10 percent.

This result reflects that educational achievement in OECD countries is quite high (see Section 3.4) so that the largest share of students meets the PISA level 2 benchmark.

The great national share of low performing students in some transition countries displays the before discussed low educational achievement in these countries. Countries with high shares of pupils performing below PISA level 2 tend to have also greater gender inequalities among pupils at the bottom of the achievement distribution. In about half of transition countries gender differences amount up to 20 percent. In Bulgaria 50 percent of males and 30 percent of females, in Macedonia 72 percent of males and 52 percent of females and in Albania 81 percent of males and 60 percent of females fare below PISA level 2 (see Table A 3.4 in the Appendix). Hence,

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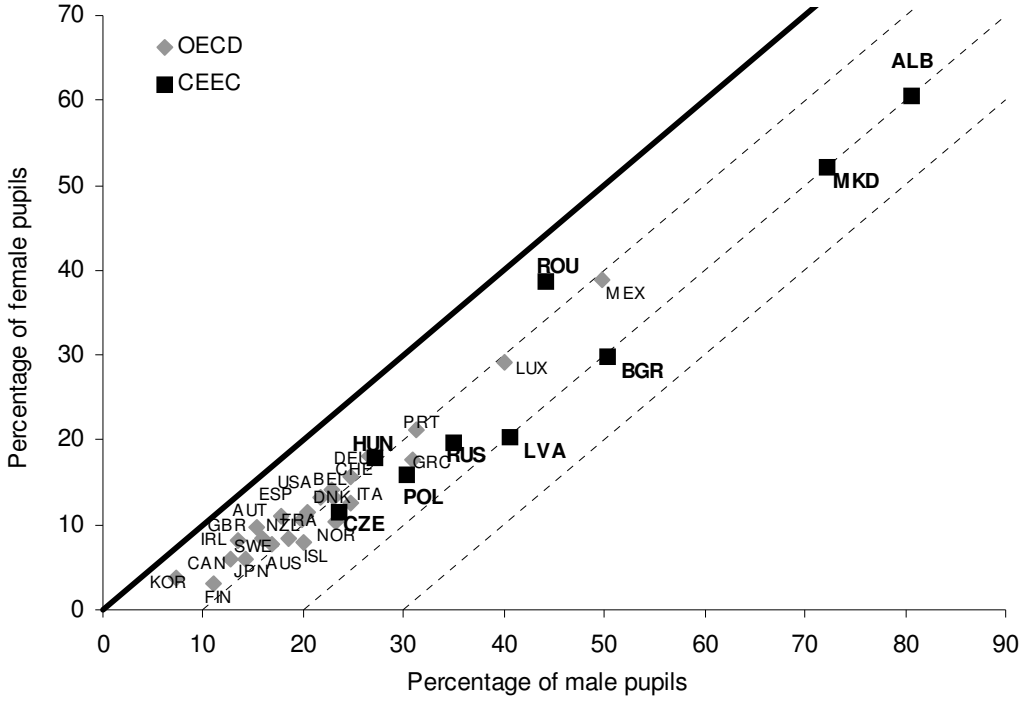
pronounced than for reading.

these educational systems do not manage to provide sufficient and gender neutral education since every second 15 year-old male in Bulgaria and two of three male pupils in Macedonia and Albania face serious deficiencies in reading literacy while girls' disadvantage remains much lower (but is considerably higher than in OECD countries).

Figure 3.5: Percentage of 15 year-old female and male pupils unable to solve basic reading tasks (achievement score below PISA reading level 2)



Source: OECD and UNESCO 2003[98], PISA data, author's calculations.

Even though more moderate also the countries Latvia (41 percent male vs. 20 percent female), Poland (30 percent male vs. 16 percent female) and Russia (35 percent male vs. 20 percent female) show a higher gender discrepancy in absolute educational disadvantage than OECD countries. Hence, gender differences regarding absolute disadvantage are concerningly large in some transition countries.

It is noteworthy though that while Romania has a favourable position in gender equality of educational achievement compared to OECD countries, a much greater share of boys and girls are disadvantaged. Hence, an improvement of educational achievement of students in badly performing countries would diminish the share of disadvantaged students much more than an improvement of gender equality.

3.7 Where do gender differences in average achievement derive from?

This Section looks at the statistical explanation for gender differences in mean achievement and does this by examining gender differences across the whole achievement distribution. It is examined in which part of the achievement distribution gender differences are greatest: at the top or at the bottom. This question is of interest since gender differences in mean achievement driven by high gender differences among the worse performers is of a much greater concern than gender differences driven by large gender differences among the best performers. It can be argued that educational disadvantage determined by top-performers is even a good sign showing that educational systems manage to promote also those children with high ability. On the other hand, high educational disadvantage among lowest performers indicates a lack of schools' capability to help children with learning problems successfully.

Literature shows that males are more variable in cognitive abilities than females. (Hedges and Friedman, 1993) Do we find the same gender pattern once focusing on 3 different surveys with six tests of cognitive ability for transition and OECD countries? Table 3.7 presents the ratio of boys to girls' educational dispersion (measured by the difference between the 95th and 5th percentile) for all six tests. Transition countries are compared to Italy, Sweden and the UK. Light grey fields indicate a significantly higher mean achievement for girls, dark grey fields for boys.

Results show indeed that educational disparities are higher for boys than for girls consistently across tests, surveys and in almost all transition[99] and the three pre-1990s OECD countries. Boys' educational dispersion is up to 11 percent higher than that of girls.

We might expect that boys' higher mean achievement is related to their lower educational dispersion. However, this is not the case. In all subjects where boys fare significantly better than girls (shaded dark grey) they still show higher educational dispersion than their female counterparts.

Figures 3.6 and 3.7 examine the difference in boys' and girls' achievement distribution in greater detail by presenting the boys to girls achievement ratio per each ventile. A ratio of 1 means that the value of the ventile for girls is equal to the value of the ventile for boys, a ratio smaller than 1 indicates that girls show a higher

[98] The percentage of male and female pupils below PISA level 2 is wrongly reported in OECD and UNESCO (2003) for PISA+ countries (Albania, Bulgaria, Macedonia and Romania).
[99] In only four cases educational dispersion is equal or neglectable smaller for boys than for girls: Latvia for PIRLS, Bulgaria for PISA science and Romania for PISA reading and TIMSS science.

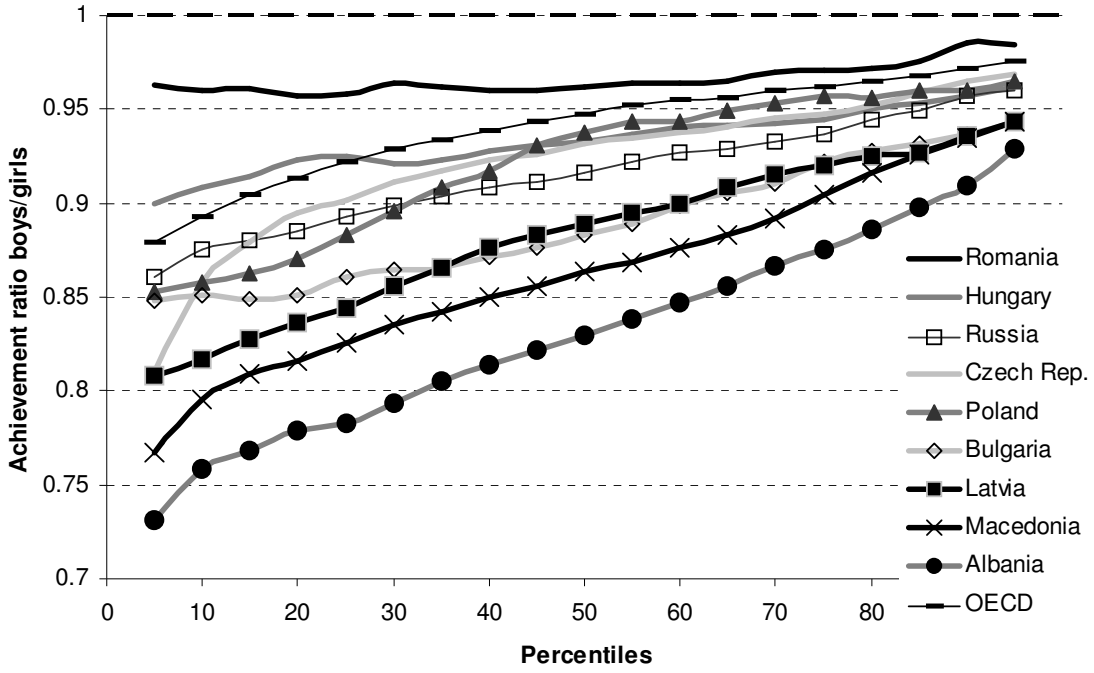
achievement than boys and a number greater than 1 indicates that boys show a greater achievement than girls in the ventile of their genders' distribution.

Table 3.7: Boys to girls ratio of the difference between achievement in the 95th and 5th percentile

	PISA Reading	PIRLS Reading	PISA Maths	TIMSS Maths	PISA Science	TIMSS Science	Surveys Average
Slovakia		1.06		1.10		1.10	1.09
Poland	1.09		1.10		1.05		1.08
Czech	1.17	1.06	1.10	1.02	1.09	1.03	1.08
Slovenia		1.06		1.07		1.08	1.07
Latvia	1.09	0.99	1.04	1.08	1.12	1.09	1.07
Macedonia	1.10	1.01	1.09	1.04	1.11	1.04	1.07
Moldova		1.10		1.06		1.04	1.07
Russia	1.08	1.05	1.04	1.09	1.05	1.04	1.06
Bulgaria	1.03	1.09	1.10	1.04	0.99	1.07	1.05
Lithuania		1.02		1.03		1.11	1.05
Albania	1.07		1.06		1.03		1.05
Hungary	1.03	1.07	1.01	1.08	1.02	1.07	1.05
Romania	1.00	1.07	1.01	1.08	1.01	1.00	1.03
Italy	1.12	1.02	1.08	1.03	1.10	1.05	1.07
Sweden	1.06	1.06	1.01	1.02	1.07	1.06	1.05
UK	1.08	1.04	1.08	1.09	1.04	1.09	1.07

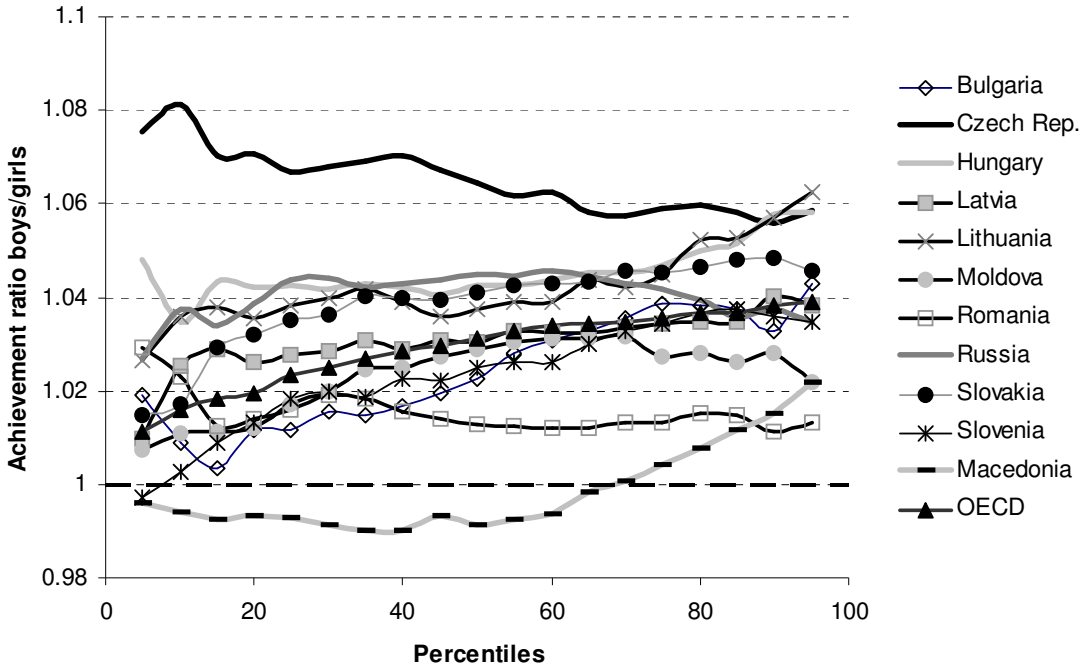
Source: PISA, PIRLS and TIMSS data; author's calculation. Note: the ratio is calculated by dividing boys' P95-P5 with that of girls'. Countries are ordered by the average ratio across all surveys. Light grey shading indicates girls' significantly higher mean achievement than boys, dark grey shading indicates boys' educational advantage (see Table 3.5).

Figure 3.6: Boys to girls ratio of achievement scores for each ventile in PISA reading



Source: PISA data, author's calculations.

Figure 3.7: Boys to girls ratio of achievement scores for each ventile in TIMSS science



Source: TIMSS data, author's calculations.

Figure 3.6 gives the ratio for PISA reading, a subject where on average boys fare significantly worse than girls in all OECD and transition countries. For all ventiles and countries girls' achievement scores are higher than those of boys. However, the interesting result is the quite similar pattern of gender achievement differences across ventiles for all transition and pooled OECD countries. With the exception of Romania, gender differences in achievement are greatest at the bottom of the distribution. In some countries this gender gap at the bottom appears to be large. In Albania, Macedonia, Latvia and the Czech Republic boys at the very bottom of the distribution reach achievement scores that are around or more than 20 percent lower than those of 'worst achieving' girls. In Bulgaria, Poland, Russia, Hungary and the pooled OECD sample boys in the 5th percentile achieve about 10 to 15 percent worse than girls situated in the bottom of their distribution.

With growing percentiles the discrepancy in achievement scores in the two different gender distributions decreases. At the 95th percentile, the top of the achievement distribution, boys reach achievement scores that are only between 2 and 7 percent lower than those of girls.

Figure A 3.1 in the Appendix shows a similar pattern of achievement distribution by gender for the subject reading in PIRLS where gender differences are much smaller than in PISA.

This result suggests that mean achievement differences between boys and girls discussed above (Table 3.5) derive mainly from boys' low performance at the bottom of the achievement distribution. Since in some countries boys fall even far behind the 'worst achieving' girls this result is concerning.

We might assume that average achievement differences between two different groups of children can generally be explained by greater discrepancies in the bottom of the two achievement distributions. Hence, in case girls achieve lower scores than boys on average we would expect to find that girls fall greatest behind boys' achievement scores again at the bottom of the distribution. Girls have a consistent disadvantage over boys only in one test: TIMSS science. Hence, Figure 3.7 presents gender achievement differences by percentile for this survey and subject.

The general pattern for TIMSS science is opposite to that in PISA reading: with increasing percentiles also girls' disadvantage in achievement increases. Romania, Russia and the Czech Republic are the only exceptions. Hence, once focusing on science achievement girls' disadvantage is driven by the better performance of boys in the top of the distribution. Figure A 3.2 in the Appendix presents a similar pattern for PISA maths. The interesting addition of this figure is that also in countries, where mean achievement differences between genders are not significant (see Table 3.5) differences in the genders' achievement distribution can be great. E.g., in Poland, Macedonia and Bulgaria boys and girls show no significantly different average PISA maths achievement scores. However, achievement scores of boys in the 5th percentile are about 5 percent lower once compared to that of girls in the 5th percentile. Boys' worse achievement in the bottom of the distribution compared to girls is balanced with boys' better achievement in the top of the distribution. Hence, the similar mean achievement for girls and boys conceals these gender differences in the bottom and the top of the achievement distribution.

Taken together, boys' great disadvantage in reading achievement derives mainly from lowest low achieving boys. Regarding reading survey results suggest consistently that boys fall even considerably behind the achievement of 'worst performing' girls. On the other hand, once gender differences at the top are concerned, boys' disadvantage is much smaller. In contrast, as far as maths and science achievement is concerned gender differences are more similar across different

percentiles. Girls' disadvantage is slightly increasing with higher percentiles, so that gender differences derive more from higher performing boys in the top distribution.

Due to this result boys' educational disadvantage in reading appears even more severe. Given that lowest low performing boys fall still far behind lowest low performing girls in reading in some countries the question arise whether these male pupils have the possibility to catch up in their reading achievement over time. On the other hand, the female ability lack in maths and sciences for some countries is not as much concerning since it is much smaller and generally due to outperforming males at the top of the achievement distribution.

3.8 Determinants of gender inequalities

Until now I compared gender (G) inequalities in educational achievement (A) across countries and surveys. I assumed that an individuals (i) achievement is dependent on gender:

(1) $$A_i=\alpha_0+ \alpha_1 G_i+\varepsilon_i$$

In general, educational production functions estimate also the impact of socio-economic background (SE) on achievement, e.g.:

(2) $$A_i=\beta_0+ \beta_1 G_i+ \beta_2 SE_i+\varepsilon_i$$

However, as long as gender differences in achievement of school age children are concerned, there is ample reason to assume that the crude impact of gender on achievement is very similar to its impact conditional on socio-economic background. First, all children tested in PISA, TIMSS and PIRLS are still in compulsory schooling, so that the sample of the children in our analysis cannot be selected depending on socio-economic background (as perhaps later on in tertiary education). Second, gender in contrast to single parenthood cannot proxy some other factors like socio-economic background. Parents do not have a choice of their child's gender.

We can therefore assume that $COV(G,SE)=0$ and hence, that regarding gender differences

(3) $$\alpha_1 = \beta_1$$

In order to test this null-hypothesis I run for each survey and country OLS regressions with the dependent variable of pupils' achievement score and explanatory variables on gender and socio-economic background characteristics.

Section 3.8.1 will test the null hypothesis that bivariate results (1) are equal to multivariate results (2).

Section 3.8.2 goes one step further examining the interaction between pupils' gender and their socio-economic background. Some literature suggests that there is a gender-sensitive impact of educational determinants upon educational success. Gender disadvantage in education might intensify with poverty and social disadvantage. (UNESCO, 2003a) For several developing countries it has been illustrated, that parents with lower education promote boy's educational attainment more than that of girls while higher educated parents do not differentiate between the genders of their children. The greater predominance and re-emergence of traditional values in Eastern European countries (Inglehart, 2003) might have resulted in lower chances of girls in less educated households to be supported by their parents.

The influence of region on educational achievement might be gender sensitive, too. Traditional family roles appear to be predominant especially in rural areas in CEE countries where educational quality is generally worse than in urban areas (UNICEF, 2002b; World Bank, 2000b). Rural locations in especially poor transition countries like Macedonia or Moldova might be characterised by a greater need of girls to assist in the household, to care for younger siblings and to help on the land. Thus, women's education in these areas might be considered as less important than men's. This again could lead to a different impact of parents living in rural areas on gender differences in educational achievements.

Hence, Section 3.8.2 tests that the area (AR) and parents' socio-economic status (SE) might impact differently on genders' achievement:

(4) $$A_i=\beta_0+\beta_1 G_i+\beta_2 SE_i+\beta_3 AR_i+\beta_4 SE_i G_i+\beta_5 AR_i G_i+\varepsilon_i$$

3.8.1 Gender differences conditional on socio-economic background factors?

In order to test whether bivariate gender differences in achievement are equal to multivariate results based on socio-economic factors I run for each survey and country identical OLS regression models controlling for the following children's family background: single parenthood family, sibling in family, migration, mother completed secondary education, mother completed tertiary education and books in household. (The method for calculating standard errors that needs to take the complex survey design of PISA, TIMSS and PIRLS into account is described in the Appendix.)

Table 3.8 presents gender differences in educational achievement conditional on socio-economic background for all CEE countries and a group of OECD countries for all surveys. It can be directly compared with Table 3.5 that showed unconditional gender differences in achievement. Again, light grew fields show a significant female advantage and dark grey fields a male advantage in achievement. Gridlines in cells

indicate that the multivariate result is significantly different from the bivariate result at an at least 5 percent level.

The results show that for some countries gender differences in achievement are now significant while they were not in the bivariate analysis. For PISA maths girls fare now significantly worse than boys in Bulgaria and Hungary, while girls have a significant advantage over boys in Romania. In addition, for TIMSS maths girls in Latvia, Hungary and Slovakia fare now significantly worse than boys. I find the same effect for girls in the Czech Republic for PISA science. In TIMSS science boys show now significantly better achievements for all transition countries compared to Table 3.5.

Table 3.8: Gender coefficient for each survey and subject conditional on children's socio-economic background derived from OLS regression analysis conducted equally for each survey and subject

	PISA Reading	PIRLS Reading	PISA Maths	TIMSS Maths	PISA Science	TIMSS Science
Albania	**-43.9 (3.3)**		-1.0 (4.3)		**-12.7 (4.2)**	
Latvia	**-50.1 (3.9)**	**-19.0 (1.9)**	7.4	**9.3 (3.3)**	**-19.3 (4.3)**	**19.1 (2.8)**
Macedonia	**-41.7 (4.3)**	**-23.1 (3.2)**	6.9 (4.5)		-7.7 (4.0)	
Bulgaria	**-38.6 (4.6)**	**-20.6 (2.3)**	**11.0 (5.5)**	3.8 (4.1)	0.5 (4.6)	**17.4 (4.3)**
Moldova		**-23.2 (2.3)**		4.2 (2.7)		**11.7 (3.0)**
Lithuania		**-15.0 (2.2)**				
Russia	**-34.8 (2.7)**	**-11.4 (1.8)**	2.4 (4.0)	4.6 (2.8)	**-11.2 (3.7)**	**24.0 (3.1)**
Czech Republic	**-26.7 (3.5)**	**-11.6 (2.1)**	**20.6 (4.2)**	**16.7 (3.4)**	**10.6 (4.0)**	**33.3 (3.3)**
Poland	**-29.8 (6.3)**		10.6 (8.3)		12.1 (6.3)	
Hungary	**-28.7 (3.8)**	**-15.8 (1.6)**	**10.1 (4.4)**	**8.4 (2.7)**	-0.1 (4.8)	**25.9 (2.7)**
Romania	**-13.7 (4.8)**	**-16.9 (2.5)**	-10.1 (5.3)	-1.6 (3.4)	**-14.7 (5.1)**	**10.2 (4.3)**
Slovakia		**-14.0 (1.9)**		**8.3 (2.8)**		**24.3 (3.1)**
Slovenia		**-22.1 (2.3)**		2.1 (3.0)		**13.5 (2.7)**
OECD	**-30.6 (1.2)**	**-16.0 (0.9)**	**12.6 (1.4)**	**8.2 (2.0)**	**3.4 (1.4)**	**24.5 (2.2)**

Source: PISA, PIRLS and TIMSS data; author's calculations. Note: standard errors are given in parentheses. Clustering of school and weighting taken into account for estimation of standard errors (see Appendix on details of the calculation of regression results). A negative value means that girls achieve better than boys; a positive value denotes boys' better achievement. Light grey fields show a significant advantage of girls over boys, dark grey fields denote a significant advantage of boys. Grid lines (Albania) indicate significant differences between conditional and unconditional results (Table 3.5). For all surveys it was controlled for the following independent variables of children's socio-economic background: single parenthood, sibling, migration, mothers' secondary and tertiary education and books in household. For Lithuania and Macedonia data were not available for some socio-economic background characteristics in TIMSS.

However, differences in gender variation between bivariate and multivariate results appear to be significant only for Albania[100]. In PISA reading the great

[100] The t-value is calculated by

$$t = \frac{\beta_{(bv)} - \beta_{(mv)}}{se(\beta_{(bv)} - \beta_{(mv)})}$$ whereby

$$se(\beta_{(bv)} - \beta_{(mv)}) = \sqrt{se(\beta_{(bv)})^2 + se(\beta_{(mv)})^2 - 2COV\{se(\beta_{(bv)}), se(\beta_{(mv)})\}}$$

(bv= bivariate result, mv= multivariate result) I estimated the t-value without taking the covariance of the two β-coefficients into account. Hence, I underestimated the t-value.

advantage of girls over boys decreases and it vanishes for PISA maths. These significant differences are difficult to explain without doubting the data on Albania.[101]

For all other countries gender differences between bi- and multivariate results do not differ significantly. Hence, as expected socio-economic factors do not have a significant impact upon gender differences in achievement and I cannot reject the null-hypothesis that COV(G,SE)=0.

3.8.2 The impact of socio-economic factors on gender inequalities in educational achievement

In order to measure a gender sensitive impact of the educational determinants I estimate a similar OLS regression model to the previous Section but add three gender interaction variables on education (gender multiplied with mother's education, books in household and area). For the coding of the variables and the variables included see Table 3.9. The control group pupil is male, has a mother who did not complete upper-secondary school, has less than 100 books at home, does not live with a sibling and lives in an urban area.

Table 3.9: Coding of variables used in the OLS regression analysis

	Variable	Coding of variable
Dependent variable	Reading test score PISA	
Independent variables		
Girl	Gender	boys =0, girls =1
SE (Parents' socio-economic background) and FT (Family type)	Books in household *(mother has education below upper secondary)*	0 = 0–100 books, 1 = more than 100 books *(Control group: mother did not complete secondary education)*
	Mother above upper secondary education	1 = mother completed at least upper secondary education, 0 = rest
	Education missing	0= data available, 1=data missing
	Sibling	0 = child without siblings, 1 = other
Gender interaction variables	SE*Gender	books * gender mother education * gender area * gender
Rural area	Area	0=urban or suburban, 1= rural
	RegMis	Location missing: 0 if data available, 1 if data missing

It is more likely to find a different impact of educational determinants on girls and boys in the survey and measure where gender differences are highest than in surveys where gender differences are low or not significant. Hence, Table 3.10

[101] The conditional gender differences for Albania resulting from the regression analysis seem to fit better into the surveys profiles than the unconditional difference, since Albania was the only participating country in PISA that showed a significant disadvantage of boys in maths achievement in the bivariate analysis.

presents OLS regression results for PISA reading for CEE and a sample of OECD countries. Fields in light grey show where gender differences are significant.

For all countries mother's education and books in household is highly correlated with educational achievement. Pupils who are living in rural areas show generally worse reading achievements than pupils in urban areas. Surprisingly, Macedonia is an exception even though with a very low level of significance. In countries where the variable 'sibling' is significant pupil's achievement is lower if they have a brother or sister living with them at home.

