

# Education and socioeconomic mobility in post-communist countries

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## Abstract

Patterns of intergenerational educational mobility are studied in twelve post-communist countries of Central Europe and the former Soviet Union. No clear trend in educational inheritance emerges over the recent 50 years, covering both the period of socialism and transition to a market economy. This is contrary to expectations formed by the existing literature that claims considerable weakening of the correlation between parental education and that of their children during the period of socialism. If any, we find the decrease in intergenerational persistence up until the generation of the 1950s. In subsequent years no further decline is observed. On the contrary in a number of states the correlation between parents' and children's schooling got stronger, further increasing over the period of transition.

*Key words:* educational mobility, post-communist countries

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## 1 Introduction

Education is considered a strategic resource in a modern knowledge-based economy, as well as the main prerequisite for socioeconomic mobility. Given so much emphasis on increasing educational attainments, one would expect educational mobility to be also on the rise. The available literature suggests this has not always been the case.

This paper investigates the trends in intergenerational educational mobility in twelve post-communist economies<sup>1</sup> in Central and Eastern Europe (CEE) and the former Soviet Union (FSU) for which little empirical evidence has been made available thus far. These countries witnessed a spectacular increase in educational attainments during the socialist era, this being one of the main achievements of those times. The central question addressed here is whether such achievement has been accompanied by an increase in educational mobility.

We shall test three hypotheses, respectively that (i) the relation between education of parents and their children weakened during the socialist era; (ii) the current levels of educational mobility in post-communist countries are higher than in their Western counterparts, despite the fact that (iii) transition to market economy caused an increase in educational persistence.

We first provide an overview of the available studies on intergenerational mobility in post-communist economies followed by a description of the data and methodology used to approach the issue. We then present the results and discuss the main findings. The final section makes some concluding remarks.

## 2 Pre- and post-reform perspectives

In all the socialist countries education was offered free of charge. This was expected to eliminate one of the main barriers between the different strata of society with regard to access to knowledge.<sup>2</sup> The idea was that a much facilitated entry into education would increase social mobility, in particular for the members of the working class and their children. The specific expectation that this created among scholars was that intergenerational educational mobility would increase during the socialist era, surpassing the levels achieved in Western economies.

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<sup>1</sup> These comprise Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia, Romania, Russia and Ukraine.

<sup>2</sup> Other institutions sustaining the class structure of society, e.g. private property, were also challenged, but this topic falls outside the scope of this paper.

Some of the most recent studies, including Hertz et al. (2007) and Pfeffer (2008), do not find considerable change in intergenerational educational mobility over the twentieth century in a wide range of both developed and developing countries, as if there are intrinsic forces keeping it relatively stable. Pfeffer (ibid.) goes so far as to call educational mobility patterns and rates pervasive characteristics of nations. It would thus be important to understand whether communist regimes managed to overcome this limit.

One of the factors that might hinder the increase of intergenerational education mobility alongside the general rise of educational attainments, is the tendency of parents to provide their children with at least the same level of education as their own.<sup>3</sup> This holds true in any setting, be it capitalist or socialist economy. The new elites assuming power in communist regimes may have exercised control over the channels of intergenerational mobility in order to facilitate the desired life courses of their children, thus behaving in the same manner as the bourgeoisie did before them. Parents' involvement in the education careers of children takes different forms depending on how the education system operates. In contexts where education is free, the number of positions at higher levels is usually rationed. Thus higher-status parents in socialist countries might have strived to facilitate entry into higher or higher quality education for their offspring. Moreover, as long as the average educational attainments increase, the share of parents who would favour educational persistence would also increase.

The transition to market economy can be seen as another countervailing factor. It was expected that, with the launch of market-oriented reforms and the concurrent near abolition of free education, the role of the family background would gain importance and educational mobility would decline as a result.

Testing these hypotheses is made difficult by the fact that investigation of the communist period affords a long time-perspective but is limited by lack of data. Conversely data are now available for the transition and post-reform periods, for which, however, the time span may still be too short to reconstruct a clear trend. Different research methods have been proposed to overcome data limitations, at least in part, and some empirical evidence on the intergenerational educational mobility in post-communist economies is already available.

In one of the first studies to appear, Ganzeboom & Nieuwbeerta (1999) considered six Eastern European countries, including Bulgaria, Czech Republic, Hungary, Poland, Slovakia and Russia. The authors concluded that the effect of parents' education decreased by about half from 1940 to 1985, but remained

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<sup>3</sup> Breen & Goldthorpe (1997) modeled this behavior within the framework of formal rational action theory, despite the fact that the parents' decision is often taken irrespective of the abilities that the offspring shows.

at the high end of the spectrum in international comparisons.<sup>4</sup> This would imply that the socialist systems were unable fully to exploit the potential of education in order to facilitate intergenerational mobility.

Since then, a number of country-specific studies have appeared (Beblo & Lauer, 2004, for Poland; Gang, 1996 and Varga, 2006, for Hungary; Hazans et al., 2008 for the Baltic States), and practically all of them claim that parent's education has a strong positive effect on children's educational attainments in post-communist economies.

Most of the studies nevertheless confirm that some increase in educational mobility took place, especially in the post-World War II period. However, there is no consensus as to its order of magnitude or how long the temporary improvement lasted. There is even less consensus on the direction of the current trends or on current levels of educational mobility, since both depend on how country-specific institutions developed during the reforms. Several recent studies claim that intergenerational educational mobility may have declined over transition, this being the case for Bulgaria (Hertz et al., 2009) and Russia (Gerber & Hout, 2004).

In what follows we shall re-consider these issues for a much larger number of Eastern European countries than examined by any of the existing studies, and we shall use the same methodology across the countries. Our specific focus is on three hypotheses, respectively that (i) the relationship between education of parents and their children weakened during the socialist era; (ii) current levels of education mobility in post-communist countries are higher than in their Western counterparts, and (iii) transition to a market economy has caused an increase in educational persistence.