Table 3.10: PISA reading OLS regressions

	Albania	Bulgaria	Czech	Hungary	Latvia	Poland	Romania	Russia	Macedonia	OECD
Girl	52.5 (8.1)***	34.8 (14.7)**	59.5 (20.2)***	19.3 (7.7)**	40.8 (11.8)***	34.6 (11.2)***	9.9 (7.9)	38.8 (7.7)***	42.3 (6.6)***	26.3 (2.6)***
Mothers' education	36.2 (6.2)***	35.1 (8.9)***	73.0 (17.3)***	32.1 (6.2)***	46.1 (7.6)***	29.6 (7.1)***	14.2 (7.3)*	31.0 (6.1)***	75.4 (6.8)***	30.6 (2.2)***
Education* girl	-4.3 (7.2)	4.8 (14.2)	-27.6 (15.5)*	11.3 (7.6)	1.7 (10.9)	-4.3 (8.6)	14.4 (9.0)	-6.8 (7.3)	-0.3 (7.0)	0.6 (2.2)
Education missing	-63.8 (12.1)***	-2.4 (11.8)	-33.5 (15.3)**	-30.3 (12.1)**	-19.2 (9.0)**	-22.0 (8.7)**	-31.0 (14.1)**	-3.1 (4.4)	-36.3 (11.0)***	-33.1 (2.9)***
Books	51.2 (7.5)***	52.1 (5.7)***	60.9 (7.4)***	73.0 (5.7)***	52.9 (6.2)***	50.0 (7.3)***	34.5 (6.1)***	47.4 (4.1)***	15.9 (6.4)**	48.6 (1.6)***
Books* girl	-13.5 (8.0)*	4.9 (6.1)	-3.9 (8.3)	-4.2 (6.4)	-3.3 (6.8)	-0.4 (8.1)	-10.2 (9.1)	-0.4 (4.3)	-3.5 (6.7)	-0.1 (1.9)
Sibling	8.5 (7.4)	-10.7 (4.8)**	-18.8 (5.1)***	-15.9 (4.0)***	-9.5 (6.1)	-14.0 (6.9)**	-12.7 (3.6)***	-20.3 (3.6)***	0.5 (5.0)	-10.1 (1.6)***
Rural area	-46.7 (8.2)***	-55.0 (12.0)***	-15.4 (10.5)	-31.0 (11.0)***	-39.2 (10.2)***	-27.0 (16.6)	-57.7 (13.1)***	-38.2 (7.6)***	15.6 (8.8)*	-18.2 (2.9)***
Rural area* girl	-9.4 (7.5)	0.6 (12.8)	-4.9 (9.0)	6.3 (9.5)	18.8 (8.3)**	4.9 (13.3)	-3.9 (9.4)	5.5 (5.5)	-10.7 (7.9)	11.2 (2.5)***
Area missing		24.3 (28.2)		-94.8 (20.3)***	-21.3 (10.5)**					-6.0 (5.5)
Constant	318.5 (11.1)***	372.4 (11.1)***	394.4 (24.3)***	418.5 (7.7)***	386.7 (13.4)***	439.2 (11.0)***	425.1 (7.4)***	426.3 (7.7)***	304.1 (7.3)***	469.4 (3.2)***
Obs.	4456	4317	5311	4744	3777	3474	4731	6578	4201	62196
R^2	0.32	0.23	0.22	0.30	0.20	0.16	0.16	0.21	0.26	0.16

Source: PISA data, author's calculation. Note: standard errors taking survey design into account (see Appendix) in parentheses, * significant at 10%; ** significant at 5%; *** significant at 1%; fields in grey show a significant different between genders.

As expected, the gender coefficient is highly significant for all countries. However, in contrast to the expectations gender interaction variables are generally not significant with four exemptions: in the Czech Republic gender differences between children with lower educational background are higher than those of children with higher educational background. The same relation appears for Albania regarding the

variable 'books in household'. The level of significance is very low for both countries. However, for Albania and the Czech Republic there seems to exist a slight effect, that higher socio economic background leads to mitigated gender differences in achievement probably by parental efforts to promote boys' reading skills. However, regression results for other countries and a similar regression run for PIRLS data show that the result of gender sensitivity of mothers' education and books in household is not robust across surveys[102].

Results are similar regarding gender interacted with urban and rural location. Only in Latvia and the group of OECD countries the negative impact of pupils' rural catchment area on educational achievement is mitigated by almost a half, if it is female students who live in rural locations.

Taken together, as expected controlling for socio-economic background does not impact on gender differences in educational achievements in general, so that the null hypothesis of COV(G,SE)=0 could not be rejected.

In addition, in general determinants of educational achievement are generally not gender sensitive.

However, the 13 post-communist countries analysed here do not include countries in the Caucasus and Central Asia, where different economic, cultural and geographic environments might determine gender variance in educational achievement much more pronouncedly than in those countries covered by the three surveys.

3.9 Conclusion

This Chapter examined gender equality in education in countries of CEE (excluding countries in Central Asia and Caucasus) regarding two questions:

1. Do surveys show robust results regarding gender differences in educational achievement?

Results indicate a moderate agreement on gender equality in educational achievement between surveys. The correlation coefficients regarding countries' gender achievement gaps are around 0.6 for the same subjects between surveys. Surveys agree also regarding clear patterns on gender equality for some countries. For example, consistently girls' advantage in reading is the lowest and boys' advantage in

[102] The results of an identical regression model applied to transition countries for PIRLS reading does not confirm the PISA result. For this survey the interaction variable on mothers' education is only significant in the Slovak Republic (and only at a 10 percent level) but in the other direction.

maths and science is the highest compared to all other transition countries in the Czech Republic. On the other hand, Romania shows very small gender inequalities throughout all surveys. Also the comparison of gender gaps in achievement across the whole achievement distribution shows similar patterns for surveys that cover the same subject.

2. Does gender balance in educational access translate into gender equality in educational achievement?

The answer is clearly no.

PIRLS and PISA data reveal consistently a great disadvantage of boys in reading achievement. Even though boys show partly better results for the subjects science and maths for some surveys and countries, the female advantage in reading is much more pronounced if expressed in grade progression or absolute educational advantage.

The great advantage of girls over boys regarding educational achievement in CEE countries is surprising after 10 years of transition that is often believed to have favoured the male population. It is even more striking once transition countries are compared with OECD countries. Regarding the subjects maths and science transition countries seem to be even more successful than OECD countries in limiting girls' educational disadvantage compared to boys and hence are doing better in maintaining gender equality in educational achievement. In addition, in reading achievement girls' educational advantage and therefore boys' disadvantage seems to be even greater in CEE than in OECD countries regarding the survey PISA.

Boys' lower average achievement in reading is concerning since it is a result of very low achieving boys at the bottom of the achievement distribution. Worst performing boys show considerably lower achievement scores than worst performing girls in reading. This indicates that boys situated at the bottom of the achievement distribution might face serious problems in catching up with girls regarding their reading skills. On the other hand, if girls show on average lower achievement than boys in science and math, this can be greatly explained by boys' bigger advantage at the top of the achievement distribution.

These outcomes refer to bivariate analysis, but it was shown that once it is controlled for pupils' socio-economic status results on gender inequality do generally not change. In addition, gender inequalities in educational achievement seem not to be greater in rural compared to urban areas or in families with lower compared to those

with higher socio-economic background in those transition countries covered by the surveys.

3.10 Appendix

3.10.1 Graphs and Tables

Table A 3.1: Multiple comparisons of gender differences of 4th graders in PIRLS (below the diagonal line) and of 15 year-olds in PISA in mean reading achievement (above diagonal line)

	New Zealand	**Moldova**	**Bulgaria**	**Latvia**	**Slovenia**	Sweden	UK	**Macedonia**	Greece	Norway	Turkey	Iceland	USA	**Lithuania**	Canada	**Slovakia**	Netherlands	**Hungary**	**Romania**	Germany	**Czech Republic**	**Russia**	France	Italy
New Zealand		x	○	○	x	○	↑	○	○	○	x	○	↑	x	↑	x	○	○	x	○	○	○	↑	○
Moldova	○		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bulgaria	○	○		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Latvia	○	○	○		x	↑	↑	○	↑	○	x	↑	↑	x	↑	x	↑	(↑)	x	(↑)	(↑)	↑	(↑)	○
Slovenia	○	○	○	○		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sweden	○	○	○	○	○		↑	↓	○	○	x	○	○	x	○	x	○	○	x	○	○	○	○	○
UK	○	○	○	○	○	○		↓	○	↓	x	↓	○	x	○	x	○	○	x	○	○	↓	○	○
Macedonia	○	○	○	○	○	○	○		↑	○	x	↑	↑	x	↑	x	↑	↑	x	↑	(↑)	↑	(↑)	○
Greece	○	○	○	○	○	○	○	○		○	x	○	○	x	○	x	○	○	x	○	○	○	○	○
Norway	○	○	○	○	○	○	○	○	○		x	○	↑	x	↑	x	○	○	x	○	○	○	↑	○
Turkey	○	○	○	○	○	○	○	○	○	○		x	x	x	x	x	x	x	x	x	x	x	x	x
Iceland	○	○	○	○	○	○	○	○	○	○	○		↑	x	↑	x	○	○	x	○	○	○	(↑)	○
USA	○	○	○	○	○	○	○	○	○	○	○	○		x	○	x	○	○	x	○	○	○	○	○
Lithuania	○	○	○	○	○	○	○	○	○	○	○	○	○		x	x	x	x	x	x	x	x	x	x
Canada	○	○	○	○	○	○	○	○	○	○	○	○	○	○		x	○	○	x	○	○	○	○	○
Slovakia	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		x	x	x	x	x	x	x	x
Netherlands	○	↓	↓	○	↓	↓	○	○	○	○	○	○	○	○	○	○		○	x	○	○	○	○	○
Hungary	○	↓	↓	(↓)	↓	↓	↓	○	○	○	○	○	○	○	○	○	○		x	○	○	○	○	○
Romania	○	↓	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		x	x	x	x	x
Germany	○	↓	↓	(↓)	↓	↓	↓	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
Czech Republic	○	↓	↓	(↓)	↓	↓	↓	(↓)	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○
Russia	○	↓	↓	○	○	↓	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		↑	○
France	○	↓	↓	(↓)	↓	↓	↓	(↓)	○	○	○	(↓)	○	○	○	○	○	○	○	○	○	○		○
Italy	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	○	○	○	○	○	○	

Source: OECD and UNESCO, 2003; Mullis *et al.*, 2003; author's calculations. Note: below the diagonal line significance (5 percent level) of gender differences in reading is presented for PIRLS 4th graders. Significance above the diagonal line refers to PISA 15 year-olds in reading. Without Bonferroni adjustment.

○ not statistically significant difference
↓ boy's disadvantage (of country in row) significantly smaller than comparison country (column)
↑ boy's disadvantage (of country in row) significantly larger than comparison country (column)
X Country not administered in PISA
◯ Gender differences between countries significant for both surveys

Table A 3.2: Correlation matrix of gender differences in mean achievement

		Reading		Maths		Science	
		PISA	**PIRLS**	**PISA**	**TIMSS**	**PISA**	**TIMSS**
Reading	**PISA**	1					
	PIRLS	**0.645**	1				
Maths	**PISA**	0.588	0.505	1			
	TIMSS	0.311	0.324	**0.587**	1		
Science	**PISA**	0.634	0.346	0.728	0.378	1	
	TIMSS	0.449	0.315	0.581	0.771	**0.558**	1

Source: PISA, TIMSS and PIRLS data; author's calculations. Note: the correlation coefficients refer to all OECD and CEE countries that are mutually covered by both surveys correlated.

Table A 3.3: Gender differences in surveys' mean achievement expressed in years of school progression

	PISA Reading	TIMSS Maths	PISA Maths	TIMSS Science	PISA Science
Albania	**1.0**	na	**0.4**	na	**0.5**
Bulgaria	ns grade diff	ns	ns	no data grade	ns
Czech Republic	**1.8**	**0.5**	ns grade diff	**1.0**	ns
Hungary	**0.9**	ns	ns	**0.8**	ns
Latvia	**1.2**	ns	ns	**0.3**	**0.7**
Lithuania	na	ns	na	**0.3**	na
Macedonia	**1.6**	ns	ns	ns	**0.7**
Moldova	ns	ns	na	ns	na
Poland	no data grade	na	ns	na	ns
Romania	**0.2**	ns	na	ns	**0.2**
Russia	**1.5**	ns	ns	**0.4**	**0.7**
Slovakia	na	ns	na	**0.7**	na
Slovenia	na	ns	na	**0.5**	na
OECD	**0.6**	**0.2**	**0.2**	**0.6**	ns

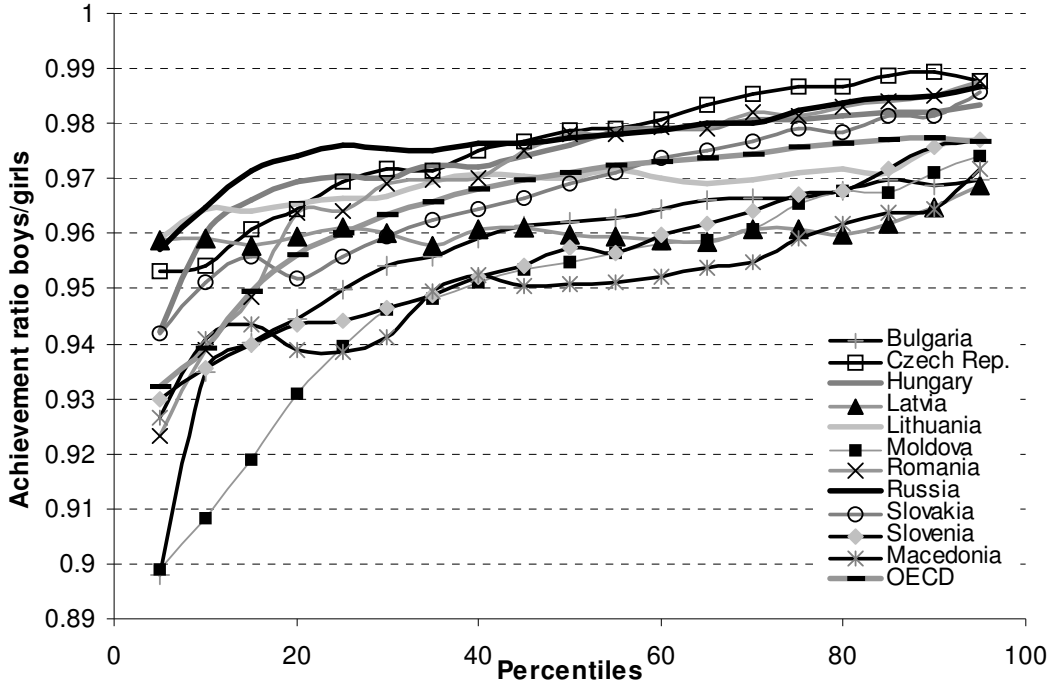
Source: PISA and TIMSS data; author's calculations. Note: numbers show the years of schooling the disadvantage gender is behind the advantaged gender. Light grey fields denote the school progression advantage of girls, dark grey fields that of boys. Years are calculated by dividing gender differences in mean achievement scores by the difference in learning achievement between the lower and upper grade of the country for each survey. 'na' denotes country not administered in survey. 'ns' means that gender differences are not significant. 'ns grade diff' denotes that grade differences in average achievement are not significant. 'no data grade' means that observations of students participating in two comparable grades were too small. Data for TIMSS refers to 1995 (since grade differences can be calculated only for this year). OECD countries for TIMSS are Austria, Denmark, France, Germany, Greece, Norway, Spain, Sweden, Switzerland, USA and the Netherlands. OECD countries for other surveys are those given in Table 3.5. The PIRLS survey is not included since sufficient data on grades were not available.

Table A 3.4: Percentage of pupils below PISA reading level 2 by gender

Absolute measure	PISA reading 15 year-olds		
	Boys	Girls	Ratio boys/girls
Albania	80.60	60.40	1.33
Bulgaria	50.30	29.80	1.69
Czech Rep.	23.60	11.50	2.05
Hungary	27.20	17.90	1.52
Latvia	40.70	20.30	2.00
Macedonia	72.30	52.20	1.39
Poland	30.40	15.90	1.91
Romania	44.20	38.60	1.15
Russia	35.10	19.70	1.78

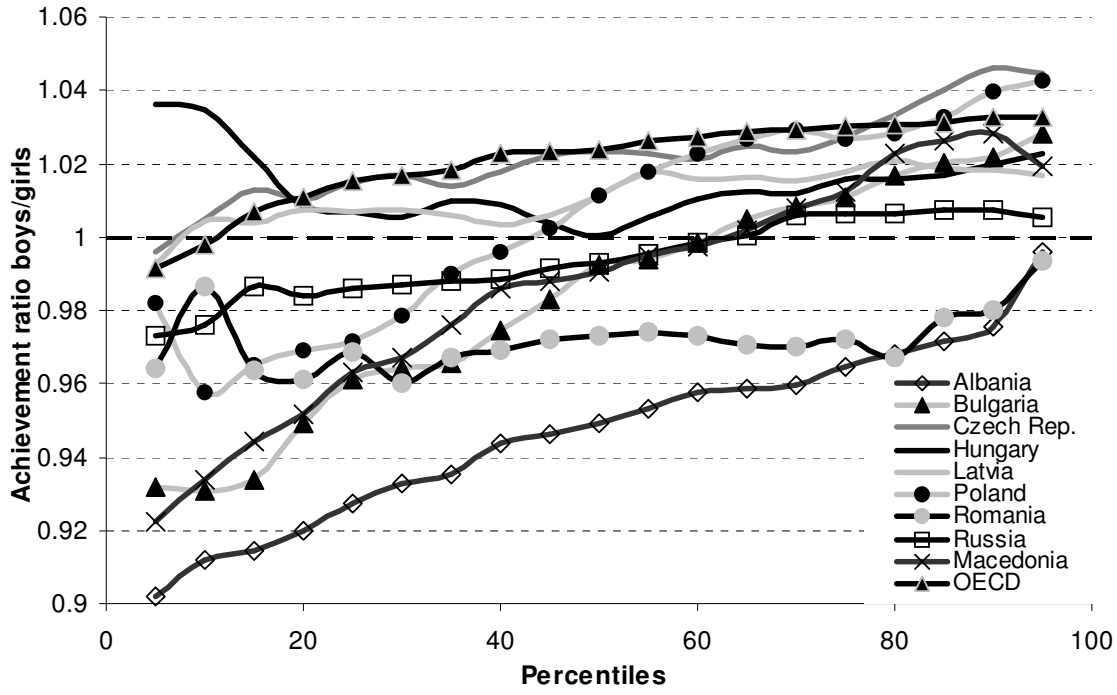
Source: OECD and UNESCO, 2003; author's calculations for PISA + countries (Albania, Bulgaria, Macedonia and Romania).

Figure A 3.1: Boys to girls ratio of achievement scores for each ventile in PIRLS reading



Source: PIRLS data, author's calculations.

Figure A 3.2: Boys to girls ratio of achievement scores for each ventile in PISA maths



Source: PISA data, author's calculations.

3.10.2 Calculation methods used for gender achievement estimates

PISA, TIMSS and PIRLS surveys use a complex sampling design. The calculation of population estimates like mean achievement and percentiles needs to consider the five 'plausible values' (PV) that PISA, TIMSS and PIRLS micro-data provide for each individual. PV are selected at random from an estimated ability distribution of scores that could be reasonably assigned to each individual (see Technical Reports of surveys). In addition, clustering of schools and weighting need to be taken into account in order to avoid an underestimation of standard errors of population estimates.

This Sub-section explains how population estimates and standard errors presented in this Chapter were calculated.

Calculation of mean achievement and percentiles using educational achievement data

Mean achievement of genders and countries were estimated by using the mean of the five PV throughout all surveys. Percentiles were calculated by estimating percentiles for each PV separately and then averaging them across all five PV. This

calculation used for population estimates on average achievement and percentiles complies with the survey organisers' recommendation for data computation.

Calculation of the standard error using educational achievement data

Given the complex sampling design of educational achievement surveys the calculation of standard errors based on an assumption of pure random sampling would produce estimates of these standard errors that are biased downwards. Stratification in the survey design could compensate for this but never completely.

TIMSS and PIRLS organisers provide programmes for calculating standard errors for some analyses using the jackknife method in SPSS. However, the use of the jackknife replication for estimating standard errors in SPSS is time consuming. In addition, PISA organisers do not provide similar programmes. But the comparison of different surveys results undergone in this Chapter is meant to use the same methods for the estimation of population estimates and their standard errors.

Hence, Chapter 3 does not use the programmes provided for TIMSS and PIRLS for the estimation of standard errors, but applies for all survey consistently the Stata 'svy' ('survey') commands. These commands allow for estimation of standard errors in the presence of stratification and clustering where intra-cluster correlation can take a general (and unspecified) form.

The Stata survey (or 'svy') commands were used for the estimation of standard errors of bivariate population estimates for the group of CEE and OECD countries (Table 3.5; the standard errors for countries given in the table were those reported by survey organisers) and for standard errors displayed in Tables 3.8 and 3.10 that display results of OLS regression analyses.

Before using Stata survey commands I checked how results of Stata's 'svyreg' procedure compare to results of other calculation methods for estimating standard errors. For that means, I run a simple OLS regression analysis similar to that used in this Chapter. The explanatory variables include the dummy variables for gender (equal one if boy), mother's and father's education (equal one if at least secondary), and the number of books estimated by the child to be present in the home (continuous variable ranging from 1 to 5).

Table A. 3.5 shows the OLS regression results with TIMSS 1999 data on 8th graders' math achievement. It compares the results of an OLS regression with standard errors estimated (a) assuming pure random sampling i.e. with no allowance for clustering, (b) with the Stata 'svyreg' command that allows for clustering and (c)

with the SPSS program supplied to users by the survey organisers that incorporates the jackknife.

In most cases the jackknifed standard errors tend to be about 20-50 percent larger than those estimated under an assumption of pure random sampling, with those estimated with the Stata svyreg procedure coming somewhere in between. The exception is Canada where the svyreg procedure seems to lead to substantial overshoot, relative to those estimated with the jackknife. With this exception, the broad conclusion from Table A 3.5 is that some caution is needed for the interpretation of standard errors calculated in Tables 3.8 and 3.10 that are based on the svyreg procedure. For example, one would reject the null hypothesis of no gender differences in Finland at the five percent level when using the standard errors from the svyreg procedure, but at only the ten percent level when using the jackknife estimates from the SPSS programme supplied by the survey organisers.

Table A 3.5: Estimates of standard errors of regression coefficients, TIMSS 1999 maths

	Canada	Korea	New Zealand	Finland	Czech Republic
Gender	**5.8**	**7.9**	**- 4.7**	**9.7**	**15.7**
Simple random Stata	(2.8)**	(1.9)***	(3.5)	(3.9)**	(3.6)***
Svy Stata	(2.5)**	(2.6)***	(8.0)	(4.7)**	(4.3)***
Jackknife SPSS	(3.2)*	(3.1)***	(8.4)	(5.4)*	(5.3)***
Mother's edu	**17.1**	**10.5**	**12.6**	**20.2**	**13.8**
Simple random Stata	(5.6)***	(2.7)***	(4.9)**	(5.6)***	(4.5)***
Svy Stata	(3.9)***	(2.8)***	(5.2)**	(6.0)***	(4.4)***
Jackknife SPSS	(8.7)*	(3.4)***	(5.7)**	(8.1)***	(6.7)**
Father's edu	**12.6**	**11.1**	**10.6**	**15.9**	**17.1**
Simple random Stata	(4.7)***	(3.1)***	(4.4)**	(5.0)***	(4.5)***
Svy Stata	(4.9)**	(3.3)***	(4.8)**	(5.2)***	(4.2)***
Jackknife SPSS	(4.5)***	(4.1)***	(5.2)*	(7.6)**	(6.7)***
Books in HH	**8.0**	**21.1**	**23.3**	**11.2**	**17.0**
Simple random Stata	(1.3)***	(0.9)***	(1.5)***	(2.1)***	(2.0)***
Svy Stata	(1.4)***	(0.8)***	(2.0)***	(2.4)***	(2.3)***
Jackknife SPSS	(1.9)***	(1.2)***	(2.2)***	(2.7)***	(2.8)***
Constant	**481.3**	**501.9**	**399.0**	**464.9**	**436.8**
Simple random Stata	(6.9)***	(3.4)***	(6.2)***	(7.4)***	(7.7)***
Svy Stata	(12.2)***	(4.4)***	(9.0)***	(7.2)***	(8.5)***
Jackknife SPSS	(6.7)***	(5.4)***	(10.2)***	(8.8)***	(10.1)***
Observations	5422	5120	2156	1012	2645
R-squared	0.04	0.15	0.13	0.14	0.10

Source: TIMSS data, author's calculations. Note: parameter estimates are given in bold and standard errors estimated with different methods in parenthesis. * significant at 10 percent, ** significant at 5 percent,*** significant at 1 percent. Simple random sample estimation of standard error takes weights into account. Simple random and svy calculations use the mean of the 5 PV. Dependent variable: math achievement; Independent variables: gender (0=girl, 1=boy), mother's edu, father's edu (0= not finished secondary, 1= finished secondary), books (1=0-10 books in household, 2=11-25 books, 3=26-100 books, 4=101-200 books, 5= more than 200 books)

3.10.3 Differences in coding of variables between surveys (Tables 3.8 and 3.10)

Given the different country coverage and varying variables administered by the surveys it was not possible to equalise all variables used for the regression analyses. This Section specifies the differences between surveys in coding of variables that were used for regression analyses.

OECD countries for TIMSS are Australia, Canada, Finland, Italy, Korea, the Netherlands, USA, UK and Belgium; for PISA Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Korea, Netherlands, Norway, Spain, Sweden, Switzerland, UK and USA and for PIRLS France, Germany, Greece, Italy, the Netherlands, Norway, Sweden, USA and UK.

Mother's upper secondary education refers to ISCED levels 3a, 3b, 3c, 4a and 4b for PIRLS (interviewee was not the child but an adult household member). Secondary education refers to ISCED levels 3a, 3b, 3c for PISA and to 'finished secondary' and 'some vocational education'. TIMSS data refers to secondary and not to upper secondary education.

Mother's tertiary education refers to ISCED levels 5a and 5b for PIRLS, to a yes to the question 'Does your mother have tertiary education' in PISA and to 'some university' and 'finished university' for TIMSS.

Regression analysis in Table 3.10 combines the two dummy variables mothers' upper secondary and tertiary education into one.

Single parenthood means for TIMSS and PISA that only one of the following persons live at home with the child: mother, father, female guardian, male guardian. For PIRLS a similar single parenthood variable could not be constructed. Instead, the variable refers for PIRLS to single adult families, where children live only with one adult.

4 The Feminisation of Poverty: Evidence from Subjective Data

4.1 Introduction

After the fall of the iron curtain people's expectation were high that the transition process would lead quickly to similar economic gains enjoyed by their neighbours in Western market economies. However, the transition process proved to be much more costly than expected. Plummeting earnings and increases in income inequality (see Chapter 1) led to an unprecedented rise of serious poverty in Central and Eastern Europe (CEE) during transition.

It is widely believed that the costs of transition were not evenly distributed among the population. The widespread term 'feminisation of poverty' suggests that women were the most vulnerable group during transition and therefore more likely to fall into poverty than their male counterparts.

An increasing feminisation of poverty in transition countries would be of great concern since gender equality in access to resources and their distributions should be an aim of all democracies. Furthermore, recent research (Lundberg *et al*., 1997; Phipps & Burton, 1998) suggests that women's lower access to economic resources leads not only to their own shortage of items and activities but is also related to lower expenditures on children's goods and services.

Hence, even though gender inequality in poverty incidence is an important issue, research on the feminisation of poverty in transition countries is rare probably mainly due to the lack of comparable data. But even the small amount of poverty analysis available is problematic for shedding light on gender differences. Poverty research is generally carried out at the household and not the individual level. Household data lack information on the way individual household members use their financial resources and how goods are distributed within the household. Poverty analyses based on household data assumes therefore that women, men and children in one household are equally poor or rich since the distribution of household resources among the members of the household is practiced in a fair and equal manner. Hence, on the basis of household data necessarily either *all* persons or *no* person in a household are classified as poor since the same poverty incidence for each household member of one household is assumed. This hypothesis is called the 'unitary household assumption'. Recent literature provides evidence, that the assumption of the unitary household is wrong.

The value added of this Chapter is to estimate the feminisation of poverty in transition countries by using subjective data. Hence, it is not the responses of one individual of a household (often the household head) on income or consumption of all household members that are used for the following analysis. In contrast, information of respondents about their own subjective well-being is used to estimate subjective poverty incidence. The subjective poverty measure is not constrained by the unitary household assumption since *individuals'* estimation of their economic welfare is the focal point of the analysis. Using these subjective data the Chapter can add results regarding three guiding research questions: First, is there indeed evidence for a feminisation of poverty in transition countries? Second, is the feminisation of poverty in CEE countries greater than in a benchmark group of OECD countries? Third, do subjective data confirm the hypothesis that the feminisation of poverty increased during the transition process.

Two data sources, the World Value Survey (WVS) with two rounds (1989-1992 and 1995-1997) and the International Social Survey Program (ISSP) with data on 1999, provide information on subjective economic welfare of individuals in 18 transition and 19 OECD countries. Both data sets focus on individuals' satisfaction with the financial situation of their household and their societal position.

The remainder of this Chapter is as follows:

The next Section 4.2 introduces the objective and subjective measurement of poverty and discusses the suitability of the approaches for estimating the feminisation of poverty. Section 4.3 summarises objective gender-related poverty results of the most comprehensive household data on CEE published. The data used for measuring subjective poverty incidence is described in Section 4.4. Section 4.5 aims at discussing the link between income (the main factor used for the objective poverty measure) and subjective well-being in order to discuss briefly how far we can expect different poverty measures to show similar results. In addition, gender differences in subjective well-being conditional on income will be briefly examined. Section 4.6 examines the gender gap in poverty incidence in transition countries and compares it to OECD countries. In addition, gender differences in the impact of population characteristics on the poverty risk are examined. Section 4.7 analyses whether the feminisation of poverty increased during transition. Section 4.8 concludes.

4.2 Objective and subjective measures of the feminisation of poverty

4.2.1 Objective poverty measure and the unitary household assumption

Conventionally a person's economic welfare is measured by the real income or consumption of his or her household adjusted for differences in family size and demographic composition. Those people who fall below a certain income or consumption threshold defined as the poverty line constitute the poor.

Regarding the measure of the feminisation of poverty there are two main problems of this objective poverty measure: the problem of definition (that is inherent also in other measures of poverty) and the problem of the unitary household assumption.

How poverty and the means for measuring poverty are defined may significantly affect differences in group-specific rates of poverty incidence (Atkinson, 1998). The main important problems of definition are threefold.

First, poverty can be defined in terms of *household income* or *household consumption*. Poverty estimates using household income might be biased due to people's reluctance to report income, for example due to tax evasion and income from the informal sector. It is widely accepted to calculate poverty on the consumption level for transition countries. Consumption is generally defined as the sum of expenditures on current purchases plus the value of food produced and consumed by the household. However, estimation of consumptions might also be flawed since people are unlikely to remember their consumption for one year while monthly consumption is subject to a high variety.[103] In addition, consumption will be higher than income in case of borrowing and lower in case of savings (Bradbury *et al*., 2001). Generally, poverty incidence based on consumption levels is lower than that based on income levels.

The choice of an *absolute or relative poverty* line is the second important decision to make. An absolute poverty line is set at a fixed minimum income or consumption level (e.g. 4 $ per capita per day). The relative poverty measure refers to a welfare threshold set at a specific position of the relevant population (e.g. 50 % of the median of the population). Whether absolute or relative poverty is concerned, the implications, focus and intention of the poverty definition is different.

[103] E.g. Luttmer (2000) showed for Russia and Poland that measurement errors due to noisy data have led to an overestimation of poverty in the region.

Third, given *economies of scale*, a two member household does not need double the income of a one member household for enjoying the same living standard. The estimation of this critical elasticity appears difficult, so that one could go from saying that larger households are poorer to the opposite depending on the way one identifies households' economies of scale (Ravallion & Loskhin, 2001). This might impact upon the estimation of poverty for single parent households, predominantly headed by women.

However, regarding the estimation of the feminisation of poverty the greatest problem of the objective measure of poverty is its use of household data that do not give any information on the intra-family division of income or consumption. Hence, the unitary household assumption[104] is obligatory, taking for granted that poverty of one individual is equated with the average poverty of the household to which they belong.[105]

Nevertheless, over the past years a significant number of studies have accumulated in which the hypothesis of the unitary household and its equal income pooling is rejected. Empirical studies examining intra-household distributions show that neglecting the distribution of resources within the household is flawed (Haddad & Kanbur, 1990; Jenkins, 1991; Folbre, 1994; Lundberg *et al.*, 1997; Pradhan & Ravallion, 1998; Cantillon & Nolan, 2001). Theoretical studies on the other hand model the behaviour within families with different bargaining games and show that the conditions required for the existence of a unitary household decision process are very restrictive and hence improbable. (e.g. Dauphin, 2002)

This research shows that different sharing behaviours between individuals in a household determine the income or consumption equality of its members. This is of great importance once gender differences in poverty incidence are concerned. Women and children might be the most vulnerable to unequal treatment because they are probable to lack power in the household.[106] It is therefore the unitary household

[104] Based on this assumption, an assessment of the distribution of poverty by gender involves comparing the proportion of all women who live in households defined as poor with the proportion of all men living in similar households. (Lloyd, 1998)

[105] If this were true policies aimed at reducing poverty would only need to increase the resources of poor households without getting involved into within household poverty reduction that might be difficult to design (Haddad & Kanbur, 1990). However, the British government established a policy impacting upon the distribution of resources within the household, showing quite important impacts on spending behaviour of women and men (Lundberg *et al.*, 1997)

[106] A further problem of the unitary household approach is its assumption that an individual's current household affiliation is given rather than chosen or forced in response to economic circumstances. (Lloyd, 1998)

assumption embedded in household-based measures that obscures gender inequalities (Jenkins, 1991).

Hence, there is a need to shift from household to individual poverty measures for estimating the feminisation of poverty.[107]

4.2.2 The subjective poverty measure

The subjective poverty measures[108] consolidated over the last four decades. In contrast to the objective measure it does not take income levels but individuals' satisfaction as the benchmark for poverty estimations. Hence, even though the subjective poverty measure was not genuinely designed for examining the feminisation of poverty, it offers the individual level of the analysis important for focusing on gender differences in poverty incidence. Researchers using subjective poverty measures argue that equality of well-being is a more desirable objective for poverty policies than equality of income. Satisfaction in well-being or economic welfare is certainly a key target variable of economic policy[109], and is also closely related to individuals' support for the political and economical system.

However, the use of subjective well-being data has met considerable suspicion especially from economists[110]. The most important concern is that individuals 'anchor' their scale at different levels so that interpersonal comparisons of responses are meaningless. Anchoring causes the estimator to be biased as long as it is not random but correlated with explanatory variables. Extrovertism as a factor of personality is frequently quoted as such an unobservable characteristic (Diener *et al.,*

[107] Recent research shows that differences in individual's access to cash are likely to have implications for the economic autonomy of each individual as well as for the distribution of power and influence over decision-making within the household. (Sutherland, 1999; Lundberg *et al.*, 1997). However, women do often rely on men's income, so that again a probable intra-household distribution of income distorts the estimation of gender equality in income.

[108] A third approach for measuring poverty besides the objective and subjective one is the capability approach (Sen, 1997). Monetary measures of poverty fail to capture other important aspects of individual's well-being such as public goods, community resources, social relations, culture, security and the natural environment. A multi-dimensional concept of poverty takes also into account individual's capability to live a healthy life, free of avoidable morbidity, having adequate nourishment, being informed and knowledgeable, being capable of reproduction, enjoying personal security and being able to freely and actively participate in society. Hence, the capability poverty measure enshrines a system of complementary poverty indicators going beyond the pure income measures and meeting therefore a very encompassing definition of poverty.

[109] It is not tested yet whether objectively measured income or consumption have power in explaining subjective measures of welfare; if it does not then many of the polices that are typically promoted in the name of economic development may bring disappointing outcomes in terms of human satisfaction. (Pradhan & Ravallion, 1998)

[110] Regarding this scepticism Ravallion & Lokshin (1999) state: 'It is a paradox that when economists analyze the welfare impacts of policies, they typically assume that people are the best judges of their own welfare, but they resist directly asking people themselves whether they are better off. It is assumed instead that the economist knows the answer on the basis of objective data on income and prices.'

1999) that influences both subjective well-being and socio-economic background variables like employment status.

Hence, using economic well-being data requires using certain assumptions that are not unproblematic.[111] First, it is assumed that people can evaluate their own situation. This assumption is supported by the consistency found among the empirical studies on subjective well-being questions. Second, the subjective measure presupposes that individuals' responses are mutually comparable. Hence, individuals need to interpret different satisfaction labels in the same way and share similar understanding of concepts such as economic well-being and happiness.[112] Since the analysis of this Chapter is based on country comparisons regarding economic well-being a further assumption is that people across different countries and cultures share similar understandings of their well-being. Also this supposition can be discussed controversially[113].

However, a growing literature on subjective well-being (e.g. Frey and Stutzer, 2002; van Praag and Ferrer-i-Carbonell, 2004) shows that subjective well-being data are meaningful also regarding a cross-country perspective. Subjective data have proved to be useful. Measures of subjective well-being can predict the length of life, coronary heart diseases, quitting a job, absenteeism, counter- and non-productive work and the duration of unemployment[114]. More recent research on subjective well-being shows that also external economic factors impact upon subjective well-being. Increasing inflation rates, increasing unemployment, decreasing GDP and lower unemployment benefits are related to people's lower well-being scores. (Di Tella *et al.,* 2001) In addition, research on subjective well-being shows consistent results regarding the impact of explanatory variables like age, health, religious beliefs, income and employment on individuals' subjective satisfaction level.[115]

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[111] A very detailed discussion of the problems inherent in these assumptions can be found in Ferrer-i-Carbonell (2002).

[112] There is some evidence of respondents' equal translation of verbal labels and numeric scales and similar understandings of the meanings 'good' and 'bad' (Ferrer-i-Carbonell, 2002). In addition, research results show in general that gender differences in the estimation of individual's well being are rather small. (Diener *et al*., 1999)

[113] Using latent class techniques Clark *et al.* (2005) model the relationship between income and reported financial well-being for 12 European countries. They argue that individuals transform income into financial satisfaction in different ways questioning thereby the comparability of subjective well-being data across individuals and countries. Nevertheless, the approach used can be questioned in several ways. For example, income is not the only factor impacting upon financial well-being, but also relative income is important. It is also not clear whether results are not driven by respondents' unobservable characteristics that could not be included into the model. An additional important assumption of the paper is that the used income variable measures equally income for each individual across countries.

[114] For a citation of the different studies see Clark & Oswald (2002).

[115] For a citation of studies see Senik (2004).

In summary, even if the use of subjective well-being data requires using assumptions that can be discussed controversially and are difficult to prove, the literature on subjective well-being has shown that these data have great explanatory power regarding economic factors but also individuals' characteristics. In addition, the subjective data offer individual level data that is important for analysing the feminisation of poverty and, hence, overcomes a great limitation of household data used in objective measures of poverty.

It is noteworthy, that the bottom line of this Chapter is to stress the usefulness of the subjective poverty measurement for the examination of gender inequality and hence to use it for the analysis. Nevertheless, as will be discussed in greater detail in the Conclusion of this study, the subjective poverty measure used here is not understood as a poverty measure that should be used instead of the objective measure. On the contrary, the research outlook in Chapter 5 shows the importance to examine results across the range of all poverty indicators available.

Before an introduction to the subjective data used in this analysis, the next Section summarises results on the feminisation of poverty in CEE countries based on the objective measure of poverty using household data.

4.3 Evidence on the feminisation of poverty in transition countries based on household data

Evidence on the feminisation of poverty derives predominantly from objective measures ideally based on consumption data estimated from household surveys. Since the unitary household assumption has been rejected in recent literature, it needs to be doubted whether household data can shed light on the feminisation of poverty for the whole population since information on within household distribution of resources is missing. Nevertheless, objective poverty measures can be used for estimating poverty incidence between different *households* with gender specific characteristics (without applying the unitary household assumption). For example, household data make it possible to investigate whether female- or male-headed households are poorer. However, the level of such an analysis is the *household* and not the individual.

Table 4.1, based on the most comprehensive objective data on poverty for transition countries available currently, presents the poverty risk of households by household head, single parenthood and single elderly household. The poverty risk is defined as the percentage of poor households who are classified to be poor on the

basis of a relative poverty line set at 50 percent of the median income/consumption[116] of a country. Calculations are based on household data collected at the end of the 90s[117].

The most general classification of households with gender-specific characteristics regards female and male household heads. In general female-headed households are those where women are the main and often only breadwinners in the family, like single parent families or households of divorced, elderly or single women living alone. Research results so far show that female headed households have a higher poverty risk than other households in transition countries. (Milanovic, 1998; Ladanyi and Szelenyi, 2000; Gassmann and de Neubourg, 2000; World Bank, 2000a).

Table 4.1 confirms this general trend and indicates that the poverty risk of female headed households is highest in those countries that are situated in South-Eastern Europe, Western CIS, the Caucasus and Central Asia. With the exception of the Czech Republic and Lithuania where about 5 percent more households with a female than a male household head are living in poverty, gender differences in the poverty incidence are only marginal in Central Europe and the Baltic States.[118] There is a slight trend that differences in poverty risks between male and female headed households are greatest in these countries, where the general poverty rate is highest (Grootaert & Braithwaite, 1998). The extent of female headed households' risk is great. In Russia every fourth female-headed household faces poverty in comparison to about every sixth male-headed household. In Georgia, Azerbaijan, Tajikistan, Ukraine and Bulgaria differences in gender-specific poverty risk lie between 7 and 5 per cent points. Surprisingly, in the Czech Republic female headed households face an about two and a half times higher risk of falling into poverty than their male counterparts.[119]

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[116] For most of the contries, the poverty measures are consumption-based (World Bank, 2002, p. 368).
[117] The household's consumption is defined as the sum of expenditures on current purchase plus the value of food produced and consumed by the households.
[118] These differences are probably related to the advancement of transition and the capabilities of countries to smoothen the transitional influence for the population. For example, transition in Central Asia is not very successful, countries in South-eastern Europe are much more advanced in implementing a market system, while in Central Europe transition seems to be mainly over (see Figure 1.1. in Chapter 1). Central Europe encountered transitional problems therefore earlier, while they yet did only slightly occur in Central Asia. Grootaert & Braithwaite (1998) showed that poverty in FSU countries is not well defined, since it is only slightly correlated with the nature of labour market participation of household members and the lack of formal labour ties. In Central Europe, however, poverty can be largely explained by these two factors.
[119] Surprising is that in the countries Kazakhstan, Turkmenistan and Macedonia male and not female-headed households face a greater poverty risk. This might be due to a distortion of data results, since in these countries the sample size of female headed households is very low. Additionally, the presented data are not controlled for other factors that might be positively correlated with both, female household head and a lower poverty incidence (see Falkingham (2000) who found that the gender of the household head was only then significantly related to poverty in Central Asia once it was taken into

Grootaert & Braithwaite (1998) showed for some countries in Eastern Europe and former Soviet Union (FSU)[120] that the higher poverty incidence of female headed households remained if it was controlled for education and age.

Also the focus on households of single parents is important (though not very transparent[121]) for describing women's poverty incidence since in the most predominant part of these family types mothers take care of their children. In addition, in transition countries the number of children being raised in single parent families increased over time (Lokshin *et al*., 2000), which indicates the importance of the poverty incidence predominant in these households in terms of child well-being. The low earning capacity of single women with children, only inadequate support from non custodial fathers[122] and a low level of state support are the main reasons determining poverty of single-mother households. Table 4.1 presents the risk of poverty for single parent households compared to other households with children. Again, in almost all countries, a higher percentage of single parent households are living below the poverty line. In the Czech Republic, single parent households seem to fare worse, since differences between those and other households with children are biggest in this country where poverty incidence is on average quite low. However, in general countries are very heterogeneous regarding differences of poverty incidence between single parent and other households with children and there is no clear regional pattern visible.

Although it is controversially discussed whether pensioners have a relatively favourable position during transition (World Bank, 2000a; Milanovic, 1998) or not (Mitev *et al*., 2000; Ladanyi and Szelenyi, 2000), literature shows some evidence that retired women in single households are more likely to live in poverty than retired men. [123] Milanovic (1998), Szulc (2000) and Grootaert and Braithwaite (1998) show for Russia, Poland, Bulgaria and Hungary that the poverty risk for female-headed households rises with age, while elderly males have a lower proneness of being poor.

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account that female-headed households are associated with factors with a lower risk of poverty, like a small household size, older age structure and urban areas).

[120] The countries were Poland, Hungary, Bulgaria, Kyrgyz Republic, Russia and Estonia.

[121] Even if it is mainly women heading single-parent families, policies are not mainly attributed to women but to children. It might be therefore the sufficiency of the safety net for families with children that is reported in the figures above.

[122] E.g. despite high divorce rates, alimony in Russia contributes only to a small portion to the total household income. Its share does not exceed 5 per cent. (Lokshin *et al.*, 2000)

[123] Given the much greater elderly female risk for living in poverty, it has been hypothesised though not shown that the driving force behind the feminisation of poverty might be predominantly the longer life expectancy of women. (Mitev *et al.*, 2000; González de la Rocha and Grinspun, 2001)

Table 4.1: Poverty risk of different households with gender-specific characteristics

	Household head			Households with children			Single elderly households		
	Male	Female	Diff.	Single Parent	Others	Diff.	Male	Female	Diff.
Central Europe									
Czech	2.2	7.4	**5.2**	21.1	2.1	**19**	2.4	1.0	-1.4
Slovenia	6.2	7.0	**0.8**	7.4	6.2	**1.2**	7.4	7.1	-0.3
Poland	10.7	11.1	**0.4**	21.3	14	**7.3**	2.9	3.6	**0.7**
Hungary	6.1	6	-0.1	10.5	9.2	**1.3**	4.0	4.7	**0.7**
Former Yugoslavia									
Croatia	6.3	9.6	**3.3**	4.4	5.2	-0.8	10.8	21.0	**10.2**
Macedonia	17.6	9.5	-8.1	15.3	19.5	-4.2	16.2	1.9	-14.3
Baltic States									
Estonia	9.4	9.9	**0.5**						
Latvia	10	12.1	**2.1**	13.2	13.7	-0.5	9.5	9.3	-0.2
Lithuania	8	13.1	**5.1**	21	11.9	**9.1**	8.0	14.3	**6.3**
South Eastern Europe									
Albania	4.1	7.9	**3.8**	13	5.3	**7.7**	0.0	7.6	**7.6**
Bulgaria	10.7	15.9	**5.2**	11.5	12.1	-0.6	15.3	21.2	**5.9**
Romania	7.1	10.8	**3.7**	15.3	10.1	**5.2**	6.9	8.9	**2.0**
Western CIS									
Belarus	5.3	7	**1.7**	11.7	6.7	**5**	6.9	12.5	**5.6**
Moldova	14	14.4	**0.4**	13.1	15.1	-2	6.8	19.2	**12.4**
Russia	17	27.4	**10.4**	28.1	17.6	**10.5**	13.4	30.6	**17.2**
Ukraine	9.2	14.8	**5.6**	9.1	11.2	-2.1	21.1	25.8	**4.7**
Caucasus									
Armenia	9.2	12.5	**3.3**	18.8	10.6	**8.2**	5.9	14.9	**9.0**
Azerbaijan	11.7	18.7	**7**	14.9	13.5	**1.4**			
Georgia	14.8	22.5	**7.7**	23.4	18.8	**4.6**	24.6	16.8	-7.8
Central Asia									
Kazakhstan	15.0	13.4	-1.6	17.6	15.5	**2.1**	33.3	18.3	-15.0
Kyrgyzstan	16.6	18.7	**2.1**	11.7	18.2	-6.5	7.1	14.5	**7.4**
Tajikistan	10.0	15.8	**5.8**	24.5	10.9	**13.6**	0.0	0.0	0.0
Turkmenistan	18.2	13.7	- 4.5	4.7	18.5	-13.8	0.0	3.1	**3.1**

Source: World Bank, 2000a. Note: calculations are based on a relative poverty line set at 50 percent of the median income/comsumption taking into account economies of scale[124] with Θ=.75. Percentage shown presents share of poor households with gender-specific characteristics. Bold figures of gender differences are those that are positive, indicating a higher poverty risk for females. Data refer to the following years: 1999 for Azerbaijan, Tajikistan, Lithuania, Armenia (also 1998) and Belarus; 1998 for Russia, Romania, Croatia, Latvia (also 1997), Slovenia (also 1997), Estonia, Poland, Turkmenistan; 1997 for Georgia (also 1996), Bulgaria, Kyrgyz Republic, Moldova, Hungary; 1996 for Ukraine, Czech Republic, Albania, Kazakhstan and Macedonia.

[124] The consumption of households is here adjusted for differences in family size with the equaltion: equalvalent size= household size^Θ. An elasticity size Θ of 0.75 has been proved to be a relatively good fitting instrument for adjusting poverty levels in transition countries (World Bank, 2000a).

This is confirmed by data given in Table 4.1. In about two thirds of all transition countries, households of single elderly females face a higher poverty risk than their male counterparts.

While single elderly female households in Central Europe are only slightly poorer than their male counterparts, there is a clear and partly great gender difference in poverty risk between single elderly male and female households in Western CIS and South Eastern Europe. 12 percent points more households headed by single elderly females than males are living in poverty in Moldova and it is even 17 percent points in Russia.

Given the great rural population share, highly traditionally and religiously societal patterns and relative low economic development, one might assume that gender differences of households headed by elderly females and males are pronounced in the Caucasus and Central Asia. Indeed, this is the case for Armenia and Kyrgyzstan, however, in Georgia elderly female households are even better off than those of elderly males.

In summary, the objective measure of poverty provides evidence that households with female household heads are poorer than other households in many transition countries. Once it is focused on gender differences in poverty incidence between the whole female and male population of countries by using the individual subjective poverty measure we might also expect to find a greater poverty incidence of women. The first guiding research question for the following analysis is therefore:

1. Are women poorer than men in transition countries?

Are gender inequalities observed high or low? Is women's disadvantage in transition countries 'special' and might be therefore attributable to the transition process? In order to estimate the extent of gender inequalities in transition countries, figures on women's disadvantage can be compared first over time or second with other countries. However, there is a lack of literature doing so. First, comprehensive and comparable data over time for transition countries are often not available. Second, most of the research on poverty incidence focuses predominantly on transition countries. As discussed in the Introduction, in this Study a benchmark group of OECD countries is generally used for discussing the extent of gender inequalities in transition countries. The second guiding research question of this Chapter is therefore:

2. Is the feminisation of poverty higher in CEE than in Western industrialised countries?

Given the lack of comprehensive objective data on poverty incidence a further empirical question of interest is whether the feminisation of poverty increased over time. The predominant part of the literature assumes that the feminisation of poverty is not an inheritance of communism but resulted from the transition process (see Introduction). However, this assumption is generally not based on data comparable over time. A third guiding research question of this Chapter is therefore:

3) Did the feminisation of poverty increase during the transition process?

The use of subjective data allows the estimation of gender differences in poverty incidence for countries' whole population and to compare women's disadvantage regarding poverty between transition and OECD countries and across time. Hence, the research questions will be examined by using data on individuals' subjective well-being that will be introduced in the next Section.

4.4 Data

Two different data sources are used for examining the guiding research questions:

The societal position question (International Social Survey Program[125])

The first survey used to measure gender inequality in subjective well-being is the 1999 round of the International Social Survey Program (ISSP). The Introduction described already the ISSP survey. (The 1999 data were not used in previous Chapters: Chapter 1 included ISSP data from 1997 (Figure 1.11) and Chapter 2 focused on ISSP data from 1988, 1991, 1994 and 1998). Table 4.2 displays that ISSP 1999 covers only a small selection of post-communist countries with Bulgaria, Russia, five Central European countries and one Baltic State. Information on countries in the Caucasus or Central Asia is not available. In each country a sample of approximately 1000 respondents was questioned on a range of topics of current concern. Table A 4.1 in the Appendix presents details of overall response rates and fieldwork methods.

In all of the countries in the East, face-to-face interviews were used to obtain information from respondents. In contrast, in the West the main source of collecting information was mail surveys. Not surprisingly, the response rate for mail surveys is generally lower than that for face-to-face interviews. In Bulgaria, Portugal, Slovakia and Spain response rates are over 80 percent. Austria, Germany, Hungary, Japan, Latvia, New Zealand, Norway, Poland, Russia, Slovenia and Sweden have response

[125] For details see: www.gesis.org.

rates of between 50 and 80 per cent. In Australia, the Czech Republic and the USA the response rate is between 40 to 50 percent and hence considerably low. I exclude the Canadian and French sample where only 20 percent of survey participants responded.

The following question is used for examining gender inequality in well-being:

'In our society, there are groups that are towards the top and groups that are towards the bottom. Where would you put yourself on this scale?'

1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
At the bottom								*At the top*	

In contrast to household data, this question focuses on the *individual*'s own welfare and not the welfare of the household. Financial status is an important explanation for individuals' estimation of their societal position (see Section 4.5). However, additionally social class, education, profession and individuals' moving context over time are likely to impact upon response behaviour. The societal position question (SPQ) therefore covers what could be considered as a multidimensional concept of subjective well-being.

A very different measure of subjective well-being derives from the World Value Survey that covers more transition countries than ISSP data and offers additionally cross-sectional data for two different time points.

The financial satisfaction question (World Value Survey[126])

The World Value Survey (WVS) provides data on economic welfare for the 18 transition countries listed in Table 4.2 and 16 OECD countries. In contrast to ISSP data, the WVS covers also countries in the Caucasus with Armenia, Azerbaijan and Georgia as well as a greater set of CIS countries and South-eastern Europe. In addition, for 8 transition countries cross-sectional data are available for two time points, one at the beginning of the transition process (1989-1992 – second round) and one in the middle of the 1990s (1995-1997 – third round of the WVS).[127]

Country surveys were carried out through face to face interviews. However, data quality of the World Value survey is concerning since information on the

[126] For details see http://www.worldvaluessurvey.org/.

collection of data is not transparent. The data description of both rounds does not contain information on response rates by country but provides only the average survey response rate of 71 percent across participating countries for the second round. In addition, the organisers' description of the data states that data from low income countries might over sample the urban areas and the more educated strata. This could lead to an overestimation of respondents' satisfaction especially in the Caucasus and CIS, so that results need to be interpreted with caution.