We shall look at both pre- and post-reform periods. The divide between the two is more marked for the FSU countries, where the launch of market-oriented reforms coincided with the break-up of the Soviet Union. For other countries in Eastern Europe, the timing of reform and the starting conditions varied. Some of these countries had preserved elements of a market culture, and thus were better prepared for the great transformation, while for others the transition came as a shock after almost half a century of domination of socialist system. As a result, the patterns of intergenerational educational mobility are also likely to vary among transition countries, despite the fact that earlier they all adhered to socialist ideals and currently all accept the market economy. Yet, thanks to the much more open economies, worldwide increase in labour mobility and the easy dissemination of behavioral models, educational choices

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<sup>4</sup> The coefficients obtained by regressing the education of children against that of their parents were at the level of 0.4-0.6 for Bulgaria, the Czech Republic, Hungary, Poland, and Slovakia. Only for Russia were they found to be lower, 0.28 for men and 0.33 for women.

have changed there as well. What needs to be investigated is how they have changed.

### 3 Data and measures used for the analysis

We use education as a proxy for status in a society, and in order to trace its transmission across generations, we look at how the education of parents and children relate to each other. We rely on two basic measures for this purpose: the coefficient obtained by regressing the years of education of an individual against that of his(her) parents, and the correlation between the two levels of education. As emphasized in Hertz et al. (2007) these two measures yield different pieces of information. The regression coefficient shows the change in the expected level of education of children in response to a one-year change in the education of their parents. The correlation coefficient measures the correspondence between one standard deviation change in parents' education and one standard deviation difference in the schooling of their children.<sup>5</sup>

Hertz et al. (2007) documents a substantial decline in the regression coefficients for a set of the 42 countries considered, which indicates a weakening of the statistical association between the education of children and that of their parents, not a weaker causal relation. However, the explanatory power of parents' education for the education of the next generation ( $R^2$  in the bivariate regression) remains fairly stable, which is also reflected in the fact that the correlation coefficient is stable around a value of 0.4. The study thus concludes that parental schooling by itself now explains as much of the variance of children's schooling as ever. The above-mentioned study included several post-socialist countries, but it did not focus specifically on the latter. Given the distinctiveness of these countries with regard to education, it is worth focusing on a larger number of them and asking more specific questions. This is what we do in this paper. The 12 ex-socialist countries that we consider are listed in Table 1, which also reports the data source and the size of the sample used for each country.

The sources of data include the European Social Survey (ESS) and the EU Statistics on Income and Living Conditions (EU-SILC). For the countries covered by the EU-SILC, we use the years of education reported in the main survey, while drawing information on the education of parents from the special 2005 module on the intergenerational transmission of poverty. The module includes a question about the highest level of education attained by the father and the

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<sup>5</sup> The relation between the two measures is as follows:  $r_s^c = \beta_s^c(\sigma_0^c/\sigma_1^c)$ , where the indexes  $^c$  and  $_s$  stand for cohort and schooling,  $\sigma_0^c$  and  $\sigma_1^c$  are standard deviations of schooling in two successive generation.

mother. The ESS provides similar type of information as the EU-SILC. Note that imposing age limits and dropping observations with missing education implied a reduction in the size of the sample as shown in Table 1.

Table 1  
Data used for the analysis

Country	Year	Dataset <sup>†</sup>	Number of observations used <sup>c</sup> (out of total)	Men/Women
Czech Republic	2005	EU-SILC <sup>a</sup>	5.751(8.628)	2.768 / 2.983
Estonia	2005	EU-SILC	5.570 (9.643)	2.593 / 2.977
Hungary	2005	EU-SILC	9.611(14.791)	4.570 / 5.041
Latvia	2005	EU-SILC	4.770 (7.913)	2.119 / 2.161
Lithuania	2005	EU-SILC	6.251(9.929)	2.825 / 3.426
Poland	2005	EU-SILC	23.699 (37.671)	11.223 / 12.476
Slovakia	2005	EU-SILC	8.394 (12.879)	3.966 / 4.428
Slovenia	2005	EU-SILC	5.356 (23.862)	2.612 / 2.744
Bulgaria	2006	ESS <sup>b</sup>	965 (1.400)	356 / 609
Romania	2006	ESS	1.389 (2.139)	656 / 733
Russia	2006	ESS	1.539 (2.437)	641 / 898
Ukraine	2006	ESS	1.352 (2.002)	532 / 826

Note: Source: <sup>a</sup>The European Union Statistics on Income and Living Conditions. <sup>b</sup>European Social Survey.  
<sup>c</sup>The size of the samples is restricted by the number of observations with complete information on own and parental education.

The education of parents was reported in the form of the highest level achieved. Levels of education were thus converted into years by exploiting observations for which both years and level were reported individually (see Tables A.1-A.2 of the Appendix). We first carried out the estimation on a year-by-year

Table 2  
Observations by countries and age cohorts

N <sup>o</sup>	Cohort	Czech Republic	Estonia	Hungary	Latvia	Lithuania	Poland	Slovakia	Slovenia	Bulgaria	Romania	Russia	Ukraine
1	1935-'39	-	-	-	-	-	-	-	-	108	98	141	180
2	1940-'44	777	696	1284	664	802	2078	826	598	132	177	116	126
3	1945-'49	792	642	1087	490	718	2752	932	575	128	166	177	156
4	1950-'54	803	741	1342	627	843	3605	1238	756	123	188	202	191
5	1955-'59	664	820	1295	681	1008	3698	1212	741	125	130	193	150
6	1960-'64	606	822	1019	658	993	3092	1190	690	91	131	175	129
7	1965-'69	628	708	1115	626	749	2692	904	683	99	191	189	144
8	1970-'74	715	608	1189	524	588	2771	935	640	84	182	183	134
9	1975-'79	766	533	1280	500	550	3011	1157	673	75	126	163	142
	Total	5751	5570	9611	4770	6251	23699	8394	5356	965	1389	1539	1352