The following question of the WVS forms the basis for the following analyses of subjective well-being:

'How satisfied are you with the financial situation of your household?'

1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Not at all satisfied									*Very satisfied*

The advantage of the financial satisfaction question – later on referred to as FSQ - is the quite clearly defined financial dimension. Hence, this question can complement the measurement of SPQ that comprises a more multidimensional definition of subjective well-being. In contrast to SPQ, the FSQ question refers to the financial situation of the *household* and NOT of the individual. This does not necessarily mean that all household members would answer this question equally. On the contrary, in case of unequal distribution of household resources it is quite possible that those household members who receive a smaller share are not as satisfied with the financial situation of the household as those who enjoy a higher share of resources. Individuals who are disadvantaged in the household might think that even if the financial situation of the household is not bad it should be better because their smaller share in resources would then be more satisfactory.

However, in contrast to household data both questions, the SPQ and FSQ, estimate subjective economic well-being with individuals' own perception of their own societal position or their households' economic well-being. This provides the individual level data needed in order to examine the feminisation of poverty in transition countries.

[127] The examination of gender differences in the following Sections is based on data from the most recent WVS round.

Table 4.2: Countries covered in WVS and ISSP and sample size

	WVS		ISSP
	1989-1992	1995-1997	1999
Armenia	-	2,000	-
Azerbaijan	-	2,002	-
Belarus	1,015	2,092	-
Bulgaria	1,034	1,072	1,102
Czech	930	-	1,834
Estonia	1,008	1,021	-
Georgia	-	2,593	-
Hungary	999	-	1,208
Latvia	903	1,200	1,100
Lithuania	1,000	1,009	-
Macedonia	-	995	-
Moldova	-	984	-
Poland	938	1,153	1,135
Romania	1,103	-	-
Russia	1,961	2,040	1,705
Slovakia	466	-	1,082
Slovenia	1,035	1,007	1,006
Ukraine	-	2,811	-

4.5 Subjective well-being, gender and household income

Before the examination of gender differences in subjective well-being this Section aims at discussing briefly two questions of general interest for the following analyses: 1. In how far are repondents' subjective well-being estimates related to their household income? 2. Do genders estimate their well-being differently?

4.5.1 The association between subjective well-being and household income

The association between income and views of economic well-being is relevant because it can shed light on differences in poverty estimation deriving from the subjective and objective measure of poverty (the latter using predominantly household income as the basis for estimating poverty incidence). Literature generally indicates that people in poorer countries estimate their well-being as lower than those in richer countries and that within countries those people with higher income express higher subjective well-being than people with lower income (Senik, 2004). Nevertheless, there exist relatively large differences between objective and subjective poverty measures (Lokshin and Ravallion, 2000). In general objective socio-economic and

demographic variables[128] explain only somewhere between 8 and 20 per cent of an individual's subjective well-being.

The association between subjective well- being and household income can be estimated crudely with ISSP and WVS data that just include one question on respondents' household income. The variable that captures individuals' household income is differently administered in both surveys.

In the ISSP data (SPQ) the question on household income was asked differently in different countries. In general, income was measured by people's estimates of their household income before taxes in their country's currency. Direct comparability of household incomes across countries is therefore problematic. For each country I categorised incomes into 10 different levels of the distribution of all sampled individuals in a country; the higher the level the higher is the individual's household income.

In the WVS data (FSQ) people were asked the following question:

'Here is a scale of incomes. We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, before taxes and other deductions.

A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10'*

Hence, for both data surveys a categorical family income variable is available or can be constructed that ranges from 1 to 10, whereby a higher value indicates a greater household income.

In order to estimate the impact of household income on subjective well-being I used a logistic regression model. The dependent dummy variable was set to 1 if individuals estimated themselves below level 4 of the SPQ or FSQ scale (the choice of this level will be explained later on in Section 4.6); otherwise it was set to 0. I assume that the probability of low subjective well-being levels is a function of household income (and gender as will be discussed later on)[129]. Logistic regressions

[128] Especially the following factors were found to determine respondent's financial satisfaction (Kahneman *et al*., 1999): i) Not absolute income but subjective perception of income determines respondents' estimations. ii) Welfare varies inversely with the incomes of others; hence whether the individuals' neighbourhood is rich or not impacts upon the individuals' estimation. iii) Respondents' own situation in the past is important. (Ferrer-i-Carbonell, 2002). iv) Respondents' general happiness influences their financial happiness (whereby this association might be endogenous).

[129] For testing that I run a nonparametric regression with satisfaction levels as dependent and household levels as explanatory variables. The nonparametric regression results indicate a linear relationship between the both variables for all regions and genders with one exception: for SPP I find for men in OECD countries a slightly u-shaped curve indicating that males in the middle of the household income

were run separately for regions. Table 4.3 shows the results. Figures 4.1 and 4.2 present these results transformed into individuals' predicted probabilities indicating the likelihood that respondents' estimated their position below rank 4 of the SPQ or FSQ scale conditional on household income.

As expected the table and both figures show that the higher respondents' household income, the lower is their predicted probability to estimate their position below rank 4 (significant at the 0.1 percent level). In OECD countries, people's predicated probability ranges from about 0.05 (highest income group) to 0.20 (lowest income group) and in transition countries from 0.20 to 0.60 for both questions, SPQ and FSQ. Hence, compared to the industrialised West living in a transition country increases the risk of low subjective well-being by 15 percent if people are situated in the top and by almost 40 percent if they are in the bottom of the countries' income distribution. This large regional gap in economic well-being indicates probably lower GDP per capita in transition countries as well as people's negative experiences with the shortcomings of the transition period. The greater variation of poverty risk by family income in transition compared to OECD countries points towards the trend that the association between satisfaction and income is greater for countries with low levels of poverty. Studies on subjective data support the view, that an increase of income considerably enhances well-being until a certain threshold level, after which further increases of income do not lead any more to substantial improvements (Kahneman *et al.*, 1999).[130]

However, even though household income is highly significant it is not a 'good' predictor of subjective well-being. Given Table 4.3 only about 4 percent of the variance in subjective economic-wellbeing can be explained by household income (R^2 is around twice as high once country dummies are introduced into the model). This indicates that results of objective and subjective poverty measures will differ considerably (at least unconditional on other respondents' background characteristics). Nevertheless, on average across countries about 50 percent of respondents estimating their position to be below level 4 are also situated in the lowest three levels of households' income (author's calculation) regarding both questions on subjective well-being. Using this perspective, discrepancies between objective and subjective poverty measures seem to be less pronounced.

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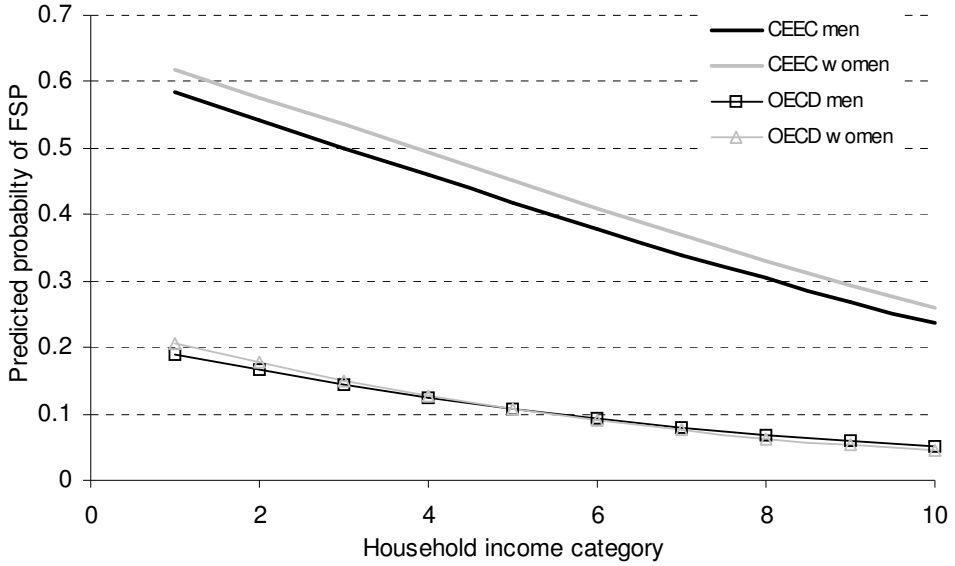
distribution estimate their societal position poverty even worse than those at the bottom of the distribution.

Table 4.3: Logistic regression results with dependent dummy variable set to 1 if respondents are below level 4 on the SPQ or FSQ scale

	SPQ		FSQ	
	CEE countries	OECD countries	CEE countries	OECD countries
Family income	-0.161	-0.204	-0.172	-0.190
	(0.007)***	(0.013)***	(0.004)***	(0.007)***
Female	0.034	-0.199	0.147	0.057
	(0.044)	(0.074)***	(0.024)***	(0.039)
Constant	0.278	-0.993	0.614	-1.245
	(0.050)***	(0.080)***	(0.028)***	(0.041)***
Observations	9525	7711	29066	26528
Pseudo R-squared	0.04	0.05	0.04	0.04
log-lklhd	-6057.21	-2685.77	-19190.05	-9126.45

Source: WVS 1989-1992, 1995-1997; ISSP 1999; author's calculations. Note: eight transition and seven OECD countries covered with ISSP data (SPQ) and 17 transition and 11 OECD countries covered with WVS data (FSQ). Standard error in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%

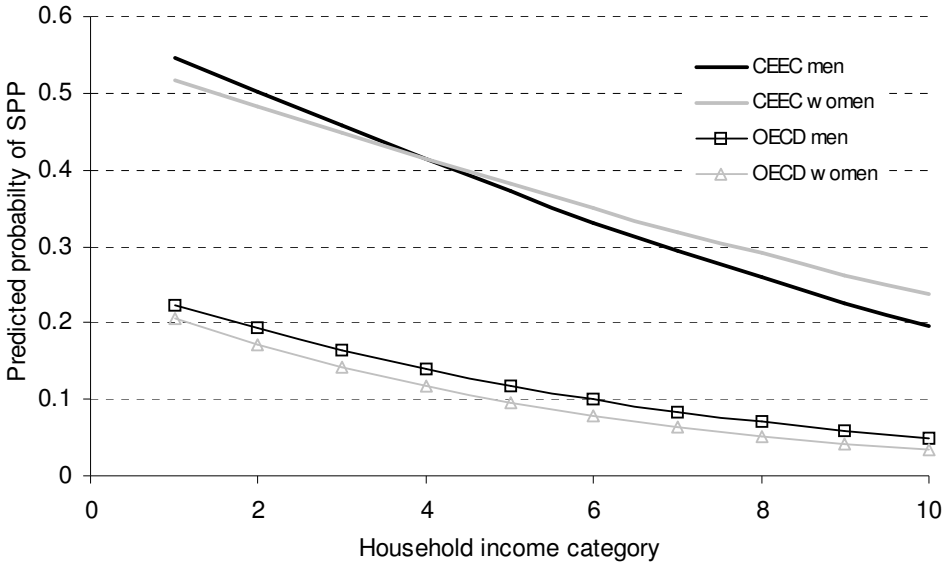
Figure 4.1: Probability to be below level 4 of the FSQ scale by gender and region conditional on household income



Source: WVS 1989-92 and 1995-1997, author's calculations. Note: the figure shows the predicted probability of individuals to group themselves on the lowest three positions on a scale of 10 regarding their financial household satisfaction. The predicted probabilities were estimated on the basis of logistic regression results presented in Table 4.3.

[130] Regarding FSP it is a quite interesting result, that the explanatory power of earning is not higher than respondents acceptance of the political system or respondents' assessed possibility to take influence on the direction of their life. (author's own results)

Figure 4.2: Probability to be below level 4 of the SPQ scale by gender and region conditional on household income



Source: ISSP 1999, author's calculations. Note: the figure shows the predicted probability of individuals to group themselves on the lowest three levels on a scale of 10 regarding their societal position. The predicted probabilities were estimated on the basis of logistic regression results presented in Table 4.8.

4.5.2 Do genders estimate their well-being differently?

A presumption of the following analysis is that women and men have a similar understanding of concepts such as welfare, well-being and happiness and estimate therefore their financial satisfaction and societal position similarly. However, it might be argued that women and men are different in their perceptions and their judgement of their well-being. If this were true, gender differences in subjective poverty incidence would not reflect 'real' differences in poverty incidence *per se* but would mirror lower subjective well-being for that gender that has a greater inclination to judge more negatively than the other. (Theoretically, such different response behaviour between women and men might be attributed to 'natural' gender differences, like women's or men's 'biological predispositions' of being inclined to judge situations differently.) In general, there are not many possibilities to reject views of gender-related 'biological predispositions' and it is not the aim of this Section to do so.

However, it is interesting to examine whether genders estimate their subjective well-being similarly if their household income is comparable. As discussed above, an equal household income of women and men does not necessarily imply that both genders have also access to equal shares of this income. Hence, gender differences in

subjective well-being conditional on household income might reflect different sharing behaviour of income resources within a household. Nevertheless, it is of interest whether there are really gender differences in well-being between genders once household income is controlled for.

Table 4.3 shows the before discussed logistic regression analysis including a dummy variable on gender. Out of 4 regressions (for both subjective well-being variables and regions) the gender dummy (1 for females, 0 for males) was in two regressions not significant and in one regression positively and in one regression negatively related to respondents' estimation of their financial satisfaction or societal position scale. Hence, there is no consistent pattern that one gender judges differently about its well-being than the other conditional on household income (and unconditional on other individuals' background factors). Figures 4.1 and 4.2 reveal additionally that compared to regional differences, gender discrepancies in individuals' predicted probabilities to be below level 4 of the FSQ and SPQ scales are rather small if significant. In CEE countries women have an about 3 percent point higher risk of estimating their position below level 4 than men if household income is held constant. However, regarding the societal position scale men in CEE are more likely to judge their societal position poverty to be worse than women in similarly poor households as long as the focus is on lower household income deciles. (However, the trend reverses in highest family income categories so that the gender dummy is insignificant as shown in Table 4.3.) In OECD countries gender is not significant for financial satisfaction well-being but men have an about 5 percent higher probability to be below level 4 on the societal position scale.

Hence, these results do not indicate that there is an obvious and consistent pattern that one gender tends to judge differently on subjective well-being than the other.

4.6 Are women subjectively poorer than men in transition countries and compared to OECD countries?

This Section aims at examining the first two guiding research questions whether 1) women are poorer then men in transition countries and 2) the feminisation of poverty is higher in CEE than in Western industrialised countries.

Sub-section 4.6.1 starts with simple descriptive analyses comparing the distribution of respondents on the subjective well-being scales and percentages of the subjective poor (to be defined in this Section) between countries and regions.

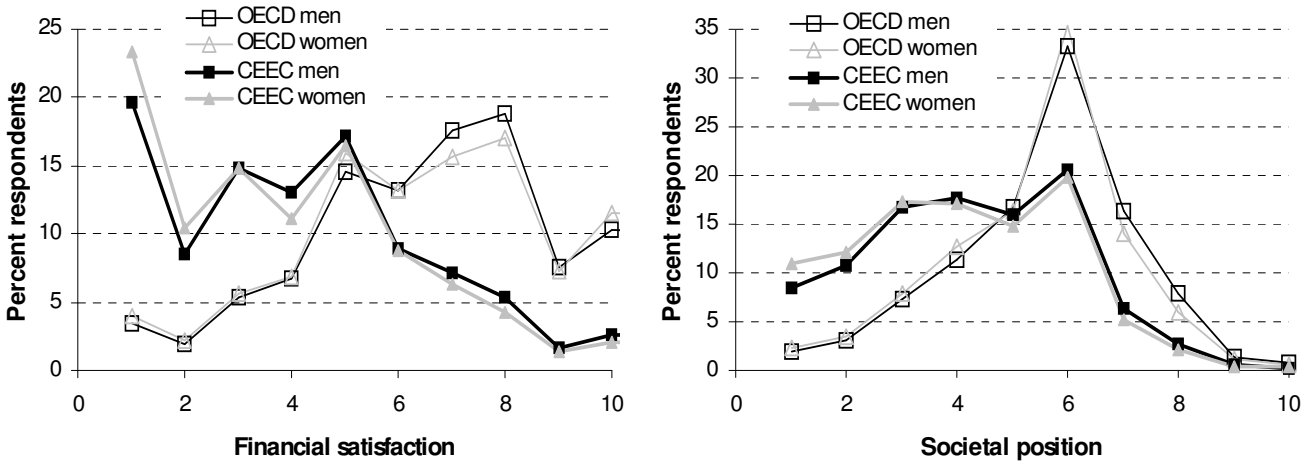
Section 4.6.2 uses a multivariate analysis in order to compare the gender impact on poverty once regional characteristics are held constant. In addition, gender-

differences in the impact of population characteristics on poverty incidence are examined.

4.6.1 Gender differences in subjective well-being in transition and OECD countries

Figure 4.3 displays the percentage of female and male respondents at each point of the societal position and financial satisfaction scale by region and gender. The respondents' distribution in OECD countries shows a negative skew for financial satisfaction and a rather symmetric distribution regarding the societal position poverty. This indicates a generally high financial satisfaction paired with a great middle class and an equally small share of the lower and upper class in Western industrialised countries.

Figure 4.3: Percent of respondents on each scale of the societal position and financial satisfaction by region and gender



Source: ISSP 1999, WVS 1995-1997, author's calculations. Note: graphs give the percentage of respondents in each level of the societal position and financial satisfaction scale. For FSQ CEE countries are Armenia, Azerbaijan, Belarus, Bulgaria, Czech Rep., Estonia, Georgia, Latvia, Lithuania, Macedonia, Moldova, Poland, Russia, Slovakia, Slovenia and Ukraine. OECD countries for FSQ are Australia, Austria, Canada, Finland, France, Germany, Japan, Mexico, Norway, Spain, Sweden, Switzerland, UK and USA. For SPQ transition countries are Bulgaria, Czech Republic, Hungary, Latvia, Poland, Russia, Slovenia and Slovakia and OECD countries are Australia, Austria, Germany, Norway, Portugal, Spain, Sweden and USA. Values refer to the unweighted countries' average.

On the contrary, in transition countries respondents' distributions are skewed to the right for both measures. A high percentage of people estimating their households' financial situation as unsatisfactory is paired with the predominant part of the population estimating their societal position to be low. Every fourth person living in transition countries is not at all satisfied with the financial situation of the household (lowest level 1). This compares to only 4 percent of the population in

OECD countries. About 10 percent of respondents in transition but only 2 percent of respondents in OECD countries estimate their position to be at the bottom end of the society.

Gender differences are much smaller than regional discrepancies. In CEE, gender discrepancies are slightly greater among those at the bottom of the distribution while a similar trend is not visible for Western industrialised countries.

Up to now the distribution of respondents across the whole satisfaction scale was discussed. However, most concerning is the position of those respondents who estimate their societal position or their financial satisfaction to be at the bottom of the distribution. These respondents are not at all satisfied with their financial situation of their household (FSQ) or they attribute themselves to the bottom group of the society (SPQ). As discussed above, the SPQ can be considered to cover a multidimensional concept of subjective well-being and the FSQ addresses the financial dimension of subjective well-being (Section 4.4). Hence, in this Chapter, people at low levels on the SPQ and FSQ scale are therefore defined as having low subjective well-being and are consequently called the 'subjectively poor'.

In order to examine subjective poverty rates and their gender differences between countries it is necessary to collapse the subjective well-being variables into a subjective not poor/ subjective poor dichotomy. This implies the necessity to set a poverty line on the FSQ and SPQ scale. However, at which point of the SPQ and FSQ scale can we assume that subjective well-being is very low? Figure 4.3 indicates that the scale point 3 is a 'turning point' for both, the financial satisfaction and societal position scale, regarding gender differences in the percent of respondents: the female percent of respondents is higher or equal to that of men up to scale score 3 but generally lower above scale 3. One possibility is therefore to define those as poor who estimate their satisfaction or economic well-being to be below 4 on the scale from 1 to 10. Such a threshold allows estimating a maximum of gender differences in poverty rates for CEE countries. Nevertheless, it is noteworthy that the 'turning point' for OECD countries that serve as a benchmark comparison group is situated considerably above 3 with a scale score of 6 or 7.

However, it is obvious that the choice of the critical scale score that divides between poor and not-poor is rather arbitrary. This might also explain why there does not exist a general consent about such a critical value in the literature that uses a great variety of subjective well-being questions with differing numbers of levels across scales. For example, Kalugina and Najman (2002) interpret those with a score below 3

(based on a 9 level scale), Ferrer-i-Carbonell and Van Praag (2001) those with a score below 4 and Winkelmann and Winkelmann (1998) those with a score below 5 (both latter authors with a question based on a 10 level scale) to be the poor.

If I had chosen to use the scale point 3 instead of 4 as critical value then the countries' poverty rate would have been lower, with a scale point of 5 it would have been higher than the results presented in the following. It is therefore important to stress, that it is not the poverty rates and gender differences as such but countries' ranking regarding gender differences in poverty incidence that is of interest in this Chapter.

A further consideration regarding the choice of the poverty line is important: the result on whether women or men are poorer should not depend on where the poverty line is set. For example, it might be that women are only poorer than men for the critical value of 4, but men might be poorer than women if the poverty line is set at 6. In this case, the choice of the poverty line would determine the result whether a feminisation of poverty exists. Nevertheless, ideally results on women's higher poverty incidence need to be robust no matter where the poverty line is set. A tool for checking robustness of results is the 'First-Order Stochastic Dominance Condition' (Ravallion, 1994). The first-order dominance condition is fulfilled if the cumulative percentage of women exceeds the corresponding cumulative percentage of men for all 10 levels of the societal position and financial satisfaction scale. Only in this case we can be sure that women are poorer than men, no matter what the critical value is. Figure A 4.1 in the Appendix presents the curve of the cumulative percent of respondents for each societal position and financial satisfaction scale level by region and gender. Indeed, for the societal position scale for both regions and for the financial satisfaction scale for transition countries the curve of women is everywhere above that for men. Hence poverty is higher for women than men independent of the choice of the critical value. Regarding the financial satisfaction scale for OECD countries, the curves intersect at a quite high scale level of 8, so that also for this measure and region a change of the threshold from 3 to 4 or 5 would still result in a higher share of women at the bottom of the distribution.

By using this poverty line dividing people below level 4 from those at or above level 4 Figures 4.4 and 4.5 show the percentage of the poor for the financial satisfaction and the societal position poverty for transition countries (black bars) and OECD countries (grey bars). Not surprisingly, there is a clear regional pattern showing that financial satisfaction and societal position poverty is greatly higher in

transition than in OECD countries. In almost half of the transition countries covered more than 50 percent of the population judge their financial situation of the household to be dissatisfying. In addition, more than 50 percent of the population in Bulgaria and Russia estimate their societal position to be very low. This compares to OECD countries, where on average only about 12 percent of respondents are poor on the financial satisfaction scale and 15 percent on the societal position scale.

However, transition countries are not homogenous regarding their subjective poverty incidence. While more than 60 percent of the population are dissatisfied with their financial situation in the Ukraine, Moldova and Georgia less than 30 percent are poor on the same scale in the Czech Republic, Hungary and Slovenia. The percentage of the societal position poor differs between 56 (Bulgaria) and 19 percent points (Slovenia) for transition countries.

Do both surveys agree regarding countries' rank in poverty incidence?[131] Research results suggest that satisfaction is related to external economic factors (Di Tella *et al.*, 2001; Frey and Stutzer, 2002). In addition, satisfaction with one's societal position is related to income as well as income is related to the satisfaction with the financial situation of the household. Hence, we would expect an agreement of countries' rank on poverty incidence between both surveys. Indeed, the Spearman rank correlation coefficient between the proportion of the societal position and the financial satisfaction poor for 19 transition and OECD countries covered by both surveys is relatively high with 0.73.

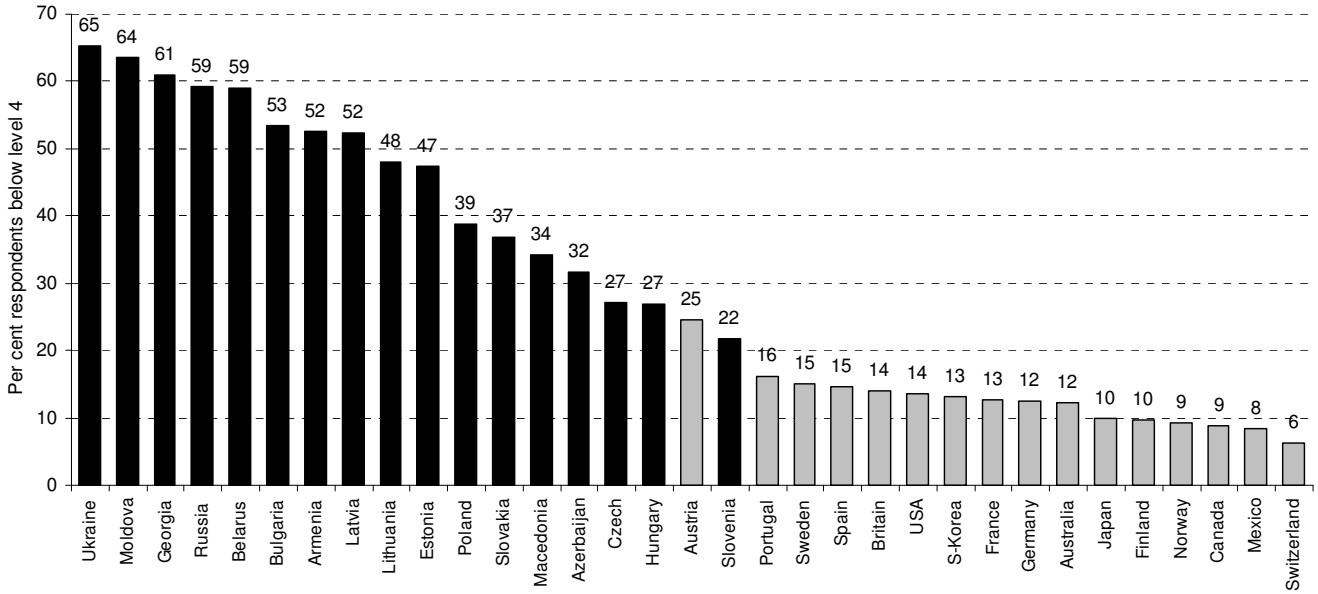
In how far do women differ from men regarding their subjective poverty incidence? Table 4.4 presents the poverty rate in percent by gender, country and region. The subjective poverty rate gives the number of female (male) poor expressed as a share of the total female (male) population. Figures printed bold indicate that gender and poverty are significantly (at least 5 percent level) associated.

The comparison of OECD with CEE countries shows, that in post-communist countries 5 percent points more women and in OECD countries about 2 percent points more women than men live in poverty given both measures of subjective welfare. For both regions gender is significantly associated with poverty (1 percent level for FSQ and 2 percent level for SPQ)[132]. Hence, in transition as well as in OECD countries

[131] Since the choice of the poverty line determines the proportion of the poor population the interest of this Chapter is not in the comparison of proportions between measures but in the ranks of countries regarding poverty.
[132] This result derives from the χ^2-test.

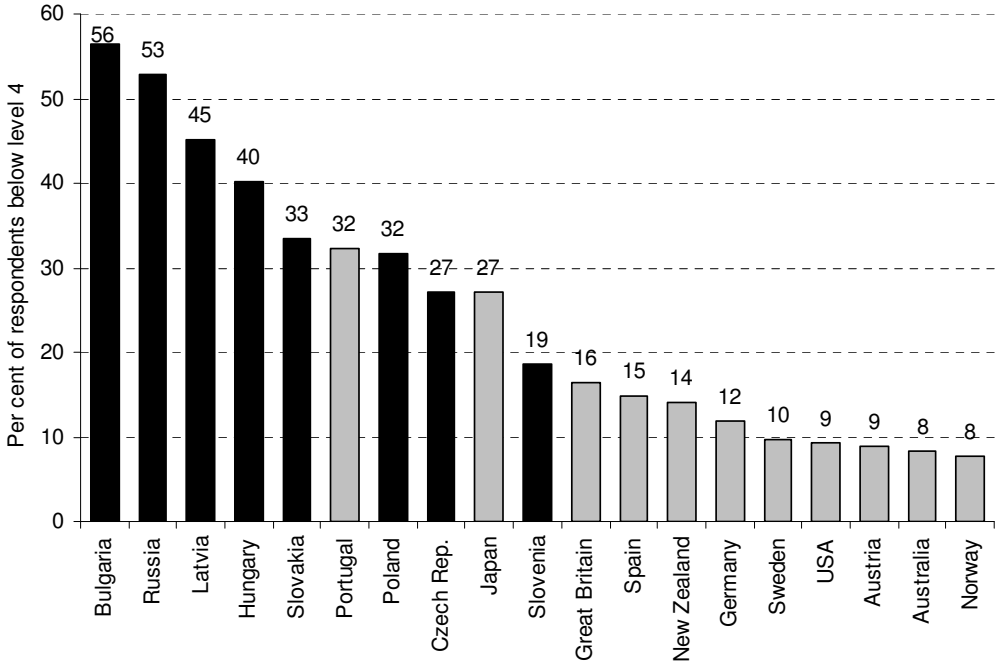
exists a feminisation of poverty, but gender differences are twice as high in post-communist countries compared to the industrialised West.

Figure 4.4: Percent respondents below level 4 of the financial satisfaction scale



Source: WVS, author's calculations

Figure 4.5: Percent of respondents below level 4 of the societal position scale



Source: ISSP 1999, author's calculations

CEE countries differ greatly regarding the female poverty rate. In the Ukraine and Moldova almost three of four women situate themselves below the threshold of 4 on the financial satisfaction scale. On the contrary, the lowest poverty rate for women is 24 percent in Slovenia. On average, as many as 47 percent of women in transition countries are poor, while it is only 13 percent in the industrialised West. Besides the large regional difference in women's poverty rate, regions also vary in terms of their divergence[133]. The standard deviation of female poverty incidence is 14.9 for transition and 4.9 for Western industrialised countries.

Table 4.4: Subjective poverty rate (in percent) by gender, country and region

	Financial situation poor			Societal position poor		
	Female	**Male**	**Difference**	**Female**	**Male**	**Difference**
Latvia	57.3	47.3	**10.1**	47.1	43.3	**3.8**
Moldova	68.2	59.1	**9.1**			
Georgia	65.6	56.5	**9.0**			
Ukraine	69.0	61.3	**7.8**			
Slovakia	40.8	33.0	**7.7**	33.0	33.9	-0.9
Belarus	62.4	55.5	**6.9**			
Russia	62.1	56.2	**5.9**	55.9	49.6	**6.3**
Hungary	29.7	24.1	**5.6**	44.6	35.8	**8.8**
Poland	41.5	35.9	**5.6**	33.9	29.5	**4.3**
Slovenia	24.2	19.3	**4.9**	19.2	18.1	1.1
Macedonia	35.5	32.9	2.6			
Armenia	53.5	51.4	2.1			
Lithuania	48.9	47.0	1.9			
Estonia	48.3	46.4	1.8			
Czech	27.6	26.6	1.0	31.7	22.6	**9.1**
Azerbaijan	31.7	31.5	0.2			
Bulgaria	53.2	53.7	-0.5	57.5	55.2	2.4
CEE countries	47.3	42.5	**4.8**	40.4	36.0	**4.4**
OECD countries	12.7	11.3	**1.4**	15.6	13.6	**2.0**

Source: ISSP and WVS, author's calculations. Note: countries are ordered by gender differences in regarding FSQ poverty. Figures printed bold indicate that there is a significant association between gender and poverty at the 5 percent level (estimations derive from the $\chi 2$ test). For OECD and CEE countries included in regional average see note to Figure 4.3. $\chi 2$ values show a significant association between gender and poverty at the 1 percent level for CEE and OECD countries (FSQ) and 2 percent level for OECD (SPQ). Numbers give the unweighted regional average.

ISSP data on societal position poverty covers only a small number of transition countries. However, also here differences between post-communist countries are

[133] The great regional variation in transition countries is not surprising given that subjective well-being is closely related to countries' economic development (Fahey *et al.*, 2003) that differs largely between transition countries.

great. More than half of the female population in Russia and Bulgaria are poor regarding their societal position, while the rate is again lowest in Slovenia with less than 20 percent. On average, 40 percent of women in the transition countries (standard deviation is 13.2) covered by ISSP are poor which compares to only 16 percent (standard deviation is 8.1) in OECD countries.

Hence, we find a very pronounced female poverty incidence in transition countries that is much greater than that present in OECD countries. However, how does this compare to men's poverty incidence?

With none of the poverty measures and in none of the CEE countries for which data are available do men fare significantly worse than women regarding their poverty incidence. But in 10 out of 17 (FSQ) and 5 out of 8 transition countries (SPQ) more women than men live in poverty and this association is significant at the 5 percent level. This indicates that for both subjective measures there is a clear feminisation of poverty in transition countries.

However, countries differ greatly in the extent of the gender difference in poverty rate. In Latvia, Moldova and Georgia gender differences in the poverty rate are greater than 9 percent points regarding the financial satisfaction question. About 7 out of 10 women compared to 6 out of 10 men are poor in Moldova and Georgia. This gender difference in Latvia, Moldova and Georgia is almost as great as the overall poverty rate in OECD countries.

In the other countries where gender and poverty are significantly associated, gender differences are around 5 percent points. Surprisingly, in very poor countries like Macedonia, Azerbaijan and Armenia gender and poverty are not significantly associated.

Two Central European countries, the Czech Republic and Hungary, show greatest gender differences in societal position poverty rates: in both countries 9 percent points more women than men estimate their societal position to be below the threshold defined here as the poverty line. Given that in both countries poverty rates are relatively low compared to other transition countries, high gender differences in the poverty rate are related to a high poverty share of women. In the Czech Republic almost 60 percent of the societal position poor are women (compared to 40 percent of men); the figure is 55 percent for Hungary (figures not given in the table).

In Russia, the gender difference in the societal position poverty rate is 6 percent points; in Latvia (the country with highest differences regarding the financial

situation) the difference of the societal position poverty rate is 4 percent points and in Bulgaria does not appear a significant association between gender and poverty.

It was discussed above, that agreement on countries' rank regarding their poverty rates is high between both measures of subjective well-being. Do surveys also agree in regard to gender differences in the poverty rate? Expectations regarding agreement should not be too high, because similar ranking on gender *differences* of two diverse questions on subjective well-being is more difficult to achieve than consent on countries' rank regarding absolute levels of poverty. Country ranks of both measures reflect countries' development and this might explain the quite high correlation found. However, gender differences in subjective well-being might be much more dependent on the subjective measure used and their determinants cannot be so easily observed. For example, women might estimate their societal position to be low due to e.g. unemployment and low education, but still they might have satisfying access to resources in case the financial situation of the household and the distribution of resources are acceptable given their partner's higher income. Differences in the poverty incidence between female and male headed households are not necessarily similar to differences in subjective poverty between females and males in the population. Hence, the extent of gender inequality might differ for one country depending on what dimension of poverty (e.g. at the household level, financial satisfaction poverty etc.) is concerned. Consequently, it might be argued that it is not sensible to even look for agreement between two different poverty measures across countries. However, it is noteworthy that literature uses different indicators for measuring gender inequality. It is therefore an empirical question as to whether results of these measures are robust regarding the indicators used. In addition, it could be argued that those countries with very high levels of gender inequality rank consistently badly whatever measure of gender inequality is used while countries with low levels manage to minimise females' disadvantage throughout different dimensions of poverty.

For estimating the agreement between poverty measures, I estimate the Spearman rank order coefficient between different data sources: gender differences in poverty rates (SPQ and FSQ; given in Table 4.4 for CEE countries) and the percent point difference of poor households with gender-specific characteristics derived from objective data of the World Bank (given in Table 4.1). Table A 4.2 in the Appendix presents the results. The number of countries covered by two different measures is

partly very small, with just 7 common countries for objective data and SPQ, 15 common countries for objective data and FSQ and 19 countries for SPQ with FSQ.

The rank correlation of gender differences in poverty rates of subjective data (given in Table 4.4) is relatively low with a Spearman's correlation coefficient of 0.13 indicating that there is rather no agreement between both subjective poverty measures once gender inequality is concerned. This result derives partly from the outlier position of Slovakia and the Czech Republic. In the Czech Republic women are as satisfied as men with the financial situation of the household but once they have to judge on their societal position they are much more negative than their male counterparts.[134] It is the other way round in Slovakia.

Agreement between the objective poverty measure giving differences in absolute poverty incidence between female and male household heads and both subjective measures is also quite low. Nevertheless, a surprisingly high agreement between surveys (but doubtable due to the low number of 7 common observations) is found between an objective poverty measure (percent point difference between single parents and other households with children living in poverty) and the subjective measure of societal position with a Spearman's correlation coefficient of 0.79. On the other hand, this objective measure is negatively correlated (-0.35) with the subjective measure of financial satisfaction poverty. It is important to note, that also the correlations between purely objective data measures is not great given the highest correlation coefficient of 0.49 regarding differences in poverty incidence between female and male headed households and single parent's greater poverty risk. (see Table A 4.2)

The low agreement regarding countries' ranking on gender differences in poverty incidence between measures indicates that results are very much dependent on the poverty measure used. This confirms what was discussed above: gender differences in societal position are not similar to gender differences in financial satisfaction. And gender differences in subjective well-being are not similar to gender-differences in objective poverty outcomes. This indicates the necessity of a multidimensional view of gender differences in poverty incidence (see discussion in Chapter 5).

[134] Once I omit Slovakia and the Czech Republic and calculate the Spearman's correlation coefficient on the basis of the 17 remaining countries it is higher (but still not great) with 0.32.

4.6.2 Multivariate results on the feminisation of poverty

Can the application of multivariate analysis add any information to the descriptive results on the feminisation of poverty discussed up to now? Not necessarily as Ravallion (1996) states:

> *'The usefulness of poverty profiles[135] is not positively related to the degree of their sophistication. Controls in a multivariate model may actually be irrelevant to policy problems. An unconditional poverty profile would be a better guide.'*

Controlling for people's characteristics in a multivariate setting might disguise important factors and mechanism underlying poverty incidence. The poor have generally lower chances to gain human capital that helps to move out of poverty. For example, it is widely discussed that women have lower chances to reach high level professions than men. One reason for that is discrimination. This gender-specific hierarchical segregation of the labour market impacts upon gender inequality in poverty incidence, since people in lower prestigious professions earn less than those in high level positions. Hence, gender differences in population characteristics lead to gender differences in poverty incidence. Using multivariate analysis and hence controlling for these gender differences in population characteristics (like profession) will disguise underlying mechanisms that lead to poverty.

However, even though multivariate analysis might conceal factors that determine poverty incidence it offers important tools for comparing gender inequality in addition to the descriptive analysis.

For example, Falkingham (2000) only found a significant relation between female household heads and poverty in Central Asia once it was controlled for factors that are associated with female headed households but also with a lower risk of poverty, like a small household size, an older age structure and urban areas. Hence, multivariate analysis can reveal important poverty risks of population groups that pure descriptive analysis cannot reflect.

Furthermore, once regions are compared a control for population characteristics is sensible. Transition countries are different from OECD countries regarding the population structure. This might impact upon regional differences in gender inequality of poverty incidence. In Sub-section 4.6.2.1 I will therefore

compare the regional impact of gender on poverty incidence once it is controlled for a set of population characteristics in a multivariate framework.

In addition, the poor have lower possibilities to use their human resources for getting out of poverty. For example, data on the gender pay gap indicate that women with similar education to men earn less than their male counterparts. Hence, gender differences in the impact of population characteristics are an important factor for explaining gender differences in poverty incidence. By applying a logistic regression framework I will estimate gender differences in the impact of population characteristics on poverty incidence in transition countries in Sub-section 4.6.2.2.

4.6.2.1 Regional gender differences in poverty incidence

This Section aims at comparing the relative importance of gender for the probability of living in subjective poverty in CEE and OECD countries conditional on regional population characteristics.

I assume that the probability for an individual (i) to live in subjective poverty is determined according to the following model:

$$P(Pov_i) = F(\beta_0 + \beta_1 G_i + \beta_2 D_i + \beta_3 R_i + \beta_4 O_i + \beta_5 E_i + \beta_6 ES_i + \beta_7 A_i + \beta_8 Y_i + \beta_9 YF_i)$$

Pov refers to living in societal position or financial satisfaction poverty. I use explanatory variables (x) that are generally related to poverty incidence: G refers to respondents' gender and D to demographic status. R regards people's religious affiliation. O captures respondents' occupation, E denotes their education, ES the employment status and A the urban or rural area respondents' live in. In the later analysis on changes in poverty incidence over time (Section 4.7) additionally the explanatory variables Y for the year the data was collected and YF as an interaction variable between G and Y will be part of the model.

The functional form adopted for p is the logit given by: $p = 1/(1 + (\exp(-\beta x))$

As an aid to judging the importance of the estimated parameter I will use the following equation:

$$\frac{dp}{dx}_j = p(1-p)\beta_j$$

[135] Poverty profiles are analytical tools that summarise poverty related information.

where x_j is the *j*th element of the explanatory variables in our model. Thus, at $\hat{p} = 0.5$ [136] (the maximum value of the expression) the estimated effect on the predicted probability of a unit change in a continuous variable, or the turning on of a dummy variable, is approximately equal to $\hat{\beta}_j / 4$.

Table 4.5: Variables used and their coding

Explanatory variables			
	Term in equation	Used variables	Coding of variables
Pov	Poverty *dependent variable*	Societal position or financial satisfaction poverty	1=respondents in the lowest 3 levels, 0=otherwise
G	Gender	Gender of the respondent	0=male, 1=female
D	Demography	Age	Metric
		Single	*Control group*
		Married	1=married, 0=otherwise
		Widow / widower	1=widow/widower, 0=otherwise
		Divorced or separated	1 = divorced or separated, 0 = otherwise
R	Religious affiliation	Attending services	Metric (1 more than once a week, .. 6 (SPQ)/7(FSQ) never)
O	Occupation	Unskilled worker	*Control group*
		Middle level positions	0=other, 1= in middle level position
		Professional	0=other, 1= professional
E	Education	Primary education	*Control group*
		Secondary education	secondary, 0=other
		Tertiary education	1=Some or completed tertiary, 0=other
ES	Employment status	Full employed	*Control group*
		Retired	1 = retired, 0 = otherwise
		Unemployed	1 = unemployed, 0 = otherwise
		Part-time employed	1=part time employed, 0=otherwise
		Not in labour force	1=not in labour force, 0=otherwise
A	Area	Rural	1= rural, 0= urban or sub-urban
Year	Year	Given only for financial satisfaction poverty	1= 1995-1997 (round 3), 0= 1989-1992 (round 2)
YG	Interaction female year	Year*Gender	1= female in 1995-1997

Results are obtained from maximum likelihood estimation of the probability for living below level 4 of the SPQ or FSQ scale by using a logistic regression.

Table 4.5 describes the variables and their coding.

Given the very different set of countries that are covered by ISSP and WVS data I include all countries for that information on explanatory variables were

[136] Setting $\hat{p} = 0.5$ is sensible for transition countries with high poverty incidence. However, in OECD countries a value for $\hat{p} \cong 0.1$ would be more sensible. The estimation of $\hat{\beta}_j / 4$ should be used as an aid to interpret coefficients for CEE but not for OECD countries.

available in the model. I use dummy variables for each country in order to account for country fixed effects. Summary statistics of the variables for the pooled country groups is presented in Table A 4.3 for both surveys (see Appendix).

Table 4.6 displays the logistic regression results for both measures of subjective poverty by focusing separately on the sample of transition and OECD countries. The dependent binary variable takes the value 1 if people rank below level 4 on the financial satisfaction (first two columns) or the societal position scale (last two columns). The benchmark person is a single male with primary education occupied in an unskilled profession, who is full-time employed and lives in an urban area. For both poverty measures similarly, Australia is the benchmark country for the OECD sample and Poland for the CEE sample.

The β-coefficients of the control variables show the expected direction for both regions. In line with literature (Winkelmann and Winkelmann, 1998) unemployment has the greatest impact on subjective poverty incidence in all four regression models increasing the probability of being poor by around 20 percent (e.g. $\beta_j/4=0.818/4$) consistently for both measures in CEE if p is set to 0.5.

The higher education and profession the lower is the probability of being poor. Being older or a pensioner, being divorced or a widow/widower is significantly related to a higher poverty risk in both regions. Married people are less probable of being poor in OECD but not in transition countries given FSQ and SPQ results.

What do the regression results reveal regarding differences in the feminisation of poverty? In contrast to descriptive results, women in the West do not have any more a significantly higher probability of being subjectively poor conditional on individual characteristics. This result is consistent for measures, the financial satisfaction poverty and the societal position poverty. However, even if controlled for background characteristics women in the East have an about 5 per cent point ($\beta_j/4=0.183/4$) higher probability of being among the financial satisfaction poor and a 3 per cent point higher risk of societal position poverty than men if we set p=0.5. These gender differences are significant at the 0.1 per cent level.

Hence, if observed population characteristics are controlled for, the transition countries show a significant feminisation of poverty expressed in women's higher risk of being subjectively poor. These gender discrepancies are special for transition countries, since there does not appear an equal pattern of the feminisation of poverty in Western European countries. Nevertheless, the gender coefficient appears to be rather small once compared to coefficients of country dummy variables (see Table A

4.4) or those of education and unemployment. This indicates that while gender is significant for explaining poverty incidence, not surprisingly other factors have a greater significant impact on poverty risk.

Table 4.6: Logistic regression results by region with dependent dummy variable set to 1 if respondents are below level 4 on the SPQ and FSQ scale

	Financial satisfaction poverty		Societal position poverty	
	OECD countries	CEE countries	OECD countries	CEE countries
Female	**0.003**	**0.183**	**0.081**	**0.137**
	(0.054)	**(0.032)*** **	**(0.063)**	**(0.049)*** **
Age	0.064	0.054	0.026	0.070
	(0.010)***	(0.006)***	(0.011)**	(0.009)***
Age^2	-0.001	-0.001	-0.000	-0.001
	(0.000)***	(0.000)***	(0.000)**	(0.000)***
Married	-0.347	0.025	-0.424	-0.130
	(0.068)***	(0.047)	(0.087)***	(0.083)
Divorced/separated	0.805	0.488	0.241	0.410
	(0.091)***	(0.074)***	(0.118)**	(0.107)***
Widow / widower	0.270	0.309	0.000	0.295
	(0.124)**	(0.072)***	(0.138)	(0.112)***
Religious degree	0.089	0.048	0.070	0.035
	(0.014)***	(0.009)***	(0.019)***	(0.017)**
Secondary education	-0.105	-0.417	-0.734	-0.452
	(0.080)	(0.053)***	(0.077)***	(0.061)***
Tertiary education	-0.238	-0.699	-1.649	-0.957
	(0.107)**	(0.068)***	(0.116)***	(0.087)***
Professional	-0.184	-0.266	-1.278	-0.793
	(0.083)**	(0.058)***	(0.107)***	(0.080)***
Skilled worker	-0.197	-0.078	-0.478	-0.325
	(0.065)***	(0.037)**	(0.072)***	(0.064)***
Retired	0.643	0.253	0.273	0.445
	(0.099)***	(0.058)***	(0.110)**	(0.084)***
Not in labour force	0.408	-0.062	0.527	0.176
	(0.082)***	(0.066)	(0.086)***	(0.087)**
Unemployed	1.105	0.743	0.818	1.068
	(0.093)***	(0.059)***	(0.121)***	(0.083)***
Part-time employed	0.217	0.023	0.140	0.213
	(0.087)**	(0.067)	(0.104)	(0.113)*
Rural area	-0.057	0.041	0.454	0.265
	(0.054)	(0.033)	(0.067)***	(0.051)***
Constant	-3.338	-1.618	-1.375	-2.494
	(0.257)***	(0.143)***	(0.282)***	(0.227)***
Observations	17310	20326	12294	9757
Pseudo R-squared	0.06	0.09	0.13	0.15
log-lklhd	-5904.29	-12795.77	-4213.03	-5514.10

Source: ISSP and WVS, author's calculations. Note: standard errors in parentheses, * significant at 10; ** significant at 5, *** significant at 1 percent. Data for countries refer to the most recent round of the WVS. Countries included in CEE and OECD country group for FSQ and SPQ are the same as those given in the note to Figure 4.3 with the exception that Hungary is not included in the FSQ CEE country group due to missing data on family background. It is controlled for country fixed effects by dummy variables (results given in the Appendix in Table A 4.4).

As discussed above, the use of multivariate analysis can disguise gender difference in poverty incidence since it controls also for differences between the sexes in population characteristics. Those latter differences, however, are likely to impact upon poverty incidence. Hence, how far do results reported in Table 4.6 differ from unconditional results? Table A 4.5 reports gender coefficient of a logistic regression model without taking individual background into account. Indeed, the unconditional gender coefficient is higher than the conditional one for both measures and regions indicating that gender differences in poverty incidence in the population are partly

driven by gender differences in population characteristics. In addition, unconditional results show similarly to Table 4.4 that women in OECD countries fare also significantly worse than their male counterparts even though their disadvantage is lower than that women experience in transition countries.

4.6.2.2 Gender differences in the impact of population characteristics

Women might have lower possibilities to use their human resources for avoiding poverty as data on the gender pay gap indicate. This Section examines gender differences in the impact of population characteristics on the probability to be subjectively poor by using a similar logistic regression model as above but this time run separately for the female and male sample. The analysis is restricted to transition countries.

Table 4.7 gives the results of the regression analysis for some of the explanatory variables (for the remainder of results see Table A 4.6 in the Appendix). In order to compare the different impact of explanatory variables for women and men, Table 4.7 displays additionally gender differences in the β-coefficients of the explanatory variables with their standard errors. Bold printed differences are significant at the 1 percent level.

Unemployed women fare better regarding their poverty risk than men. They have an about 10 percent lower financial satisfaction (-0.389/4) and an about 13 percent lower societal position poverty probability than unemployed men (set p=0.5) conditional on other background characteristics. A probable explanation is that unemployed women have greater access to resources from other sources (like husband, family) than men. In addition, given predominant patriarchal family values on men's role as main breadwinner in transition countries (see Chapter 2) men who cannot support a household with their own income might feel much more dissatisfied with their economic position than women who are greatly believed to be mainly responsible for the household and child upbringing. A similar explanation might apply to men's higher probability of living in societal position poverty compared to women (significant only at the 10 percent level) if they are part-time employed.

Regarding financial satisfaction poverty, where sample sizes are about two times higher than for societal position poverty, tertiary educated women have an about 10 percent higher risk than their male counterparts to be poor. While the probability of being poor declines for men with tertiary education by about 22 percent compared to the benchmark person (some primary education) it falls only by 13 percent for highly

educated women (if p=0.5). A similar gender difference in the reduced probability of poverty results from coefficients for secondary education and also for the impact of education regarding SPQ; however these trends appear not to be significant.

Table 4.7: Logistic regression results by gender with dependent dummy variable set to 1 if respondents are below level 4 on the SPQ and FSQ scale in transition countries

	Financial satisfaction poverty			Societal position poverty		
	Men	Women	Difference	Men	Women	Difference
Age	0.046	0.059	0.013	0.052	0.080	0.028
	(0.010)***	(0.008)***	(0.013)	(0.015)***	(0.012)***	(0.019)
Age2	-0.000	-0.001	-0.001	-0.000	-0.001	-0.001
	(0.000)***	(0.000)***	(0.000)	(0.000)**	(0.000)***	(0.000)
Married	0.172	-0.069	**-0.241**	-0.107	-0.084	0.023
	(0.071)**	(0.064)	**(0.096)*** **	(0.122)	(0.118)	(0.170)
Divorced/separated	0.620	0.382	-0.238	0.246	0.536	0.290
	(0.125)***	(0.094)***	(0.156)	(0.169)	(0.143)***	(0.221)
Widow / widower	0.534	0.181	**-0.353**	0.155	0.407	0.252
	(0.142)***	(0.088)**	**(0.167)*** **	(0.193)	(0.145)***	(0.241)
Religious degree	0.054	0.049	-0.005	0.019	0.044	0.025
	(0.014)***	(0.013)***	(0.019)	(0.027)	(0.022)**	(0.035)
Secondary education	-0.492	-0.353	0.139	-0.517	-0.387	0.130
	(0.080)***	(0.071)***	(0.107)	(0.092)***	(0.083)***	(0.124)
Tertiary education	-0.905	-0.525	**0.380**	-1.055	-0.861	0.194
	(0.104)***	(0.092)***	**(0.139)*** **	(0.132)***	(0.116)***	(0.176)
Professional	-0.266	-0.294	-0.028	-0.858	-0.772	0.086
	(0.087)***	(0.079)***	(0.118)	(0.124)***	(0.109)***	(0.165)
Skilled worker	-0.064	-0.109	-0.045	-0.338	-0.302	0.036
	(0.054)	(0.051)**	(0.074)	(0.091)***	(0.092)***	(0.129)
Retired	0.358	0.168	-0.190	0.445	0.408	-0.037
	(0.092)***	(0.075)**	(0.119)	(0.132)***	(0.111)***	(0.172)
Not in labour force	-0.168	-0.048	0.120	0.143	0.177	0.034
	(0.162)	(0.076)	(0.179)	(0.151)	(0.108)	(0.186)
Unemployed	0.928	0.539	**-0.389**	1.340	0.809	**-0.531**
	(0.081)***	(0.086)***	**(0.118)*** **	(0.122)***	(0.117)***	**(0.169)*** **
Part-time employed	0.063	-0.003	-0.066	0.431	0.036	**-0.395**
	(0.115)	(0.083)	(0.142)	(0.174)**	(0.150)	**(0.230)* **
Rural area	0.048	0.035	-0.013	0.383	0.151	**-0.232**
	(0.049)	(0.044)	(0.066)	(0.076)***	(0.070)**	**(0.103)*** **
Constant	-1.464	-1.549	-0.085	-2.073	-2.644	-0.571
	(0.221)***	(0.190)***	(0.291)	(0.340)***	(0.305)***	(0.457)
Observations	9234	11092		4481	5276	
Pseudo R-squared	0.09	0.08		0.16	0.15	
log-lklhd	-5737.95	-7028.57		-2448.59	-3049.70	

Source: ISSP and WVS, author's calculations. Note: standard errors in parentheses, * significant at 10; ** significant at 5; *** significant at 1 percent. Bold printed coefficients show significant differences in the impact of the explanatory variable. Countries included in CEE and OECD country group for FSQ and SPQ are the same as those given in the note to Figure 4.3 with the exception that Hungary is not included in the FSQ CEE country group due to missing data on family background. It is controlled for country fixed effects by dummy variables (results given in Table A 4.6 in the Appendix).