Source: Own calculations using EU-SILC 2005 and ESS 2006 as specified in Table 1.

basis for all the countries. Because the noisy picture obtained was not easy to interpret, and because the results may have been influenced by unequal sizes of age-groups, we decided to rely mainly on by-cohort estimates. The data were divided into nine 5-year birth year cohorts as described in Table 2. Because the youngest and the oldest respondents were excluded, the age interval of our observations spanned the ages from 26 to 66 in EU-SILC, and 25 to 69 in ESS.<sup>6</sup>

Table 3  
Years of education

Country	Range of years of education		Average years of education			
	Parents	Children	Parents		Children	
			Cohort 1	Cohort 9	Cohort 1	Cohort 9
Czech Republic	4 / 15	4 / 15	8,9	10,2	10,1	10,8
Estonia	2 / 15	2 / 15	6.0	11.5	10.5	10.9
Hungary	2 / 15	2 / 15	6.0	10.0	9.2	10.7
Latvia	2 / 15	2 / 15	6.1	10.4	9.1	10.0
Lithuania	2 / 15	4 / 15	4.0	10.9	10.1	11.5
Poland	2 / 15	2 / 15	4.1	8.7	7.9	11.0
Slovakia	4 / 15	4 / 15	7.1	10.3	10.3	11.1
Slovenia	2 / 15	2 / 15	5.1	8.4	8.1	10.6
Bulgaria	3 / 16	1 / 22	6.8	10.4	10.6	11.9
Romania	2 / 18	0 / 25	4.7	10.7	7.9	12.7
Russia	4 / 18	3 / 22	6.2	12.4	10.9	13.7
Ukraine	3 / 17	0 / 25	5.7	12.1	10.3	12.5

Note: Parental education represents the mean between the education of mother and father.

Source: Own calculations using data as specified in Table 1.

Table 3 reports the range in years of education for both the parents and their children. Note that for some countries zero values are not allowed. This depends on the classification used in the questionnaire, but should not be a problem in a context where everybody is expected to obtain at least basic level of education.<sup>7</sup> Parent education is measured by the average value for

<sup>6</sup> This notwithstanding we need to be cautious about the results obtained for the two extreme cohorts. Some young people may still be enrolled at school (about 2-4%) and thus the reported years of education are not always final. Also education for older generations may have been different in quality and content.

<sup>7</sup> This was probably the motivation behind the coding for education, and it may

the mother and the father. When the information is missing for either parent, the remaining value is treated as the average value for the couple in order to maximize the number of observations.

All of the datasets involved in this study lack information on children who live outside the household. Parent education is reported by children independently of whether they lived in or out of the household, or whether they were still alive or not. Whilst this ensures wider coverage, recollection by children may be problematic.

Table 3 also reports average years of education for the first and the ninth cohorts, with separate records for parents and children. The figures for children are often twice as high as those for parents, providing evidence of a considerable increase in educational attainments in the countries under consideration in the second half of the twentieth century.

## 4 Empirical findings

We first estimated the two basic measures of educational persistence as described in the previous section. For the six countries in common with the study of Ganzeboom & Nieuwbeerta (1999), the values obtained for the correlation and regression coefficients were broadly comparable, with the sole exception of Bulgaria. For this country we found much higher educational persistence, as can be seen from Table 4. Our findings are probably driven by the sharp decline in intergenerational mobility in post-socialist Bulgaria also documented in Hertz et al. (2009).<sup>8</sup>

Overall, no clear pattern emerges for the trend in educational inheritance over the past 50 years (see Fig. 1), which is contrary to the expectations raised by Ganzeboom & Nieuwbeerta (1999). If anything, we find a decrease of intergenerational persistence until the generation of the 1950s. In later years there appears to be no further decline, on the contrary, in a number of states the effect of family background grows stronger. In all likelihood, the earlier decline is the outcome of the policy of massively expanding education implemented by practically all governments of the Eastern Bloc in the first half of the century.

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have given rise to an upward bias for older generations.

<sup>8</sup> The correlation between the education of parents and that of their children in Bulgaria almost doubled from 1995 to 2000. Moreover, educational attainments declined in absolute terms for children from families with lower levels of parents' education. Hertz et al. (2009) claim that this was an economically-driven structural change caused by the contraction of public spending on education and the decline in its quality, the increase in out-of-pocket costs, the fall in the number of schools, and the rise in unemployment among those with secondary educations.



Table 4  
The relation between parents' and children's education

	All		Men		Women	
	Correl.	Coeff.	Correl.	Coeff.	Correl.	Coeff.
Czech Republic	0.380	0.519	0.386	0.532	0.383	0.523
Estonia	0.331	0.308	0.339	0.299	0.335	0.316
Hungary	0.461	0.419	0.434	0.375	0.487	0.460
Latvia	0.389	0.448	0.395	0.448	0.390	0.444
Lithuania	0.358	0.292	0.337	0.272	0.387	0.314
Poland	0.391	0.409	0.385	0.389	0.398	0.426
Slovakia	0.329	0.335	0.304	0.303	0.353	0.366
Slovenia	0.402	0.458	0.335	0.355	0.463	0.554
Bulgaria	0.626	0.665	0.614	0.618	0.629	0.689
Romania	0.508	0.557	0.466	0.538	0.562	0.605
Russia	0.402	0.336	0.368	0.313	0.438	0.369
Ukraine	0.312	0.309	0.326	0.356	0.291	0.295

Source: Own calculations using the data as specified in Table 1.

The graphs also highlight the between-countries differences in the levels of educational mobility. The Central European countries oscillate around values of 0.3-0.5 for correlation and regression coefficients, while former members of the Soviet Union tend to record lower values, around 0.2-0.4: this is specifically the case of Lithuania, Russia and Ukraine (see Table 4 for average values of correlation and regression coefficients across cohorts).