Married men and widowers[137] are more likely to situate themselves in the lower third of the financial satisfaction scale. However, a similar trend cannot be found once the societal position scale is concerned. Married men might estimate their financial household situation worse in case their spouse is unemployed given that it is more common that women and not men do not participate in the labour force. However, the result on widowers seems to be counterintuitive, since widows might loose a considerable greater part of household resources with the death of a husband than widowers.

[137] The sample comprises 382 widowed men and 1856 widowed women.

In contrast to the literature discussed earlier, retired women are not more likely to live in subjective poverty than retired men once it is controlled for background characteristics.

In summary, the multivariate analysis indicates that women have a higher poverty risk regarding their financial satisfaction and their societal position than men even if it is controlled for population characteristics in transition countries. In this region higher educated women cannot avoid poverty as effectively as their male counterparts. On the other hand, unemployed women face a much lower poverty risk than unemployed males.

In contrast to transition countries, gender differences in poverty incidence do not appear to be significant in OECD countries once it is controlled for background characteristics. This indicates that the feminisation of poverty is a 'special' phenomenon for transition countries and might therefore be related to the transition process or reflects other aspects of societies in the region.

4.7 Did the feminisation of poverty increase during the transition process?

It has often been stated that the feminisation of poverty developed or increased during transition. Nevertheless, there is rather no evidence on this hypothesis across different transition countries. The WVS data (but not the ISSP data) offer the opportunity to examine whether there are gender-related differences for financial satisfaction poverty in the time period from 1989/1992 to 1995/1997 and can therefore indicate whether women were indeed the losers of the transition process in terms of subjective poverty incidence.

Nevertheless, some problems of the data in terms of countries and time periods covered are noteworthy. Countries with a high gender gap in poverty incidence in the mid 1990s are underrepresented in the sample of countries for which older data are available. Of the five countries with greatest female disadvantage in poverty incidence in the mid 1990s only for one country (Latvia) are data also available for the beginning of the transition process (see Table 4.2).

In addition, the data were collected in different years for countries for both rounds. For example, gender differences observed refer to a 6 year time period for Latvia, Belarus and Estonia, where data were collected in 1990 for the older and 1996 for the recent round. In Poland data were collected in 1989 and 1997 (8 year period), in Bulgaria in 1990 and 1997 (7 year period), in Russia in 1991 and 1995 (4 year

period) and in Slovenia in 1992 and 1995 (only 3 year period). Hence, the time periods covered differ greatly with 8 years for Poland and 3 years for Slovenia and other countries in between. In five out of the seven CEE countries data for the older wave were collected in 1989 or 1990 and hence in a pre-transitional period or a period in which transition was initiated. However, in Slovenia as a Central European country the situation started to improve in 1992 (see Figures 1.2 on real GDP and 1.3 on real average wage growth in the Introduction).

A main problem[138] for comparisons of subjective well-being over time is that average satisfaction scores constant across two time points do not necessarily imply that the absolute satisfaction level has not decreased or increased over time since judgements and measures of satisfaction are adapting to people's moving context. (Easterlin, 1995) This might explain why life satisfaction scores remained relative stable over time in Western industrial countries even though economic development increased. (Fahey *et al.*, 2003) Nevertheless, the great and very recent changes during the transition process from centrally planned to market economies had probably a too big impact on peoples lives for being cancelled out by an adaptation process of judgements over time.[139]

Figure 4.6 displays the percent of people who situate themselves in the lowest third of the financial satisfaction scale for countries that are covered in the older round (covering years 1989 to 1992) and in the recent round (covering years 1995 to 1997) of the WVS.[140] Countries are ordered by poverty rates in the mid 1990s and grouped into transition and OECD countries.

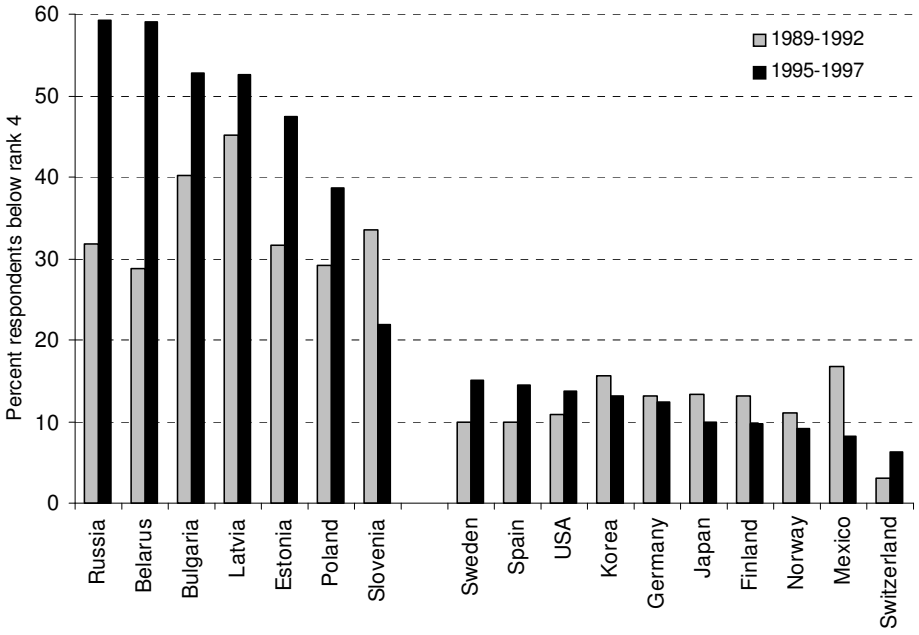
While the poverty rate is relative stable over time in OECD countries (with the exception of Mexico) transition countries show generally a considerable increase of poverty rates. The rise is especially high in Russia and Belarus. In both countries about one third of the population were subjectively poor at the beginning of the transition process but twice as many four or six years later. Also in Bulgaria, Estonia and Poland the poverty rate increased by about 10 percent. Slovenia one of the post-communist countries with the smoothest transition process and high levels of GDP

[138] Another problem is that given the bounded scale of the FSQ (and SPQ) an increase in satisfaction for people on scale 10 and a decrease in satisfaction for people situated on scale 1 are generally not possible. Even though cross-sectional and not panel data are examined in the following, this is not a trivial issue.

[139] In addition, there is no reason why an adaptation process of judgements on economic well-being should differ between genders so that adaptation should not impact on results of gender differences in economic well-being over time.

(see Chapter 1) is the only country where the poverty rate decreased (probably due to the fact that the situation improved in Slovenia after 1992 when the first round of the WVS was conducted).

Figure 4.6: Financial satisfaction poverty rate in percent by country



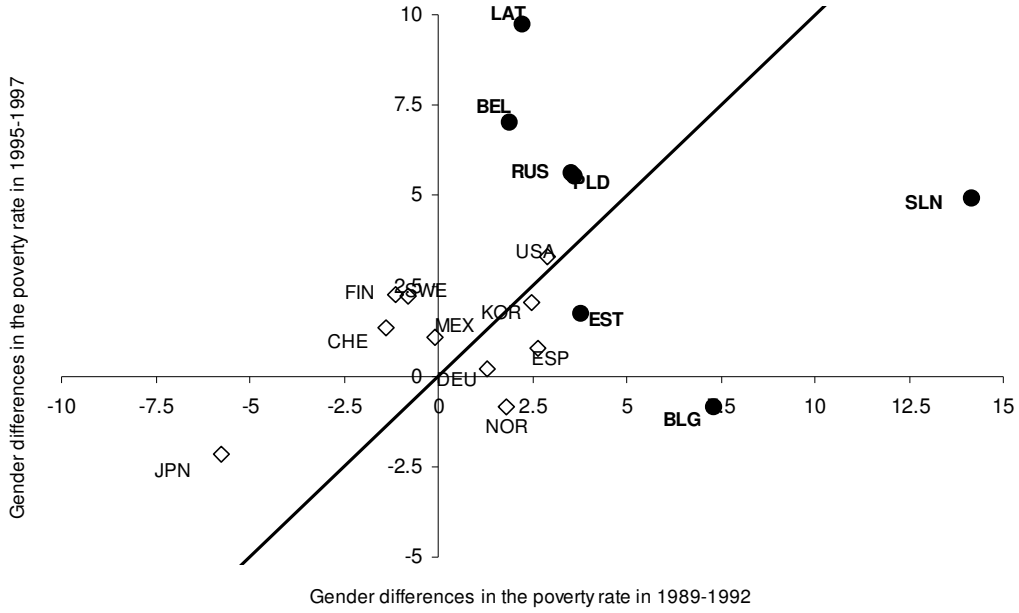
Source: WVS data; author's calculations. Note: data were collected in 1990 in the older and in 1996 in the recent round for Latvia, Belarus and Estonia. In Russia the data refer to 1991 and 1995, in Slovenia to 1992 and 1995, in Bulgaria to 1990 and 1997 and in Poland to 1989 and 1997.

How did gender differences in poverty incidence change between the two periods? Figure 4.7 plots the percent point difference between female and male poverty rates in 1989-1992 on the x-axis and for the more recent round of 1995 to 1997 on the y-axis. In countries that are situated below the 45 degree line the gender difference in the poverty rate was greater at the beginning of the transition process than in the mid 1990s; vice versa the gender gap in the poverty rates increased over time in those countries situated above the diagonal line. Those countries where gender differences did not change greatly are clustered close to the 45 degree line.

Gender differences are generally smaller than 5 percent points in OECD countries and changes in gender differences over time remain also in the 5 percent range. Rather the same number of OECD countries show either an increase in women's poverty compared to men or a relative decrease in their poverty incidence.

[140] The test of stochastic dominance shows also for the 1989 to 1992 data round that women's poverty incidence is always greater than that of men given cumulative percentages of respondents by scale score.

Figure 4.7: Female - male poverty rate in percent points by year



Source: WVS data; author's calculations. Note: gender differences observed refer to a 6 year time period for Latvia, Belarus and Estonia, where data were collected in 1990 for the older and 1996 for the recent round. In Poland data were collected in 1989 and 1997 (8 year period), in Bulgaria in 1990 and 1997 (7 year period), in Russia in 1991 and 1995 (4 year period) and in Slovenia in 1992 and 1995 (only 3 year period).

Gender differences of transition countries appear to be much greater. Slovenia is a clear outlier, where as many as 14 percent points more women than men were poor in 1992. Given that Slovenia compares generally very well to OECD countries regarding gender equality measures this figure seems quite high. In Bulgaria 7 percent more women than men estimated their situation to be poor. In the other 5 transition countries less than 5 percent points more women than men lived in poverty between 1989 and 1992.

The greatest rise in the gender difference of the poverty rate took place in Belarus and Latvia where the gender gap increased by 5 to 8 percent points. On the other hand, the gender gap decreased by a similar amount in Bulgaria and Slovenia leading to an only marginal disadvantage of women compared to men in both countries in the mid 1990s. In Russia, Poland and Estonia the change of the gender gap in poverty incidence is only marginal.

Another but very similar possibility for the examination of the gender gap in poverty incidence is to use a logistic regression model. Table 4.8 gives the logistic regression results of such an analysis where subjective poverty incidence is the

dependent binary choice variable and gender, year and the interaction variable gender*year are explanatory variables.

Table 4.8: Logistic regression results with dependent dummy variable set to 1 if respondents are below level 4 on the FSQ scale

	OECD	Poland	Slovenia	Estonia	Latvia	Bulgaria	Belarus	Russia
Women	0.019	0.176	0.646	0.175	0.089	0.305	0.092	0.162
	(0.051)	(0.137)	(0.137)***	(0.138)	(0.129)	(0.127)**	(0.113)	(0.098)*
Year 1995-1997	-0.091	0.389	-0.389	0.728	0.128	0.691	1.161	1.097
	(0.052)*	(0.138)***	(0.157)**	(0.141)***	(0.136)	(0.130)***	(0.115)***	(0.100)***
Year 1995-1997*women	0.085	0.058	-0.356	-0.105	0.301	-0.339	0.198	0.070
	(0.072)	(0.187)	(0.206)*	(0.187)	(0.179)*	(0.178)*	(0.154)	(0.134)
Constant	-2.022	-0.979	-1.044	-0.871	-0.245	-0.561	-0.959	-0.854
	(0.036)***	(0.100)***	(0.104)***	(0.104)***	(0.099)**	(0.094)***	(0.084)***	(0.073)***
Observations	30066	2086	2023	2009	2069	2092	3098	3954
Pseudo R-squared	0.00	0.01	0.03	0.02	0.01	0.01	0.07	0.06
log-lklhd	-10756.23	-1323.31	-1163.58	-1321.07	-1422.99	-1425.41	-1973.40	-2568.92

Source: WVS data; author's calculations. Note: standard errors in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%

The reference group are males in the WVS round of 1989 – 1992. Grey shaded fields indicate in which countries women face a significantly smaller (negative value) or greater subjective poverty risk (positive value). The β-coefficient for the dependent variable 'women' shows the gender gap in the poverty incidence for 1989-1992 (and hence compares to the x-axis of Figure 4.7 once we set p=0.5 and calculate the probability of poverty with $\hat{\beta}_j / 4$). The β-coefficient for the year variable indicates the higher probability of poverty incidence (positive value) in the mid 1990s compared to the early 1990s. We see that poverty incidence increased significantly in all transition countries with the exception of Slovenia and Latvia. The interaction variable 'year*women' displays the increase or decrease in poverty incidence for women in the time interval and captures therefore the gender gap in poverty incidence over time. The value added of this table compared to Figure 4.7 is the significance level indicated by the standard errors of the coefficients. Only in Latvia women's disadvantage in poverty incidence increased over time significantly. In Slovenia and Bulgaria it is men who fell significantly more into poverty than women. However, differences over time are only significant at the 10 percent level.

In summary, descriptive results show that there is rather low evidence for an increase of the feminisation of poverty during the transition process. Only in Latvia the increase of the feminisation of poverty is significant (at a low 10 percent level). In the other 6 transition countries for that cross-sectional data are available the increase in the gender gap in poverty is not significant or it is even men who experience a

higher increase in subjective poverty than women. Nevertheless, the results need to be interpreted carefully.

First, data quality of the World Value Survey might be low once poor countries are concerned where the sample might overrepresent the urban and better educated population. Second, cross-sectional data are only available for seven transition countries so that the conclusion to be drawn cannot be generalised for all CEE countries. Third, changes in gender inequalities observed for countries refer to different years and differently long time periods and need therefore to be compared with caution.

The descriptive comparisons of the gender gap in poverty incidence have a great advantage. In each country, the population characteristics in one period might differ from that in the following period. The transition process had a substantial impact on the labour market like increased unemployment rates, rising returns to education, increasing income inequality and less resources available for households (see Chapter 1). Hence, respondents at the beginning of the 1990s differ from those in the mid 1990s in terms of their background characteristics. In case the transition process lead to a more unfavourable change of females' or of males' characteristics (e.g. greater share of women who fell into unemployment), these gender differences in the population characteristics that impact upon poverty are reflected in the descriptive statistics given in Figure 4.7 and Table 4.8.

Hence, using a more sophisticated regression model than that in Table 4.8 controlling for population characteristics cannot add greatly to the examination of time trends in gender differences of poverty incidence. Nevertheless, it might be argued that there is a general interest for 'pure' changes in the female poverty disadvantage indicating whether women would face greater hardship than men if they had similar characteristics during transition.

In order to estimate these pure trends in gender disadvantage I run a logistic regression model similar to that used in Table 4.8. However, besides gender, year and the interaction variable capturing time trends in the gender gap this regression model comprised additionally the population characteristics described in Table 4.5.

Results on time trends (given in the Appendix in Table A 4.7) proved to be very similar to those unconditional on population characteristics presented in Table 4.8. Controlling for background characteristics women's disadvantage significantly decreased in Bulgaria by 10 percent (5 percent significant level), increased in Latvia by 13 percent (5 percent significance level) and increased by 8 percent in Belarus (10

percent significance level) over time (if p is set equal to 0.5). However, once background characteristics are controlled for there does not appear any more a significant decline in females' poverty disadvantage in Slovenia even though the β-coefficient for the interaction model is rather equal to that given in the logistic regression results in Table 4.8 (where I did not control for individuals' background characteristics). In all other countries and in the OECD there does not appear any significant change of women's poverty disadvantage.

4.8 Conclusion

The aim of this Chapter was to examine the feminisation of poverty in transition countries by avoiding the dilemma of the unitary household assumption with the means of using a subjective approach for measuring the gender gap in poverty. I examined whether a) women are poorer than men in transition countries, b) whether the feminisation of poverty in transition countries is different to the benchmark group of OECD countries and c) whether the feminisation of poverty increased during the transition process.

On the basis of respondents' satisfaction with their financial situation of their household and with their societal position the following results were obtained:

a) By defining the poor as those who place themselves below level 4 of the financial satisfaction and societal position scale, differences in the poverty rates between the genders are great between transition countries. About 8 to 10 percent points more women than men are dissatisfied with the financial situation of their household in Latvia, Moldova, Georgia, Ukraine and Slovak Republic. The gender gap is similarly high in Hungary and Czech Republic once the societal position is concerned. In none of the transition countries women fare significantly better than men regarding their poverty incidence. On average, about 5 percent point more women than men are poor regarding their views of their financial satisfaction (based on 17 transition countries) and their societal position (based on 8 transition countries) in the region of CEE. Women's greater poverty risk remains significant once respondents' background characteristics are controlled for. Nevertheless, compared to differences in poverty incidence between transition countries, women's greater poverty risk appears to be relatively small.

A comparison of the impact of respondents' characteristics on poverty incidence shows consistently for both subjective poverty measures that unemployed men have about 10 percent higher poverty risk than unemployed women holding other socio-economic and demographic background variables constant. On the other hand, better educated women have a significantly higher poverty risk than their male counterparts. In contrast to literature based on household data, subjective poverty data does not suggest that retired women fare worse than their male counterparts regarding their societal position or their financial satisfaction poverty.

b) The feminisation of poverty is more pronounced in transition than in OECD countries. Once controlled for socio-economic and demographic characteristics, women in the West do not have a significantly higher poverty risk than men while the gender gap is still significant in the East.

c) The measurement of changes in the gender gap of poverty incidence was limited in three perspectives: i) cross-sectional data is only available for the financial satisfaction poverty, ii) countries with a high gender gap in poverty incidence in the mid 1990s are under-represented in the country sample for which cross-sectional data are available and iii) data collection was conducted at different time points for countries. Based on these limitations results suggest a significant increase in the feminisation of poverty only in Latvia and Belarus. In Bulgaria women's greater poverty incidence at the beginning of the transition process decreased to insignificance in the mid 1990s. In addition, there is no significant increase in the feminisation of poverty between the start of the transition process and the mid 1990s in Poland, Slovenia, Estonia and Russia as well as in the pooled sample of OECD countries. Hence, given subjective data there is little evidence of any consistent regional pattern that women fell more markedly into poverty than men during transition.

Taken together, subjective data confirm the hypothesis of the feminisation of poverty in terms of the higher female poverty incidence. Women in transition countries are poorer than men and this gender gap is significant and greater than in the benchmark group of OECD countries. On the other hand, subjective data do not give clear evidence for the hypothesis that the feminisation of poverty is a result of the transition process.

The advancement of the reform process (e.g. in terms of the EBRD reform index discussed in Chapter 1) seems not to be related to CEE countries' level of gender inequality in poverty incidence. In Bulgaria, Azerbaijan, Armenia and Macedonia women are not significantly poorer than men regarding their financial satisfaction with the household while the gender gap regarding societal position poverty is greatest in Hungary and the Czech Republic.

4.9 Appendix

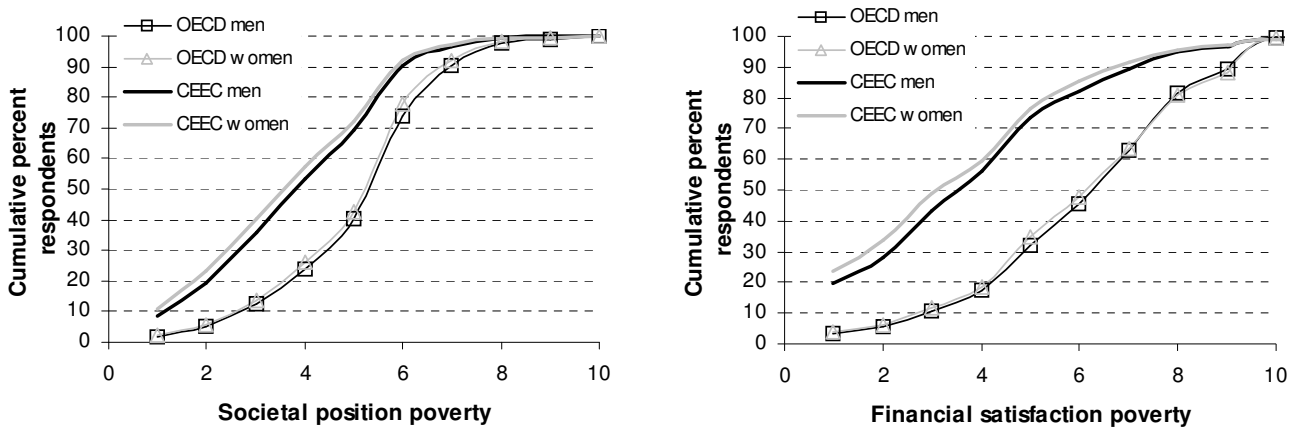
Table A 4.1: Details on ISSP

Country	Response Rate (%)	Fieldwork method
Australia	40.1	Mail survey with four follow-up mailings
Austria	63.3	Face to face interview
Bulgaria	91.8	Face to face interview
Canada	21.9	Mail survey with one reminder
Czech Rep	48.9	Face to face interview
France	18.1	Mail survey
Germany	56.2	Self-completion of questionnaire distributed by interviewer
Great Britain	40.2	Face-to-face interview
Hungary	64.6	Face-to-face interview
Japan	73.6	Self-completion (Dropping off and later picking up questionnaires)
Latvia	56.3	Face-to-face interview
New Zealand	60.5	Mail survey with two follow-up mailings
Norway	52.84	Mail survey with one reminder and two follow-ups with questionnaire
Poland	66.5	Face-to-face interview
Portugal	80.1	Face-to-face interview
Russia	57.8	Face-to-face interview
Slovakia	90.2	Face-to-face interview
Slovenia	64.9*	Face-to-face interview
Spain	98.5	Face-to-face interview
Sweden	57.5	Mail survey with four reminders
USA	43.4	Face-to-face interview

Details on WVS

For both waves each country survey was carried out through face to face interviews with a sampling universe consisting of all adult citizens, ages 18 and older. In most cases, stratified multi-stage random sampling was used, with the samples being selected in two stages. First, a random selection of sampling locations was made; next, a random selection of individuals was drawn up. In some countries individuals were selected from electoral rolls or from central registry of citizens. For 1990 surveys response rates averaged 71 % for these participating institutes that reported response rates. The Swiss surveys are stratified by language group, producing a sample that over-represents the French-speaking and Italian-speaking groups. In Russia, the individual respondents were selected from centralised lists of the place of residence of everyone living in the jurisdiction of a particular state-run address bureau. The surveys from most other low income countries under sample the illiterate portion of the public and over sample the urban areas and the more educated strata. Even if this is taken into account by weighting, this data is not fully comparable to those from advanced industrial societies.

Figure A 4.1: Cumulative percent of respondents in levels of the societal position and financial satisfaction scale by region and gender



Source: ISSP and WVS data; author's calculations.

Table A 4.2: Spearman rank-order correlation coefficients of gender differences in poverty rates (SPQ and FSQ) and the proportion of the poor in households with gender specific-characteristics across different poverty measures

		Subjective poverty measure		Objective poverty measure		
		WVS	ISSP	World Bank Data		
		FSQ	SPQ	Female HH	Single parent HH	Elderly HH
WVS	FSQ	1				
ISSP	SPQ	0.13	1			
World Bank data	Female HH	-0.13	0.05	1		
	Single parent	-0.35	0.79	0.49	1	
	Elderly household	0.02	- 0.07	0.24	0.00	1

Note: correlates regard gender differences in subjective poverty rates for FSQ and SPQ (given in Table 4.3) and gender differences in the proportion of the poor between households with gender-specific characteristics (given in Table 4.1) regarding the objective poverty measure. The common sample size of these correlation coefficients are quite small: SPQ and World Bank data cover only 7 common countries;World Bank data and FSQ cover 15 and FSQ and SPQ 19 common countries. As a consequence, all correlation coefficients are not significant at the 5 % level with exception of the coefficient of 0.49 for female household head and single parenthood objective poverty incidence.

Table A 4.3: Summary statistics

	SPQ				FSQ			
	OECD countries		CEE countries		OECD countries		CEE countries	
Variable	Obs	Mean	Obs	Mean	Obs	Mean	Obs	Mean
Female	13803	0.52	10172	0.53	23651	0.52	24370	0.55
Age	13764	45.48	10162	45.73	22283	42.97	24011	43.23
Married	13707	0.60	10163	0.61	23624	0.59	24372	0.64
Divorced/separated	13707	0.09	10163	0.09	23624	0.06	24372	0.06
Widow	13707	0.07	10163	0.13	23624	0.07	24372	0.10
Religious degree	13832	4.30	10172	4.21	21950	4.72	23657	4.75
Secondary edu	13832	0.50	10172	0.55	23651	0.34	24374	0.58
Tertiary edu	13832	0.28	10172	0.19	23651	0.13	24374	0.19
Education mis	13832	0.02	10172	0.00	23651	0.27	24374	0.10
Professional	13108	0.31	10056	0.25	22418	0.21	23546	0.18
Skilled worker	13108	0.56	10056	0.57	22418	0.46	23546	0.49
Retired	13651	0.21	10161	0.29	22438	0.16	22342	0.20
Not in labour force	13651	0.18	10161	0.12	22438	0.20	22342	0.09
Unemployed	13651	0.04	10161	0.09	22438	0.05	22342	0.09
Part-time employed	13651	0.11	10161	0.05	22438	0.09	22342	0.06
Rural area	13832	0.22	10172	0.33	18999	0.38	24348	0.43
Area missing	13832	0.12	10172	0.00	18999	0.00	24348	0.00

Source: ISSP and WVS, author's calculations. Note: countries included in CEE and OECD country group for FSQ and SPQ are the same as those given in the note to Figure 4.1 with the exception that Hungary is not included in the FSP CEE country group due to missing data on family background.

Table A 4.4: Remainder of regression results of Table 4.6

	FSQ		SPQ	
	OECD countries	CEE countries	OECD countries	CEE countries
Region missing			-0.664	
			(0.318)**	
Education missing	0.380	-15.632	-0.924	-0.146
	(0.581)	(0.104)***	(0.209)***	(0.644)
Austria	0.855		-0.986	
	(0.139)***		(0.191)***	
UK	-0.341			
	(0.577)			
Canada	-0.894			
	(0.581)			
France	-0.544			
	(0.578)			
Japan	-0.555			
	(0.580)			
Norway	-0.371		-0.842	
	(0.134)***		(0.123)***	
Spain	0.034		-0.518	
	(0.130)		(0.106)***	
Sweden	0.110		-0.714	
	(0.125)		(0.121)***	
USA	0.198		-0.366	
	(0.128)		(0.121)***	
Germany	-0.327		-0.059	
	(0.134)**		(0.328)	
Finland	-0.666			
	(0.145)***			
Mexico	-0.490			
	(0.149)***			
Switzerland	-0.778			
	(0.151)***			
Portugal			0.676	
			(0.101)***	
Armenia		0.610		
		(0.089)***		
Azerbaijan		-0.209		
		(0.091)**		
Belarus		0.721		
		(0.091)***		
Bulgaria		0.390		0.923
		(0.087)***		(0.103)***
Czech Rep.		14.562		-0.364
		(0.100)***		(0.104)***
Estonia		0.194		
		(0.088)**		
Georgia		0.594		
		(0.142)***		
Hungary				0.168
				(0.103)
Latvia		0.550		0.765
		(0.087)***		(0.106)***
Lithuania		0.336		
		(0.085)***		
Macedonia		-0.441		
		(0.089)***		
Moldova		0.886		
		(0.089)***		
Russia		0.655		0.963
		(0.089)***		(0.099)***
Slovak Rep.		15.127		0.074
		(0.097)***		(0.101)
Slovenia		-1.030		-0.870
		(0.094)***		(0.125)***
Ukraine		1.014		
		(0.091)***		

Note: the variables 'region missing' and 'education missing' capture respondents who miss information on area (rural, urban) or education.

Table A 4.5: Logistic regression results by region with dependent dummy variable set to 1 if respondents are below level 4 on the SPQ and FSQ scale without taking respondents' characteristics into account

	FSQ		SPQ	
	OECD countries	CEE countries	OECD countries	CEE countries
Female	0.094	0.209	0.171	0.221
	(0.041)**	(0.027)***	(0.052)***	(0.043)***
Observations	22366	24096	13324	9881
Pseudo R-squared	0.02	0.06	0.04	0.05
log-lklhd	-8376.93	-15645.81	-5095.59	-6278.84

Source: ISSP and WVS data, author's calculations. Note: standard errors in parentheses;* significant at 10%; ** significant at 5%; *** significant at 1%. It is controlled for country fixed effects by dummy variables (results not shown).

Table A 4.6: Remainder of regression results of Table 4.7

	FSQ		SPQ	
	Men	Women	Men	Women
Education missing	-1.277	-16.615	0.216	-0.328
	(0.162)***	(0.136)***	(0.977)	(0.803)
Armenia	0.624	0.598		
	(0.131)***	(0.122)***		
Azerbaijan	-0.130	-0.282		
	(0.133)	(0.126)**		
Belarus	0.651	0.776		
	(0.139)***	(0.120)***		
Bulgaria	0.460	0.317	0.947	0.911
	(0.129)***	(0.119)***	(0.152)***	(0.140)***
Czech Rep.	0.261	15.491	-0.359	-0.357
	(0.155)*	(0.132)***	(0.159)**	(0.138)***
Estonia	0.303	0.113		
	(0.132)**	(0.118)		
Georgia	0.457	0.703		
	(0.212)**	(0.195)***		
Latvia	0.485	0.599	0.831	0.720
	(0.131)***	(0.117)***	(0.162)***	(0.142)***
Lithuania	0.437	0.245		
	(0.127)***	(0.116)**		
Macedonia	-0.360	-0.491		
	(0.128)***	(0.126)***		
Moldova	0.782	0.995		
	(0.130)***	(0.124)***		
Russia	0.654	0.652	0.926	0.980
	(0.134)***	(0.119)***	(0.148)***	(0.134)***
Slovak Rep.	0.682	16.186	0.155	0.008
	(0.151)***	(0.126)***	(0.151)	(0.137)
Slovenia	-1.076	-0.992	-0.850	-0.903
	(0.144)***	(0.125)***	(0.181)***	(0.173)***
Ukraine	0.953	1.056		
	(0.139)***	(0.121)***		
Hungary			0.197	0.178
			(0.155)	(0.138)

Table A 4.7: Logistic regression results on changes over time

	OECD	Poland	Slovenia	Estonia	Latvia	Bulgaria	Belarus	Russia
Female	-0.064	0.118	0.573	-0.059	-0.151	0.259	-0.005	0.138
	(0.061)	(0.150)	(0.145)***	(0.147)	(0.200)	(0.137)*	(0.122)	(0.103)
Age	0.035	0.028	0.083	0.090	0.116	0.028	-0.022	0.044
	(0.009)***	(0.018)	(0.025)***	(0.024)***	(0.023)***	(0.018)	(0.019)	(0.014)***
Age2	-0.001	-0.000	-0.001	-0.001	-0.001	-0.000	0.000	-0.001
	(0.000)***	(0.000)*	(0.000)***	(0.000)***	(0.000)***	(0.000)	(0.000)	(0.000)***
Married	-0.226	-0.085	-0.149	0.036	0.057	0.070	-0.004	-0.127
	(0.057)***	(0.157)	(0.155)	(0.134)	(0.143)	(0.165)	(0.133)	(0.112)
Divorced/separated	0.840	0.975	0.442	0.909	0.150	0.324	0.936	0.444
	(0.080)***	(0.286)***	(0.306)	(0.191)***	(0.208)	(0.286)	(0.203)***	(0.147)***
Widow	0.444	0.458	0.734	0.443	0.416	0.656	0.069	0.324
	(0.108)***	(0.227)**	(0.254)***	(0.226)**	(0.268)	(0.256)**	(0.216)	(0.178)*
Religious degree	0.102	0.032	0.054		0.062	-0.027	-0.024	0.045
	(0.011)***	(0.036)	(0.029)*		(0.036)*	(0.030)	(0.028)	(0.026)*
Secondary education	-0.100	-0.237	-0.745	-0.030	-0.176		-0.010	-0.694
	(0.064)	(0.119)**	(0.187)***	(0.125)	(0.169)		(0.197)	(0.153)***
Tertiary education	-0.054	-0.999	-0.946	-0.430	-0.668		-0.335	-1.126
	(0.087)	(0.258)***	(0.308)***	(0.216)**	(0.235)***		(0.231)	(0.199)***
Education missing	0.420	-0.878	-14.767					
	(0.069)***	(1.045)	(0.537)***					
Professional	-0.375	-0.364	-0.778	-0.739	-0.112	-0.456	-0.204	0.042
	(0.073)***	(0.206)*	(0.229)***	(0.197)***	(0.195)	(0.167)***	(0.144)	(0.122)
Skilled worker	-0.237	0.036	-0.086	-0.308	0.088	-0.096	-0.061	0.217
	(0.052)***	(0.117)	(0.141)	(0.141)**	(0.156)	(0.114)	(0.126)	(0.088)**
Retired	0.636	0.327	-0.181	0.769	0.698	0.627	0.017	0.338
	(0.093)***	(0.184)*	(0.184)	(0.213)***	(0.230)***	(0.173)***	(0.188)	(0.132)**
Not in labour force	0.185	0.414	-0.121	-0.125	0.132	0.505	-0.790	0.026
	(0.068)***	(0.247)*	(0.208)	(0.266)	(0.239)	(0.238)**	(0.301)***	(0.146)
Unemployed	1.082	-0.092	1.053	0.555	0.887	1.092	0.889	0.778
	(0.076)***	(1.101)	(0.200)***	(0.207)***	(0.236)***	(0.198)***	(0.294)***	(0.196)***
Part-time employed	0.032	0.160	-0.295	0.297	-0.175	0.183	0.325	0.258
	(0.079)	(0.318)	(0.458)	(0.206)	(0.193)	(0.218)	(0.277)	(0.216)
Rural area	-0.099		0.026	0.115	-0.223	0.135		0.219
	(0.044)**		(0.129)	(0.112)	(0.110)**	(0.102)		(0.074)***
Year: 1995-1997	0.093	0.602	-14.698	0.587	0.025	0.515	1.019	1.692
	(0.068)	(0.159)***	(0.551)***	(0.169)***	(0.206)	(0.141)***	(0.220)***	(0.171)***
Year*female	**0.079**	**0.122**	**-0.352**	**-0.003**	**0.531**	**-0.375**	**0.321**	**0.043**
	(0.083)	**(0.200)**	**(0.218)**	**(0.195)**	**(0.237)****	**(0.189)****	**(0.171)***	**(0.140)**
Constant	-3.011	-1.593	11.778	-2.165	-2.704	-1.286	-0.319	-1.887
	(0.199)***	(0.414)***	(0.000)	(0.464)***	(0.530)***	(0.428)***	(0.429)	(0.338)***
Observations	24964	1999	1975	1962	1552	1977	2654	3935
Pseudo R-squared	0.05	0.04	0.08	0.06	0.05	0.06	0.09	0.08
log-lklhd	-8210.71	-1237.27	-1069.34	-1247.80	-1018.97	-1290.81	-1645.76	-2492.04

Source: WVS 1989-92 and 1995-1997, author's calculations. Note: OECD countries are Germany, Spain, USA, Japan, Mexico, Norway, Sweden, Finland, South-Korea and Switzerland. Standard errors in parentheses,* significant at 10%; ** significant at 5%; *** significant at 1%.

5 Conclusion

5.1 Introductory remarks

The aim of this study was to examine gender inequality in transition countries after 15 years of transition. The level of gender inequality in CEE today is in part an inheritance from the communist system and in part due to subsequent developments during the transition process. For estimating the level of gender inequality in transition countries OECD countries were used as benchmark comparison group. In addition, the study covered a large set of transition countries in order to meet a comparative research design. Recent and large cross-national data sets of comparable surveys were used for the examination of gender inequalities in CEE.

In contrast to the predominant part of literature using common economic indicators for the examination of gender inequality, this study was based on a different approach by applying micro-data on people's attitudes and perceptions on their economic well-being as well as pupils' achievement for estimating inequality in transition countries. The study showed that these alternative indicators can add important results to more conventional methods of the examination of gender equality and serve therefore as an essential complement for understanding women's situation in CEE today.

Economic indicators on women's situation in the labour market reveal that gender inequality in transition is similar to that in OECD countries. However, results of this study showed that people (men as well as women) in transition countries believe greatly more in gender stereotypes on work (54 percent) than people in the industrialised West (26 percent). (Chapter 2)

Gender differences in gross enrolment rates (predominantly used in the literature for the examination of gender inequalities in human capital) show gender parity in access to education. However, results of Chapter 3 suggest that this gender parity does not translate into gender equality in educational achievement in transition and OECD countries.

Poverty analyses are generally based on household income figures that derive from household surveys. This objective measure of poverty is of only limited suitability for the examination of the feminisation of poverty. In addition, comprehensive poverty analyses are not available over time for CEE countries. Micro-data on subjective well-being offer the possibility to examine gender differences in subjective poverty. This approach applied in Chapter 4 showed that –similar to results of the objective poverty measure – women fare worse than men in terms of poverty in transition countries. In addition, subjective data suggest

that the relative female disadvantage is greater in transition than in the benchmark group of OECD countries. Furthermore, an analysis of time trends indicates that the feminisation of poverty was already a pre-transitional phenomenon.

Hence, this use of rather uncommon estimators for gender inequality in transition countries is rewarding in terms of new insights into different aspects of gender inequality in transition countries. At the same time, however, it is important to examine what these indicators can contribute to the debate on gender inequality in Central and Eastern Europe. Do these indicators and results derived matter, how can differences between more common economic indicators and those used in this study be explained and do results lead to direct policy implications for improving women's situation in transition countries?

The aim of this concluding Chapter is to debate these questions after a summary of each Chapter's results thereby discussing separately the subjects' importance and the Chapter's value added, the statistical methods applied and main results observed as well as the limits of the analyses. The remainder of this Chapter is as follows: Section 5.2 discusses results of Chapter 2, Section 5.3 of Chapter 3 and Section 5.4 of Chapter 4. Section 5.5 provides concluding remarks.

5.2 Gender equality in the labour market: attitudes to women's work

5.2.1 Importance of subject and value added

The labour market acts as the conduit through which reform policies impact upon people's standard of living and at the same time it is the market through which many of the rewards of transition are transmitted. Unequal chances in the labour market have a direct impact upon people's lives and are therefore of a major concern once gender equality in transition countries is examined.

The transition process lead to a dramatic fall in GDP and tremendous increase in poverty and income inequality in many of the countries in CEE (described in Chapter 1). Given that gender equality is related to countries' economic development (see Figures 1.7 and 1.8) it might be expected that gender inequality is higher in transition countries than in the industrialised West that did not face the shortcomings of transition. It appears therefore to be quite surprising that in general common economic indicators like the gender gap in pay, labour force participation and human capital show that gender inequalities are equally high in (pre 1990) OECD countries and CEE countries today. Chapter 2 used attitudes on the traditional gender division of work as a complementary indicator and proxy for measuring gender inequality in the society. The advantage of this indicator over economic indicators is first that the latter focus on labour market outcomes and cannot take gender differences in

preferences into account. However, gender differences in preferences (e.g. differences between men and women regarding their desire to participate in the labour market) are likely to impact upon gender differences in economic outcomes but do not reflect gender inequalities (see Chapter 1). Second, as discussed in Chapter 2 regional differences in women's and men's opportunities cannot necessarily be pinned down with general economic indicators since different regional constraints in the labour market might shape labour market outcomes, e.g. given different regional economic development women in the East are likely to have less choice in their job opportunities than women in the West. Third, economic indicators might just catch some but not the whole truth of gender inequality. E.g. women's labour market participation during communism was much higher in CEE than in Western industrialised countries. Nevertheless, as discussed in Chapter 1 there is great doubt that this indicated that communist countries achieved higher gender equality than OECD countries.

Hence, the value added of Chapter 2 was to examine gender equality in the labour market from a different perspective: what are people's attitudes about women's work in different regions and countries. In short, how far do countries differ regarding people's agreement with the statement that women should stay at home and care for children? It can be assumed that patriarchal attitudes shape women's opportunities in the labour market and can therefore serve as a proxy for measuring gender inequality in the society.

The contribution of this Chapter was to describe regional differences in attitudes to women's work and examine the determinants of these differences. In addition, gender differences in attitudes to women's work and their determinants were examined. Furthermore, the future pattern of social change of gender-attitudes was analysed.

5.2.2 Data used, methods applied and main results

The data used derive from four rounds (1988, 1991, 1994 and 1998) of the International Social Survey Program (ISSP). Besides descriptive comparisons of the percent of people adherent to patriarchal gender attitudes, ordered logit models were applied for measuring a) the 'pure' size effect of attitudes to gender inequality in regions and countries, b) the gender and regional difference in the impact of population characteristics on gender attitudes and c) the changes of attitudes over time. Predicted probabilities facilitated the interpretation of results. In addition, the application of the Oaxaca decomposition method showed to which extent regional differences in gender attitudes are a consequence of differences in population characteristics or of a diverse impact of these characteristics.

Main results are as follows:

- In contrast to results deriving from economic indicators of gender equality in the labour market, transition countries are decisively different from Western industrialised countries once attitudes to women's work are examined. Twice as many people in transition than in OECD countries believe that women should look after the home and family. In Russia and Bulgaria even more than two thirds of the population adhere to the traditional gender division of labour.
- The Oaxaca decomposition analysis revealed that it is mainly differences in the impact of population characteristics that explains the regional gap in gender attitudes (and not differences in the observed population characteristics between East and West). While people in the East are quite homogenous in their strong patriarchal beliefs, the gap in patriarchal attitudes is much greater between the educated and uneducated, the younger and the older, the retired and the labour force participants in the West. In addition, single parenthood and cohabitation leads to more liberal gender attitudes only in OECD but not in transition countries.
- Gender differences in agreement with patriarchal attitudes on women's work are anything but substantial. Hence, it is not only men but also women who are in favour of the traditional gender division of work. Nevertheless, results indicated that gender differences in determinants of attitudes are much greater in the West than in the East confirming again the greater homogeneity in patriarchal beliefs in transition countries.
- Changes in patriarchal attitudes over time were estimated with two methods. First, changes in attitudes simply reflect the trend that older more traditional generations are replaced by younger, more egalitarian minded ones. Hence, the greater the gap between the youngest and the oldest the greater the change in patriarchal attitudes. OECD countries with generally high agreement with gender stereotypes showed greater variation between age groups than other OECD countries. This indicates that the gap in gender attitudes between OECD countries will decline over time (if the current changes of attitudes observed in cohorts today will also continue to exist in future unobservable cohorts). The contrary is true for transition countries where the countries most in favour of gender inequality have also the highest conformity between age groups. Hence, between-country differences in gender attitudes are likely to increase in CEE. In addition, given the higher impact of age on gender attitudes in the West, also the already high regional gap between transition and OECD countries is likely to increase even more.

Second, results indicate that the transition process might have lead to some underlying value shift in terms of greater adherence to liberal attitudes among the whole population between 1994 and 1998. However, the effect observed is very small in magnitude and not very significant.

5.2.3 Limits of analysis

The analysis covered only nine transition countries excluding countries in Central Asia and the Caucasus where attitudes to gender inequality might be different due to diverse economic, religious and cultural backgrounds.

In addition, a comparison of respondents' opinions across countries and regions is based on the assumption that individuals' answers are comparable. In order to meet answer comparability across countries, the organisers of ISSP designed the questionnaires by drafting groups consisting of members from several countries and a review and decision process from all participating countries. To overcome the translation problem regarding answer categories, the Chapter presented results generally for the collapsed answer categories 'agree' and 'strongly disagree'. Nevertheless, there is no way to take translation problems of the statement into account.

In this context, it is noteworthy that there might be regional differences in the interpretation of the statement examined. It was the communist doctrine that women and men should participate equally in the labour market (see Chapter 1). Hence, it might be that the agreement with the statement examined derives to a certain degree more from a rejection of communist ideologies than from purely traditional beliefs. Nevertheless, as discussed in Chapter 1, the fall of the communist rule led also to a fall of the communist ideologies and to a revitalisation of traditional values. However, respondents being asked about their ideas of women's work might associate predominantly female full-time occupation in transition countries in contrast to 'some form of female occupation' in pre-1990 OECD countries.

The analysis of underlying value shifts impacting upon gender attitudes over time was limited by data availability. Only for the years 1994 and 1998 were comprehensive data on several transition and OECD countries available. Even though value changes might take place rapidly in transition countries the period examined is very small and might therefore disguise underlying value changes over longer periods of time. The new round of ISSP 2002[141] (Family and Gender Roles III) made available at the end of 2004 offers an opportunity to examine gender attitudes and its impacts over an extended time period.

[141] See http://www.gesis.org/en/data_service/issp/data/2002_Family_III.htm.

5.2.4 Why do results on attitudes to women's work matter?

a) Great gap in patriarchal values between East and West

The great adherence to patriarchal values in transition countries (compared to OECD countries) is a concern given that these attitudes probably shape women's opportunities in the labour market. Hence, compared to economic indicators gender attitudes indicate that transition countries have higher levels of gender inequality than OECD countries.

The disagreement between economic and attitudes indicators on gender equality is surprising. One explanation discussed in Chapter 2 was that economic factors might not capture the already existing gap between East and West in gender equality in the labour market. Another explanation is that economic indicators show still the inherited gender equality in the labour market that has been forced upon the society by the communist grip while the attitude indicator captures the transitional revitalisation of traditional values that will impact on labour market developments in the future. If the last explanation is right it can be expected that the societal agreement on patriarchal values is very likely to worsen women's opportunities in the transitional labour markets over time. Hence, it is important to monitor gender equality in the labour market in the future in order to see whether the gender gap measured by economic indicators does indeed increase as the gender attitude indicator might predict.

The great and quite homogenous adherence to patriarchal attitudes in transition countries is also very likely to impact upon gender policies and labour market arrangements. Given this homogenous belief in the traditional gender division of work in many transitional societies it is very unlikely that gender equality objectives are integrated into policies that have a direct impact on women's and men's working life. In addition, it seems improbable that existing gender mainstreaming policies are implemented successfully in transition countries that are not members of the EU. The CEE accession countries were bound to adopt gender equality objectives (all EU legislation on equality of treatment of women and men is contained in Chapter 13 of the *acquis communautaire*) into national legislation and to ensure its implementation. However, the Annual Progress Reports of transition countries contain only scarce and general statements on gender equality, indicating that the objective of women's and men's equal opportunities has attracted only minor attention in the enlargement process. This indicates that preferences of transitional societies regarding patriarchal attitudes might still slow down the implementation of gender mainstreaming policies. In addition, given the general believe in the traditional gender division of work the topic of gender

mainstreaming in the labour market is certainly not political parties' most popular issue for winning voters' support.[142]

Besides the focus on the national level, gender attitudes are also important once labour market arrangements in societies are concerned. An ILO survey of enterprise managers conducted in the Czech Republic, Slovakia and Hungary showed that managers believe in gender stereotypes (e.g. men have supervisory skills which are superior to those of women) and that these beliefs impacted upon their recruitment practices leading to a discrimination of women (Pollack, 1996; UNICEF, 1999). Using the data source of Chapter 2, Figure A 5.1 in the Appendix shows that almost 90 percent of employers in Russia and 50 percent of employers in Bulgaria, Slovakia, Poland and Latvia believe that men should be the main breadwinner and that women should stay at home and care for children. There is a high probability that these employers' attitudes have some effect on their recruitment practices.

b) Changes in patriarchal attitudes over time

The forecasted widening gap in patriarchal attitudes between OECD and transition countries and within transition countries over the next decades is concerning since it indicates that women's unequal opportunities in most traditional transition countries are unlikely to improve even though gender equality standards are rising in less traditional societies.

c) Gender differences in attitudes

It is not men alone who are adherent to gender stereotypes, but women agree in almost equal shares with men on traditional gender division of work. Women's lack of voice in the 'democratisation with the male face' (see Chapter 1) seems therefore not the reason explaining gender inequalities in the labour market as long as they derive from gender stereotypes.

d) Extent of the impact of determinants explains regional gap in patriarchal attitudes

The great regional difference in gender attitudes derives from the low impact of respondents' characteristics on attitudes in the East (relative homogenous society) compared to the great impact of respondents' background on patriarchal attitudes in the West (relative heterogeneous society). This result suggests that in contrast to many other research fields like fertility, child mortality and health an increase of populations' education, income or other resources will probably not decrease greatly patriarchal attitudes in transition countries.

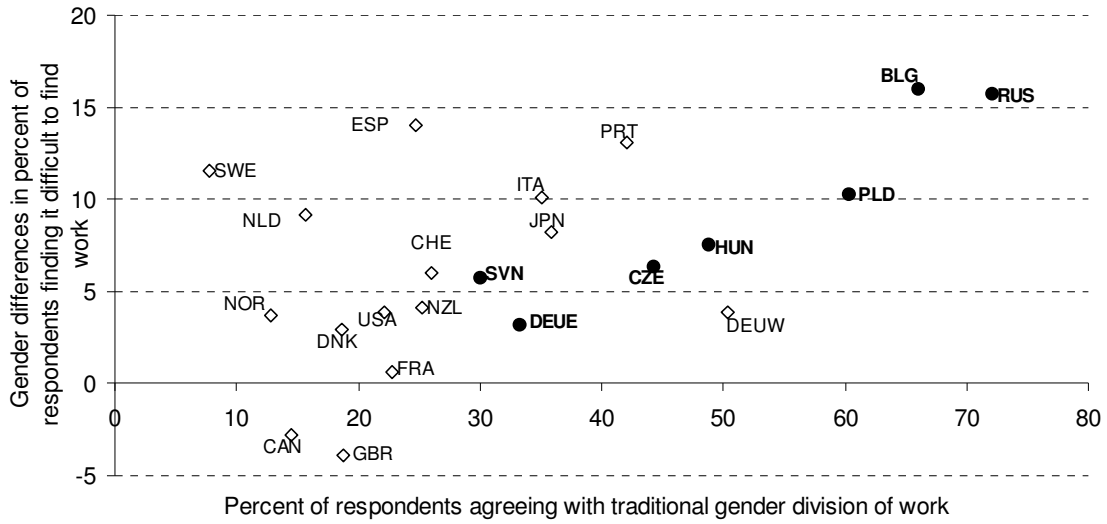
[142] There is a clear lack of research exploring the relation between societies' family values and their impact on policies. However, Abela (2003) shows that traditional value orientations have a direct impact on people's options on social policy.

5.2.5 Further research and policy implications

Given the importance of gender attitudes, research up to now neglects two important issues. First, what is the link between gender attitude indicators and economic indicators measuring gender inequality? Hence, how far do gender attitude indicators measure the same 'gender inequality' as economic indicators? The answer of this question should explain the contradicting results of economic and attitudes indicators discussed in detail in Chapter 2.

Second, there is a lack of research measuring directly the 'effect' of societies' patriarchal attitudes on gender unequal opportunities in the labour market across different countries. A measure of this effect would lead to a more precise understanding how far gender attitudes and cultural factors do matter and impede the implementation and formulation of policies promoting gender equality.

Figure 5.1: The relation between gender attitudes and women's work opportunities?



Source: ISSP 1997, ISSP 1998.

As a very simplified example of such an analysis, Figure 5.1 shows the relation between gender attitudes and women's opportunities in the labour market using two indicators for gender inequality discussed in the previous Chapters. The y-axis gives the gender differences in percent of respondents who judge it to be very difficult to find an acceptable job (see Figure 1.11 in Chapter 1 based on ISSP 1997 data). The x-axis gives the percentage of all respondents agreeing or strongly agreeing with the statement that it is a husband's job to earn money and a wife's job to look after the home and family (see Figure 2.2 in Chapter 2 based on ISSP 1998 data).

Results indicate that the more societies are patriarchal given their gender role attitudes the more women have greater difficulties than men to find an acceptable job. The correlation

coefficient between gender attitudes and gender differences in work opportunities is r= 0.94 for transition countries, a much more marginal 0.25 for OECD countries, and 0.55 for all 22 OECD and transition countries covered by both rounds of ISSP.

Nevertheless, even though this result meets the expectation such a simplified analysis raises some considerable suspicion. Unobservable characteristics might impact upon the relation between the gender gap in work opportunities and the degree of patriarchal attitudes in the society. For example, higher economic development is related to lower patriarchal attitudes and to lower (gender differences in) unemployment rates. Furthermore, countries with higher traditional values might have higher fertility rates leading to more women with children searching for work. Hence, the examination of the 'effect' of gender attitudes on women's work across different countries needs to be based on a more sophisticated analytic framework controlling for variables impacting upon both explanatory and independent variables.[143]

However, given that the gap in patriarchal attitudes is great between the East and West the examination of the impact of gender attitudes on gender inequality in labour market opportunities seems to be promising. Further research should therefore examine, how far 'traditional values' diminish women's chances to equal pay, equal access and equal chances in their labour market participation.