The recent trends are of particular interest for testing the effect of transition on intergenerational mobility. The available data does allow testing for the effect of transition. Both EU-SILC 2005 and ESS 2006 include people born in the 1970s, who are expected to have completed their education career in the mid 2000s, be it at secondary or higher levels. Most importantly, there are people who obtained their degrees during transition and whose educational choices may have been affected by the ongoing changes.

Fig. 1. Intergenerational educational regression coefficients and correlations

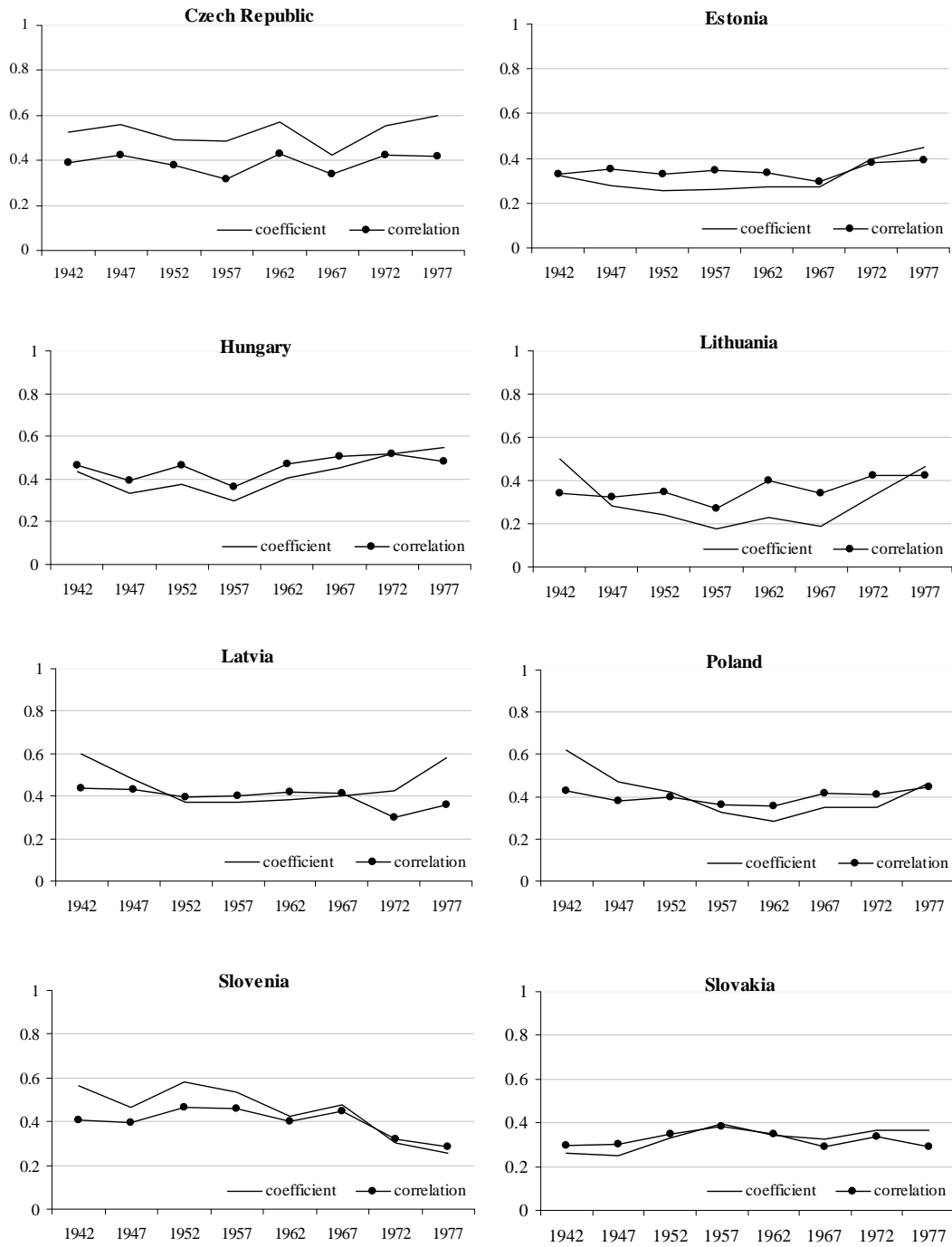
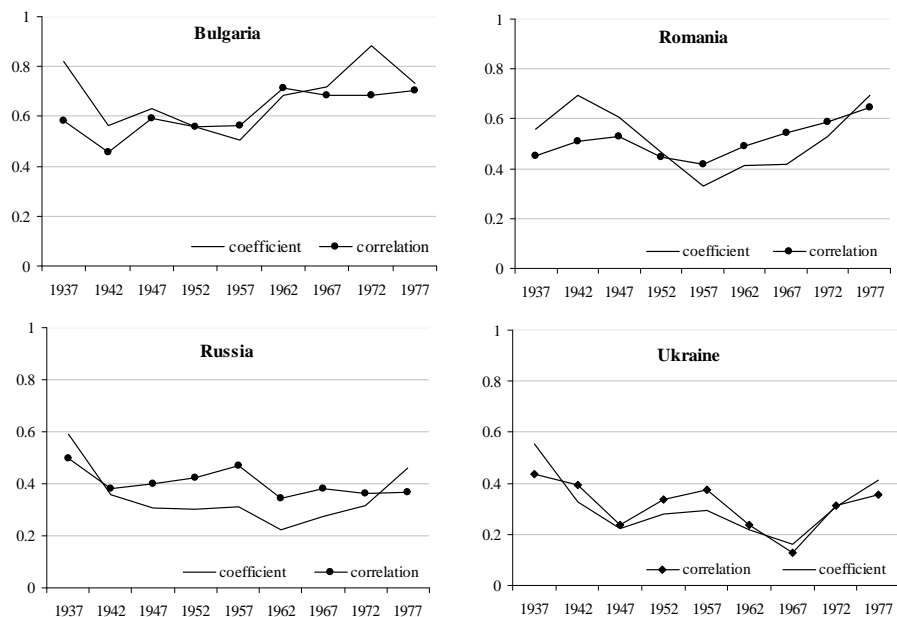


Fig. 1 continued



Source: Own calculations using the data as specified in Table 1.

In order to test the effect of the transition we had to identify the timing of the possible structural break in the data. This task was not straightforward, since the reform was launched at different points in time and at different paces throughout Eastern Europe. Graphical evidence about the time pattern of the estimated coefficients (Fig. 1 above) is not particularly suggestive, since no isolated and major break emerges clearly over the period considered. We therefore decided to test for all possible breaks in the data by using first the CUSUM test and then the Chow test.

The CUSUM test is based on the cumulated sum of residuals (Brown et al., 1975) and verifies the occurrence of structural breaks without prior knowledge of the precise timing of the breaks. The test is performed by plotting the cumulated sum of residuals against time as in Fig. A.1 of the Appendix. The structural break occurs if the cusum plot falls outside the predefined boundaries. When the plot gets close to the boundaries, it is generally interpreted as a sign of possible model instability in that period. In our case it refers to the instability of the regression coefficient  $\beta_t$ , i.e. the coefficient of parents' education, our main regressor for the years of education of children.

CUSUM squared is a complementary version of the CUSUM recursive residuals. It is based on the cumulated sum of squared residuals. The two tests are complementary in the sense that CUSUM squared is more appropriate to test for haphazard rather than systematic changes in regression coefficients.

We performed the CUSUM test on the whole time series of matched (average years of) education of children and their parents, starting from the generation of the late 1930s - early 1940s and ending with the generation of the late 1970s. This procedure thus enabled us to identify all the possible breaks in the data over the 40-year period considered and not only those caused by the transition. As exemplified in Fig. A.1, the main change in fact occurred around the beginning of the 1960s (note that birth years are displayed by the figure). Table 5 in turn lists the detected years of instability or of structural breaks.

Once break years had been identified through the CUSUM tests, the statistical significance of the related findings could be ascertained using the Chow test (see column 4 in Table 5). In the majority of cases the Chow test confirmed the occurrence of breaks as detected by the CUSUM squared. Note that, sometimes, significance (at the conventional 5% level) was achieved by the CUSUM squared plot, but not by the CUSUM of the recursive residuals. According to Brown et al. (1975), in such cases instability is due to change in the residual variance rather than to shifts in the values of the regression coefficients. Moreover, the timing of detected breaks as in Table 5 suggests that, although transition generated some instability in the patterns of inter-generational transmission of education, there had probably been prior events that brought about major changes.<sup>9</sup>

The search for possible explanations for the trends identified in the data cannot ignore the historical context. We have already found that educational persistence started to increase after a short period of post-World War II improvement. In that period, the Cold War escalated and was epitomized by the construction of the Berlin Wall. Fear and uncertainty about the future were characteristic features of that time, leaving imprints on everyday life. In such a climate, people might have become more self-oriented and less prone to share equally resources, at least with regard to education.

There may be other reasons for more self-oriented behavior. One of them is self-protection, as in the case of the young males in the Soviet Union who entered higher education also to avoid army service at the time of the war in Afghanistan. The war began in 1979 and continued for a long nine-year period during which it never stopped being a threat for youths who feared being sent to the war zone. The generation of the early 1960s that was about to enter university at the turn of the 1970s was affected the most. For many parents, higher education became a way to shelter their sons, since entering college allowed postponement of military service.<sup>10</sup> Clearly, the sons of influential

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<sup>9</sup> Recall that the most important transformations caused by the economic transition in Eastern Europe took place in the late 1980s to early 1990s (Roland, 2000; Berglöf & Roland, 2007).

<sup>10</sup> After World War II and until 1984, which covers the first five years of the war in Afghanistan, college students were exempted

Table 5  
The incidence of structural breaks

	Structural breaks in the data detected by		Confirmed by
	CUSUM	CUSUM squared	the Chow test
Czech Republic	no break	instability 1962-1970	1967 (1%)
Estonia	1969-1970	1960-62, 1968-70	1960(1%), 1968(5%)
Hungary	1967	no break	no break
Latvia	1973	1958-59, 1972-73	1958 (1%)
Lithuania	1965	1954-55, 1962-63	1954 (1%), 1963 (1%)
Poland	1967-68	1956-57, 1963	1956 (1%), 1963 (1%)
Slovakia	no break	instability 1958-63	1958 (5%)
Slovenia	instability 1962-66	no break	1962(1%)
Bulgaria	instability 1977-82	1961, 1977, instability 1960-80	1961 (10%), 1977(5%)
Romania	1980	1960, instability 1960-68	1960 (1%)
Russia	instability 1954-1957	instability 1966-1970	1954 (1%)
Ukraine	no break	instability around 1945	1945 (1%)

Note: Here we refer to the year of birth of a child.

Source: Own calculations.

parents could resort to this option more easily, which tended to reinforce educational persistence. This specific factor may help explain why educational mobility started to decline in the FSU, and why sons attracted more investment in education than daughters. But it does not rule out the more general explanations that will be explored in the next section.

To summarize our findings thus far, of the three hypotheses that we tested, the first two were partially rejected, while the third was weakly confirmed. Specifically, our expectations of a weakening in educational persistence during the communist era did not receive full support from the data. The initial decline during the post-World War II period was followed by a setback some 10 years before transition started.<sup>11</sup> We also expected to find higher mobility, i.e. lower regression and correlation coefficients, in post-communist versus mature market economies, but this too was only partly supported by the data. Among

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from military service. Because of the lack of soldiers, this privilege was abolished in 1984 for all the universities but the very best [<http://www.allpravo.ru/library/doc6934p0/instrum6935/print6943.html>]. The *status quo* was restored in 1989, the year in which the war in Afghanistan ended.