Given the economic indicators discussed in Chapter 2, there is no direct need for policy implications regarding gender equality objectives in transitional labour markets at least as long as CEE countries do not aim to meet better levels of gender equality than pre-1990 OECD countries. In contrast, the focus on attitudes shows that there would be a need to change people's traditional views on gender roles in transition countries (given that patriarchal attitudes are related to gender inequality, a relation that would need further examination as discussed before). However, due to the homogenous belief in traditional gender values a change of the population's characteristics like education would not necessarily lead to decreasing traditional values. In addition, policy implications are unlikely to work if they do not meet societal agreement. The change of cultural norms from within the society is therefore a difficult task to undergo.

[143] Patriarchal attitudes might have also a different impact on women's opportunities from country to country. For example, countries that have joined the European Union adopted the EU gender equality legislation that might increase the awareness for gender equality independent of the degree of patriarchal values in the society (even though the implementation of gender equality laws might be very much dependent on patriarchal attitudes in societies).

5.3 Gender equality in educational achievement

5.3.1 Importance of subject and value added

Gender equality in education is one of the preconditions for women's and men's equal opportunities in the labour market. Data on educational enrolment show gender parity in educational access for transition countries, indicating that girls are not worse off than boys regarding their human capital.

In contrast to the predominant part of the literature, Chapter 3 used educational achievement data (measuring what pupils actually know in terms of 'functional literacy' or ability) instead of educational enrolment data (like data on access to education in terms of enrolment rates or figures capturing the progression up national educational systems) for the examination of gender inequality. The first question examined was whether gender parity in educational access generally found for transition countries translates also into gender equality in educational achievement.

One value added of the use of achievement data derives from the disadvantages of educational enrolment data. Educational enrolment is difficult to compare across countries due to institutional differences in how education is organised. Reaching a given level of education may correspond to very different levels of learning in absolute terms from country to country. In addition, the focus on quantitative balances in educational access does not reveal whether gender equality is achieved in regard to educational outcomes. Equality of learning achievement is important since it is related to gender equal job opportunities and earnings.

The second guiding research question and value added of Chapter 3 was to examine whether results on gender equality in achievement are robust across three international surveys of learning achievement that are generally examined in isolation.

Gender differences in educational achievement in transition countries were compared with pre-1990 OECD countries. In addition, determinants of gender inequalities and gender-specific distributions of achievement were examined.

5.3.2 Data used, methods applied and main results

Three different surveys with five different rounds were used for the analysis. TIMSS rounds 1999 and 1995, PISA 2000 and PISA + (conducted in 2002) and PIRLS 2001 (see Table 3.2 in Chapter 3).

The Chapter used several different methods for facilitating the comparison of survey results e.g. by comparing z-scores for central tendency and dispersion. In addition, gender differences in mean achievement were compared across surveys, offering also interpretations

of what these gender differences mean in terms of something readily understood (e.g. using Kernel density functions). For the estimation of determinants of gender inequalities similar OLS regression models were run for each survey in order to ensure the comparability of survey's regression coefficients. The analyses of the educational achievement data were conducted by taking the complex multi-stage survey design into account.

Main results are as follows:

A *Do different surveys show robust results on gender equality in educational achievement in transition and compared to OECD countries?*

- Correlation coefficients of gender differences in educational achievement scores for the same subject range from 0.56 to 0.64 showing moderate agreement between surveys.
- Survey results show consistently that boys' disadvantage in reading seems to be slightly more pronounced in transition than in OECD countries while girls' lower skills in maths compared to boys' are a more predominant pattern for OECD countries.

B *Does gender balance in educational access in primary and secondary education translate into gender equality in educational achievement?*

- No. PIRLS and PISA data reveal consistently a greater disadvantage of boys in reading achievement. This female advantage in reading is also much greater than boys' advantage in maths and science found in some transition countries (and many more OECD countries): e.g. the achievement gap between boys and girls can be expressed school progression. On average, Russian girls are about one and a half year of schooling ahead of their male counterparts in reading achievement while they lack 'only' about half a school year in TIMSS science compared to boys. In addition, 20 percent more boys than girls have serious deficiencies in PISA reading abilities in Albania, Macedonia, Bulgaria and Latvia.
- The regression frameworks show consistently across surveys that the descriptive results on gender inequalities in educational achievement do not change once it is controlled for pupils' socio-economic status. In addition, the results of gender and socio-economic background interaction variables in the regression framework indicate that the impact of socio-economic determinants on educational achievement is not significantly different between genders in transition countries.
- In reading achievement gender differences are greatest at the bottom of the achievement distribution. Hence, the very low ability in the lower percentiles of

boys' educational achievement distribution drives the great male average disadvantage in reading achievement. On the other hand, it is the very high ability of boys in the upper percentile that determines girls' general disadvantages in science achievement.

5.3.3 Limits of the analysis

The surveys cover only 13 of 27 transition countries excluding Caucasus and Central Asia. In both regions educational expenditure plummeted, the purchasing power of teachers' wages decreased, simultaneously the population of basic-school-age children increased and traditional values rose at the beginning of the 1990s. This specific combination of regional patterns in Central Asia and the Caucasus is likely to have impacted on gender equality in educational achievement in both regions differently than in the transition countries covered by educational achievement surveys. Hence, results of Chapter 3 cannot be generalised for the whole region of CEE.

In addition, the surveys' data on school children cannot shed light on gender equality of children not enrolled in school or attending special schools (since special schools are often excluded from the target samples of educational achievement surveys). However, this seems to be a minor issue given the observed gender parity in educational access in the transition countries.

5.3.4 Policy implications and further research

Two main policy implications can be derived from these results:

First, obviously educational institutions in transition as well as OECD countries do not manage to equip boys and girls equally for their later life time careers. The lowest low achievement of boys at the bottom end of the reading achievement distribution indicates that many male pupils will face great difficulties to catch up with their female counterparts over time. Given that the average gender gap in transition countries is slightly higher than in OECD countries and especially great in Albania, Latvia, Macedonia and Bulgaria, educational policies should aim at fostering boys' educational achievement.

Generally, a promising remedy is to provide additional schooling to pupils from disadvantaged backgrounds in order to improve those children's educational achievement and decrease educational dispersion. Given that gender differences in achievement are not related to pupils' socio-economic characteristics, fostering pupils from disadvantaged family backgrounds seems not a promising policy implication for decreasing the gender gap in

educational achievement.[144] However, given the great gender disadvantage at the bottom of the achievement distribution a general promotion of the lowest low performing students would greatly help to decrease the gender gap in reading achievement (and it would also help to decrease the great educational dispersion existent in some transition countries (see Sub-section 3.2)).

Second, another policy implication might be that there is no need of action regarding girls' and young women's educational outcomes since they fare well compared to their male counterparts in educational achievement. However, Chapter 3 was limited in its approach by focusing only on gender equality in achievement in compulsory schooling. It did not examine gender equality in educational outcomes like labour market opportunities. There is further need to explore whether women and men with equal educational achievement face equal opportunities of using their human capital and gaining from it in transition countries. There is some literature showing for the West that women fare worse than men in the labour market even though their skills are higher (Leslie, 2003). Also in transition countries there are many factors like gender pay gaps and occupational segregation (see Chapter 1) indicating that even though women are better qualified at the end of secondary schooling in terms of educational achievement they are worse off than men in the labour market.

5.4 The feminisation of poverty

5.4.1 Importance of subject and value added

Literature discussing the 'feminisation of poverty' in CEE generally suggests that women were the most vulnerable group during transition and therefore more likely to fall into poverty than their male counterparts. In the case that this assumption of an increase in gender inequality in poverty were right, this would be a sign that the newly emerged democracies failed in creating equal living conditions and converging societies in CEE. In addition, recent research indicates that women's lower access to economic resources leads not only to their own shortage of items and activities but is also related to lower expenditures on children's goods and services.

However, the widespread view that there has been a feminisation of poverty is difficult to substantiate given the lack of systematically gender-disaggregated data. Household data generally used for poverty analyses lack information on intra-household distribution of household resources. As a result, all household members in one household are assumed either

[144] Nevertheless, additional schooling for pupils from lower socio-economic background still might decrease the gender gap if lower performing students (for reading predominantly boys) catch up faster than better performing students. The way how additional schooling is offered (e.g. tracking pupils by ability or schooling in comprehensive classes) would certainly impact upon genders' achievement.

to be poor or not poor. Hence, an important supposition of these poverty analyses are that members of the household share resources in a fair and equal manner (unitary household assumption). Given that recent research suggests that this assumption is wrong and that women might partly have lower access to household resources than men the suitability of household data for measuring a society's feminisation of poverty is called into question.

The value added of Chapter 4 was to overcome the problem of the unitary household assumption by estimating the feminisation of poverty in transition countries using subjective poverty measures of economic well-being. Hence, individual and not household data were the starting point of the analysis. Based on this subjective poverty approach, Chapter 4 contributed results regarding three questions: First, is there indeed evidence for a feminisation of poverty in transition countries? Second, is the feminisation of poverty in CEE countries greater than in OECD countries? Third, did the feminisation of poverty increase during the transition process? To the author's knowledge, there is no study that investigates these questions with objective or subjective poverty measures for a large set of transition countries.

5.4.2 Data used, methods applied and main results

Two different questions on subjective well-being were used for the estimation of the feminisation of poverty in order to evaluate how far results of different measures are robust. Data derived from the World Value Survey (WVS) rounds from 1989-1992 and 1995-1997 and the International Social Survey Program (ISSP) round from 1999. The first data source provides information at which level on a scale from 1 (not at all satisfied) to 10 (very satisfied) individuals estimate their financial satisfaction with their household. The latter data give respondents' level on a scale from 1 (at the bottom) to 10 (at the top) regarding their estimation of their own position in society. Both questions examine individuals' own perception of their societal position or their households' financial situation. For the analysis, the 'subjectively poor' were defined as those who estimate their societal position or their financial satisfaction as low (respondents below level 4 on both scales).

Gender differences in subjective well-being unconditional and conditional on respondents' background characteristics were examined across countries and regions with the means of descriptive and multivariate analysis (logistic regressions). In addition, the chapter investigated regional and gender differences in the determinants of subjective well-being as well as changes of subjective poverty over time.

Main results were as follows:

1. Is there indeed evidence for a feminisation of poverty in transition countries?

Agreement on countries' rank regarding their population's share of the subjectively poor was high between both subjective but small in terms of countries' rank on the gender gap in subjective poverty incidence. However, throughout all transition countries and for both measures men are never worse off than women regarding their subjective well-being.

Transition countries differ greatly in the gender differences of subjective poverty incidence. About 8 to 10 percent points more women than men are dissatisfied with the financial situation of their household in Latvia, Moldova, Georgia, Ukraine and Slovakia. The gender gap is similarly high in Hungary and the Czech Republic for the measure of societal position. For both the financial satisfaction and societal position poverty measure about 5 percent points more women than men are subjectively poor (based on 17 and 8 transition countries respectively).

Women's greater poverty risk remains significant once respondents' background characteristics are controlled for. Nevertheless, between-country differences in absolute poverty incidence are much larger than gender differences in poverty incidence within transition countries.

The impact of some respondents' characteristics on poverty incidence is gender sensitive. Consistent across subjective poverty measures and conditional on other respondents' characteristics, unemployment increases the poverty risk much more for men than for women while higher education reduces men's poverty risk much more than that of women. In contrast to literature based on household data, the impact of age and retirement on poverty risk is not significantly greater for women than for men.

2. Is the feminisation of poverty in CEE countries greater than that in OECD countries?

Once controlled for socio-economic and demographic characteristics, there is no significant impact of gender on poverty in OECD countries while it persists in transition countries. The result is robust for both measures of subjective poverty.

3. Did the feminisation of poverty increase during the transition process?

Out of a sample of 7 transition countries only in two countries (Latvia and Belarus) did the feminisation of poverty increase and in one country (Bulgaria) did the gender gap in subjective poverty decrease based on the financial satisfaction measure. In Poland, Slovenia, Estonia and Russia and a pooled sample of OECD countries, gender differences in subjective poverty did not change significantly from 1989-1992 to 1995-1997. Hence, given subjective

data there is little evidence of a consistent regional pattern that women fared worse during the transition process than men.

5.4.3 Limits of analysis

The use of subjective well-being data is arguably controversial since the comparability of respondents' judgement within and across countries is called into question. Section 4.2 discussed problems of the subjective well-being measure in greater detail. In line with recent and growing literature the assumption of Chapter 4 was that data on subjective well-being is meaningful. In this context it is important to note that also objective poverty measures have important shortcomings.

Closely related to this is the issue as to which question should be used for measuring subjective well-being and how to interpret these questions. The choice of a suitable question had to meet data availability that is very limited for a great range of transition and OECD countries. The question on individuals' societal position derived from the ISSP is very general and covers what was considered as a multidimensional concept of subjective well-being. The question on financial satisfaction derived from the WVS, however, was interpreted to measure the financial dimension of subjective well-being. Hence, in this Chapter both questions are interpreted to measure subjective well-being. As a consequence, it is assumed that respondents below a certain threshold (level 4) can be considered as being 'subjectively poor'. Nevertheless, it is arguable, on the basis of which factors respondents judged about their level on the scale especially once their societal position was concerned. Furthermore, it is difficult to examine what different dimensions of individuals' well-being the questions are addressing.

In addition, as discussed in detail in Chapter 4 the choice of a 'subjective poverty line' at level 4 is arbitrary. (Nevertheless, the choice of the threshold dividing between poor and non-poor is a general problem also of the objective poverty measure.)

The financial satisfaction question asks people about their satisfaction with the *household's* resources. Ideally, I would have wished to find a question asking about respondents' satisfaction with their *individual resources* since the strength of using subjective poverty measures is to overcome problems of measures deriving from the black box of within-household distributions of resources. However, both questions ask about respondents' own judgement and provide therefore a measure at the individual level (in contrast to the household level data of the objective poverty measure).

The low agreement regarding countries' rank on gender differences between objective and subjective poverty measures indicates that results are very much dependent on the poverty

measure used. (This stands in contrast to results on countries' rank regarding their poverty rate where agreement between objective and subjective poverty results was relatively high.)

The estimation of changes in the feminisation of poverty over time was limited in three perspectives: first, cross-sectional data were only available for the financial satisfaction poverty measure; second, countries with a high gender gap in poverty incidence in the mid 1990s were underrepresented in the country sample for which cross-sectional data were available; third, the time period and time points available to measure changes in gender differences varied between countries.

5.4.4 Why results do matter, policy implications and research outlook

The focus on individuals' well-being enshrines importance per se in contrast to e.g. well-being or poverty incidence of households. Governments in CEE are committed to human rights. In general, we tend to think of rights as an individual concept. Hence, the measurement of individuals' well-being seems therefore to be appropriate in order to measure gender inequalities in well-being.

Furthermore, equality of well-being and financial satisfaction can also be regarded as a more desirable objective for poverty policies than equality of income. Hence, satisfaction in well-being or economic welfare is certainly a key target variable of economic policy and is also closely related to individuals' support for the political and economic system in transition countries.

As long as the measurement of poverty incidence is concerned it was the motivation of the research approach conducted in Chapter 4 that household data are only of limited use for the estimation of the feminisation of poverty as long as there persists the lack of attention to a gender-disaggregated data collection in large-scale household surveys. However, policy research up to now uses greatly household data for the examination of gender differences in poverty incidence. It ignores therefore the problem of the unitary household assumption or it accepts the limitations of poverty results, focusing only on households with gender-specific characteristics (instead of individuals in households). In this context, subjective poverty measures might be rising in their importance as alternative measures of the feminisation of poverty.

However, there is a lack of research examining how far objectively measured income or consumption have power in explaining subjective measures of well-being and this is even more true regarding gender inequality of poverty incidence. Chapter 4 showed that results of countries' rank on gender differences in poverty incidence obtained with one measure are not necessarily concurrent with those based on another measure. This might be simply due to the

fact that I compared apples with pears. For example, objective data can only show gender differences in poverty by focusing on gender-specific household types but subjective well-being was measured across the whole population.[145] Furthermore, the gender differences observed resulted from very different measures of subjective and objective poverty. Hence, as long as it is not clarified how far different poverty measures are related, results on the feminisation of poverty cannot be separated from the method with which they were obtained.

However, this does not mean that at the current stage indicators for measuring the feminisation of poverty are useless for the formulation of poverty policies. In contrast, it is possible to imagine a complementary interpretation of indicators measuring the feminisation of poverty: differences in results between different poverty indicators might reflect that policy strategies need to be as multi-dimensional as the concept of poverty is.

Just to use one country example: in the Czech Republic compared to 22 other transition countries gender differences in poverty incidence between female and male headed households are around average, between single parent and households with children they are the highest and between male and female headed single elderly households they are one of the lowest (see Table 4.1). In addition, gender differences in financial satisfaction with the household are one of the lowest out of 17 transition countries while gender differences in societal position are the highest compared to 7 other transition countries. Results might not be as contradictory as they seem. Poverty differences between male and female headed households might be driven by the big disadvantage single mothers and their children are facing in the Czech Republic. Hence, financial transfers to single parents are one policy implication that is likely to reduce gender differences in objective poverty incidence. The inexistence of a gender gap regarding financial satisfaction with the household might indicate that women's share of household resources is similarly equal to those of men, indicating a gender equality of within-household distributions of resources. In contrast to the household level, on the societal level women feel more disadvantaged than men in the Czech Republic which might indicate e.g. the existence of gender barriers in the labour market.

Nevertheless, these different conclusions regarding different poverty measures are up to now greatly based on assumptions. There is a clear need to investigate what measures of the feminisation of poverty do actually examine, how far poverty measures are coherent, what factors can explain disagreement between poverty measures and what different poverty

[145] I also estimated differences in subjective poverty incidence between female and male headed households and single parent families and other households with children for both subjective poverty measures used in Chapter 4. Even if the unit of analysis was equalised the agreement between objective and subjective measures did not increase. This might be partly explained by relative small sample sizes available for subjective poverty measures.

measures can contribute in terms of policy implications for reducing the gender gap in subjective and objective poverty incidence.

Nevertheless, while countries' rank differed regarding gender differences in subjective well-being, regional results of subjective poverty measures showed some robust results that can be used for deriving some principal policy implications and further research interests. For example, the gender gap of subjective poverty incidence is greater in transition than in OECD countries, indicating the clear need to address women's well being in CEE through a policy agenda.

Furthermore, unemployment has a higher negative impact on men's than on women's subjective well-being in transition countries. (In OECD countries, a similar 'effect' is not found; this result was not discussed in Chapter 4). On the other hand, investment in education is a more successful poverty reduction strategy for men than for women.

For a formulation of policy implications it is necessary to examine which factors determine these gender-differences in the poverty risk related to unemployment and education and how far these factors can explain differences between transition and OECD countries.[146]

It is noteworthy, that women do not face a disadvantage in educational achievement and attainment in general in the transition countries examined (see Chapter 3). Hence, policy implications often recommended for developing countries like aiming at reducing the gender gap in education attainment are unlikely to reduce women's poverty incidence in CEE.

Caution is also important given the difficulties the implementation of policies aiming at the reduction of women's poverty disadvantage generally enshrines. For example, policy implications deriving from household level data have often failed to address women since intra-household dynamics were not taken into account or only male heads of the household were targeted. (Baden and Milward, 1997) Some research results also show that special policies designed to address poor women (credit programmes and employment programmes or income transfers) do not necessarily result in women's net benefits due to intra-household dynamics that control and reallocate resources. (Anker, 1995).

[146] For example, it could be assumed that a) women live in support networks of the family that males do not have access to and b) that men's subjective well-being is more influenced by their labour market position than that of women due to e.g. psychological and cultural reasons. A greater gender equality in attitudes to women's and men's role in the family and labour market might decrease the psychological stress men probably face once they are unemployed and that might impact upon their economic well-being in transition countries. At least, in OECD countries where the attitudes to the gender division of work are much more liberal (see Chapter 2), subjective poverty risk due to unemployment is gender neutral. However, there might be many other reasons explaining the transitional gender-related impact of unemployment on poverty.

5.5 Concluding remarks

The transition process from centrally planned to market economies led to a dramatic fall in GDP accompanied by a tremendous increase in poverty and income inequality in Central and Eastern Europe (CEE). Much of the literature argues that the costs of the transition process were not distributed equally but women had to bear a higher burden.

This study aimed at assessing gender equality in transition countries about 15 years after transition in three areas that are important for women's economic empowerment: the labour market, education and poverty. Large and complex data sets on people's attitudes and judgements and pupils' educational achievement were analysed with different statistical methods in order to examine various aspects and determinants of gender inequality for a great set of transition countries. Pre-1990 OECD countries served as a yardstick for the assessment of gender inequality in CEE.

The value added of the study was the cross-national analysis of new data sets for the examination of gender inequality in CEE. In addition, alternative measures of gender equality were applied and compared to economic indicators generally used for the estimation of women's disadvantage. The application of these new data sets and alternative indicators is rewarding in terms of new insights into different aspects of gender inequality in transition countries. Some results are summarised in the following.

Labour market

In Chapter 2, attitudes on women's work in the labour market served as a proxy for measuring gender inequality. People in transition countries adhere quite homogenously to the traditional gender division of labour and differ therefore greatly from people in OECD countries who are mostly in favour of women's work in the labour market. The great differences between East and West regarding attitudes to women's work stand in contrast to economic indicators that suggest that transition countries reach similarly high levels of gender equality in the labour market than the West.

Results of a decomposition analysis revealed that the great East-West differences in patriarchal attitudes derive mainly from regional differences in the impact of individuals' characteristics and not regional differences in the levels of these characteristics. However, differences between countries regarding patriarchal gender attitudes are not predominantly driven by men as could be assumed but women and men almost similarly exhibit traditional views on women's work in the countries examined. The analysis of changes of patriarchal attitudes over time (based on cohort analyses and ordered logit regressions of two different time points) indicated that the East-West gap is likely to even increase with the pattern that

between-country differences in patriarchal attitudes decrease in OECD but grow in transition countries.

Educational achievement

While educational enrolment data generally used for estimating gender equality in education suggest gender parity in educational access, the indicator of educational achievement (based on pupils' test score data) applied in Chapter 3 shows that it is boys and not girls who face considerable disadvantage in terms of their literacy skills. This gender gap is even greater in transition than in OECD countries. A multivariate analysis showed that the impact of socio-economic determinants of educational achievement is not significantly different between genders in CEE.

Results of this study are predominantly robust since my evidence derived from three different educational achievement surveys that previous authors have generally analysed in isolation: the Programme of International Student Assessment (PISA), the Progress in International Reading Literacy Study (PIRLS) and the Trends in International Maths and Science Achievement (TIMSS).

Feminisation of poverty

The feminisation of poverty is usually examined on the base of income or consumption data deriving from household surveys that lack information on intra-household distribution of resources. Such analyses assume that members of the household share resources in a fair and equal manner. The value added of Chapter 4 was to overcome the problem of this unitary household assumption questioned in recent literature by using data on subjective economic well-being at the individual level (hence men and women are asked separately about their living standards). The analysis of two different data sources (World Value Survey and International Social Survey Programme) on subjective economic well-being indicated that women in transition countries fare worse than men and that the relative gender gap is greater in the East than in the West. (This result derived from the examination of both gender differences in subjective well-being conditional and unconditional on respondent's background characteristics using logistic regression analyses.) However, in contrast to the general belief that women fell more pronouncedly into poverty than men during transition, subjective well-being data suggest that the gender gap in poverty incidence was already a pre-transitional phenomenon.

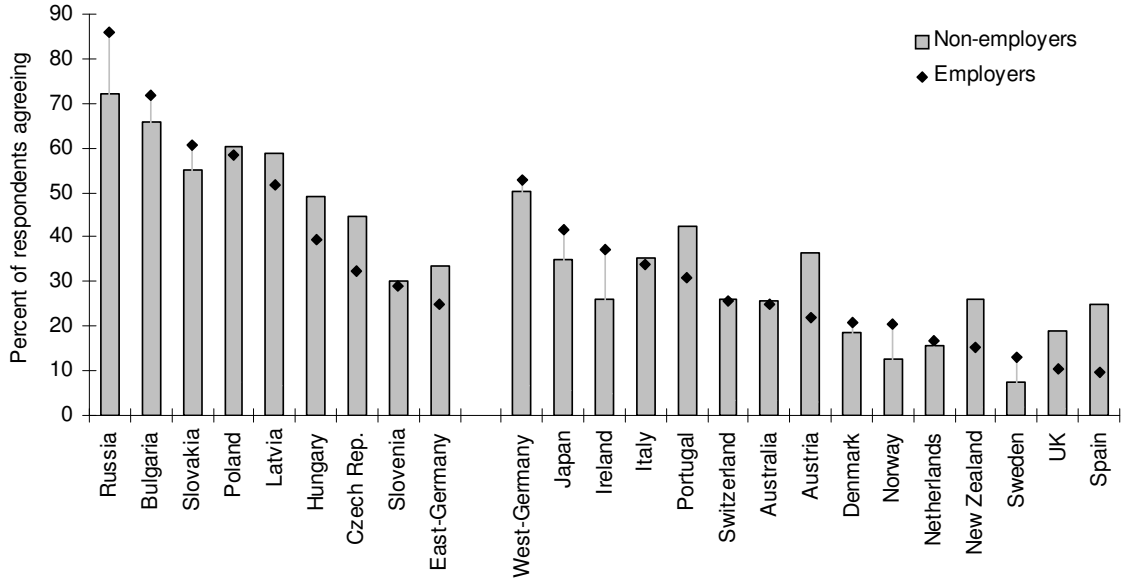
Policy implications and the outlook for further research differ depending on the subject examined in each Chapter and were discussed in detail in this Chapter. However, one

basic result from the application of alternative measures of gender inequality was similar throughout all Chapters: results on gender inequality in transition countries were generally not robust to the choice of different measures. Gender inequality in education differs depending on whether the focus is on educational attainment or educational achievement. Gender inequality in the labour market can be assessed very differently depending on whether common economic indicators are used or whether an indicator is used of attitudes to women's work. And country rankings on women's poverty incidence do depend on which objective or subjective poverty measure is applied.

However, it was not the major issue of this study to question the robustness of results of indicators generally used in the literature for the examination of gender inequality in CEE. This study stresses that further research needs to address how far different gender inequality measures are coherent, what factors can explain disagreement between measures and subsequently what policy conclusions can be drawn from the analyses using different indicators of gender inequality. This Chapter discussed some possible approaches for investigating these issues.

5.6 Appendix

Figure A 5.1: Percent of employers and non-employers agreeing with the statement that it is a husband's job to earn money and a wife's job to look after the home and family



Source: ISSP 1999, author's calculations. Note: employers are self-employed with at least one employee.

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