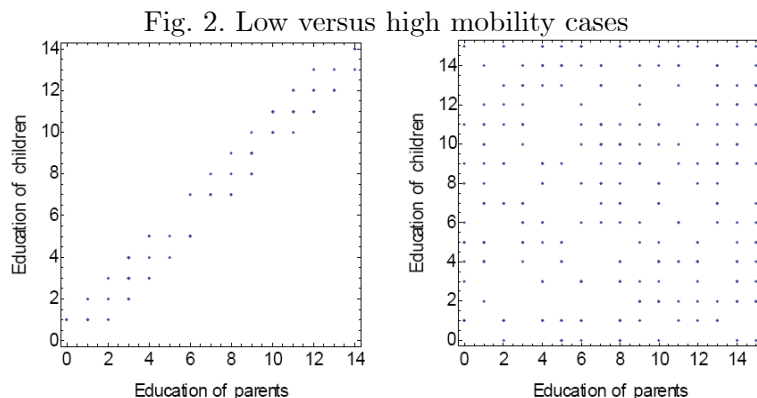
<sup>11</sup> Note, here we refer to the year when a person acquired the highest level of education, while previous tables and graphs referred to the year of birth. We assume that the distance between these two moments is of the range of 17-20 years.

the countries considered, only Lithuania, Russia and Ukraine came close to the 0.2 mark at some point (Fig. 1). The remaining countries consistently displayed middle range values. This has been also found to hold for market economies by other studies employing the same methodology (Hertz et al., 2007). Our final expectation concerned the effect of transition on educational mobility, and the data suggest that this further declined during the economic reforms. The next section offers some evidence in support of these findings.

## 5 Discussion

In light of the fact that so much effort was devoted by communist countries to promoting socioeconomic mobility, and that education was the main road to mobility, the overall outcome was modest: only the generations between the late 1930s and the 1950s were apparently able to take advantage of temporary increases in educational mobility.

Overall, the case of post-communist economies raises the question of whether high educational mobility is sustainable over time. If we abstract from the economic and political context shared by the countries of Eastern Europe at that time, and which may in itself counter social mobility, what other factors may have worked against high educational mobility? The issue of sustainability is



explored in Fig. 2 by means of a scattergram of the paired values of parent and child education in two hypothetical cases of mobility, respectively low (left panel) and high (right panel). High mobility is characterized by a greater dispersion of values, with at least two implications. First, the fact that average educational attainment increases may lead to a decrease in educational mobility because of lower dispersion. Put simply, when everybody is highly educated, there is little room for improvement.<sup>12</sup> Second, high mobility also

<sup>12</sup> Note that in the extreme case where everybody holds the highest degree, mobility would go down to zero. While this is not realistic, it makes the point about the

includes cases of downward mobility whereby highly-educated parents fail to ensure transmission of high educational levels to their children. The latter circumstance is not easy to accept for parents, all the more so when the number of children per family decreases.

As argued by Hirsh back in 1976, education is a partly positional good in the sense that its value depends on both absolute and relative values consumed. In his view, the relative quantity and quality of education matters for access to the limited number of high status positions to which individuals may aspire. When education is made available to everybody for free, it loses the meaning of the main feature of socioeconomic status. By contrast, the privatization of education sphere is expected to strengthen competition for a positional good (Adnett & Davies, 2002).

There are additional reasons why freely-provided education might not increase private returns and might even lower them in the context of socialist countries. If we look at the demand side of the labour market, inefficiency in allocating workers to jobs is one such reason. In order for investment in education not to be discouraged, it is important that the educated labour force should be able to find jobs where the skills previously acquired are adequately exploited and remunerated.<sup>13</sup> Providing everybody with equal opportunities to get education and/or raising the average educational levels is therefore a necessary but not sufficient condition to guarantee effective returns to education. On the labour supply side, moreover, the more education is freely available, the longer the investment period may become before conspicuous returns are reaped, which implies longer postponement of working life. This amounts to an increase in the opportunity cost of education, especially for children from disadvantaged families, and it may therefore contribute to slowing down educational mobility.

In former socialist countries, the combination of inefficient use of educated labour and persistent efforts to keep labour income inequality at low levels has probably reduced also private returns to education (*PRE*) to rather low levels. Thus a decrease in educational mobility that originated on the supply side may have been reinforced by the reduction in *PRE* on the demand side of the labour market, and the latter was probably accentuated by the deterioration of the economic situation which prompted the reforms.

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effect of an overall increase in education levels and the kind of contraction in the gap between the education of children and their parents evidenced in Table 3.

<sup>13</sup> An educated labour force is a luxury that not every country can afford in large numbers. In an open economy, people can always migrate in search of higher returns to their education. Unless a country pursues well-designed education and migration policies, increasing human capital may turn into a loss. In former planned economies migration was limited, as well known, and the full effect of higher education was felt within the country.

Direct evidence on pre-transition *PRE* is scanty. One exception is the study on Romania by Andren et al. (2004), which provides an estimate of returns to education during the 50-year period from 1950 to 2000. According to this study, an initial increase in *PRE* (see Table 3, *ibidem*), lasted until the 1960s and was followed by a decline until the early 1990s. This is actually consistent with the pattern of educational mobility that characterizes Romania, where educational persistence rose from the late 1950s onwards (see Fig. 1).

Note that *PRE* are expected to have different effects on intergenerational income mobility (*IIM*) and educational mobility (*IEM*):

$$PRE \downarrow \implies IIM \uparrow \quad PRE \downarrow \implies IEM \downarrow$$

The first expectation is widely supported by estimated earnings functions,<sup>14</sup> while Fig. 3 provides evidence that the second expectation also holds for transition countries. The figure illustrates how increasing *PRE* are generally expected to push mobility up, and vice versa.<sup>15</sup> The latter case is often referred to as an incentive trap, the logic behind it being that low returns to education create little incentive for children with poor backgrounds to spend their effort on schooling.

Because of this incentive trap, there may have been a substitution effect following the decrease in *PRE* (that we have hypothesized to occur before the transition) whereby people started to attribute more importance to income than to education as a way to obtain higher social status.<sup>16</sup>

A very important implication is that education in post-communist economies is increasingly becoming an investment good while in the past it was partly treated as a consumption good.<sup>17</sup> Change in this respect especially affects the new generations, those exposed to a market culture for which schooling is increasingly driven by economic calculus.<sup>18</sup> This may further reinforce the relation between *PRE* and educational mobility. If the state is unable to

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<sup>14</sup> Intergenerational income mobility will be higher in a given generation if there are lower returns to human capital for children or if children's human capital is less sensitive to parental earnings (see e.g. Solon, 2004; Blanden et al., 2005).

<sup>15</sup> However, the relation between returns to education and educational mobility is often found to be weak (see e.g. Chevalier et al., 2003)

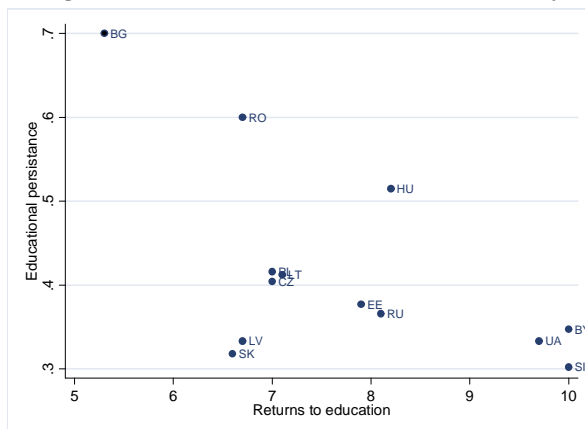
<sup>16</sup> Education is one of the main determinants of earnings, yet it explains only about one third of the variation in earnings (Bowles et al., 2001).

<sup>17</sup> *Studying, studying and studying*, Lenin's famous slogan, was a form of life guide instilled in the minds of people from early childhood. Education was perceived primarily as a means to achieve a comprehensively developed personality (Pastuovic, 1993).

<sup>18</sup> This explains a shift in interest to specialties not particularly in demand under central planning, with finance, economics and law leading the list.



Fig. 3. Returns to education and mobility



Note: <sup>1</sup>We use returns to education as reported in Table 6. They were deliberately selected for the mid 1990s and are expected to affect the education choices of the youngest cohorts. Mobility in turn is measured as an average of the correlation coefficients between the education of children born in the 1970s and the education of their parents.

<sup>2</sup>For a set of countries considered, returns to education explain about one third of the variation in educational persistence.

Source: Own calculations

sustain *PRE* at reasonably high levels, the potential of education as a channel of socioeconomic mobility will be weakened.

Table 6 reports the *PRE* values used to construct Fig. 3. The values have been drawn from different studies and might not be fully comparable, but their levels are apparently as high as *PRE* in other European countries (Woessmann, 2003).

It is interesting to compare the levels of *PRE* with the measures of intergenerational educational mobility reported in section 4. Across countries, higher *PRE* associate with higher educational mobility, as also shown in Fig. 3. For each country, however, high returns to education in later stages of the transition often go together with middle-to-high and yet decreasing educational mobility (see Fig. 1). One explanation for these apparently contradictory findings is that transition reversed the relationship between private returns to education and intergenerational education mobility. An alternative explanation, which we favour, is that estimated *PRE* do not fully capture actual returns before and during the transition.

Estimates of returns to education available in the literature on former planned economies have been derived by applying the standard approach developed for market economies. How appropriate is this approach to estimating *PRE* in the pre-reform period? The main problem, as we shall see, is that in socialist countries the overall ‘pay’ packet included important non-monetary components. The latter are disregarded by the standard estimation approach, thus causing

Table 6  
Selected findings on returns to education in transition countries

Country	Author	Data Source	Year	Return to education
Belarus	Pastore & Verashchagina (2006)	BHSIE	1996	10
Czech Republic	Flabbi et al. (2007)	ISSP	1996	7
Estonia	Hazans (2003)	LFS	2000	7.9
Hungary	Flabbi et al. (2007)	ISSP	1996	8.2
Latvia	Hazans (2003)	LFS	2000	6.7
Lithuania	Hazans (2003)	LFS	2000	7.1
Poland	Flabbi et al. (2007)	ISSP	1996	7
Slovakia	Flabbi et al. (2007)	ISSP	1998	6.6
Slovenia	Flabbi et al. (2007)	ISSP	1997	10
Bulgaria	Flabbi et al. (2007)	ISSP	1997	5.3
Romania	Andren et al. (2004)	IHS	1996	6.7
Russia	Flabbi et al. (2007)	ISSP	1997	7
Ukraine	Brainerd (2000)	HS	1994	9.7

Note: BHSIE - Belarusian Household Survey of Income and Expenditure, ISSP - International Social Survey Programme, LFS - Labour Force Survey, IHS - Integrated household Survey, HS- Household Survey.

underestimation. For example, the elites often enjoyed free access to health services or housing, the latter alone could reduce household expenditures by about one third. The demise of planned economies ended this redistribution in kind in favour of the elites. With the liberalization of wage setting, monetary returns to education are likely to increase because the pressure towards equality of (monetary) income ceases and the best educated receive comparatively higher wages. However, if this is accompanied by loss of in-kind benefits, then overall returns to education may not increase. Thus, estimates of *PRE* before or during the transition period must be treated with caution, especially for countries where in-kind benefits were large.

An additional shortcoming of many existing estimates of *PREs* for countries in transition is that they fail to account for the fact that the private cost of education generally rises with the progressive expansion of the market. If this were instead taken into account, the likelihood of decreasing rather than increasing returns during transition would definitely be higher.

There is still no consensus in the literature on this matter (for a recent survey see Flabbi et al., 2007). But the indirect evidence, including the decreasing intergenerational educational mobility found by this study, reinforces the idea that *PRE* may have dropped during transition.

## 6 Conclusion

The expectations raised by the existing literature that educational persistence had decreased substantially during the socialist era are not entirely supported by the data. We find that an increase in educational mobility until the generation of the 1950-60s was followed by a decline. We also find that economic transition cannot be held responsible for the mobility decline, since much of it generally took place some 10 years before the reform was launched. More than one reason can be cited as to why this had happened.

The first reason, which we may call ‘intrinsic’, is that high levels of intergenerational educational mobility are inherently difficult to sustain. High mobility necessarily entails some downward mobility, whereas parents generally tend to oppose the latter, because they do not accept the prospect of having children with lower educations than their own.

Other reasons are specific to socialist countries. Since the latter were initially able substantially to increase educational levels for all at low cost, education lost socioeconomic status in the central years of socialism, which in turn discouraged investment in education. This was particularly the case of children from disadvantaged families, for whom the opportunity cost of working at earlier age was a crucial factor. The higher the average educational level, the longer it is necessary to invest in schooling in order to gain a comparative advantage. Thus further improvement increasingly became the privilege of children from well-off families.

In addition, the Soviet system pursued egalitarian policies featuring compressed earnings scales, which lowered the returns to education. As a result, the idealistic pursuit of education as a consumption good lost its attraction and people began to view it as an investment good. If education does not pay enough, why invest in it? Widespread disincentives started to roll educational mobility back.

The deterioration in the economic situation that preceded the transition to a market economy was the result of persistent inefficiencies. Human capital, alongside other production factors, was not used efficiently. This reinforced the downward pressure on wages exerted by the egalitarian ideology, and it is likely to have further reduced *PRE*. In the pre-reform period, in fact, further lowering of *PRE* and the contraction of mobility rates may have sustained each other.

The challenge is to explain what happened after the demise of socialism during transition to a market economy. According to the studies available, *PRE* generally increased, while our own findings are that intergenerational mobility declined. Overall, this evidence may be taken to imply that the relationship

between private returns and educational mobility reversed during transition. However, there are reasons to doubt that such a reversal took place. This is because the estimated increase in *PRE* in transition countries may have been exaggerated on two counts: because many of the benefits were in kind under socialism and are not included in available estimates, and because the latter also ignore the rise in the costs of schooling after transition. Further research is thus needed to account fully for changes in returns to education and educational mobility during this period. Whatever answer is given to the last question, the future prospects of intergenerational educational mobility will hinge critically on each country's ability to ensure adequate levels of actual returns to education via the labour market.

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## A Tables and figures

Table A.1  
EU-SILC 2005, education coding

<i>Highest education level achieved</i>	<b>Czech Republic</b>		<b>Estonia</b>		<b>Hungary</b>		<b>Latvia</b>		<b>Lithuania</b>		<b>Poland</b>		<b>Slovakia</b>		<b>Slovenia</b>	
	Nobs	Years	Nobs	Years	Nobs	Years	Nobs	Years	Nobs	Years	Nobs	Years	Nobs	Years	Nobs	Years
Pre-primary education	-	-	18	2	61	2	35	2	-	-	139	2	-	-	21	2
Primary education or first stage of basic education	16	4	67	4	185	4	629	4	142	4	3954	4	9	4	1077	4
Lower secondary or second stage of basic education	579	8	661	8	2429	8	176	8	645	8	1	8	658	8	163	8
(Upper) secondary education	4317	10	2745	10	5462	10	2426	10	2117	10	15175	10	6244	10	3061	10
Post-secondary non-tertiary education	90	12	579	12	34	12	565	12	1847	12	875	12	-	-	348	12
First and second stage of tertiary education*	749	15	1500	15	1436	15	929	15	1480	15	3520	15	1471	15	652	15
Missing	-	-	-	-	4	-	10	-	20	-	35	-	12	-	34	-
<b>Total</b>	5751		5570		9611		4770		6251		23699		8394		5356	

Note: \*corresponds to ISCED values 5(not leading directly to an advanced research qualification) and 6 (leading to an advanced research qualification).

Source: own elaboration on the basis of EU-SILC 2005.

Table A.2  
ESS 2006, education coding

<i>Highest education level achieved</i>	<b>Bulgaria</b>	
	<b>Nobs</b>	<b>Years</b>
Not completed primary education	10	3
Primary education	29	4
Lower secondary education	199	8
Upper secondary	478	11
Post secondary, non-tertiary educ.	66	14
Tertiary education	182	16
<b>Total</b>	<b>965</b>	

<i>Highest education level achieved</i>	<b>Romania</b>	
	<b>Nobs</b>	<b>Years</b>
No school	21	0
Primary school	106	4
General school, lower secondary	221	8
Vocational and apprenticeship	341	11
High school (upper secondary)	372	12
Post-high school	131	15
University degree	161	17
Post-graduate degree	8	18
<b>Total</b>	<b>1389</b>	

<i>Highest education level achieved</i>	<b>Russia</b>	
	<b>Nobs</b>	<b>Years</b>
Primary or first stage of basic education	40	4
Lower secondary, second stage of basic	132	8
Upper secondary	401	11
Post secondary, non-tertiary	515	13
First stage of tertiary	427	15
Second stage of tertiary	24	18
<b>Total</b>	<b>1539</b>	

<i>Highest education level achieved</i>	<b>Ukraine</b>	
	<b>Nobs</b>	<b>Years</b>
Not completed primary education	5	3
Primary education	51	7
Not completed secondary education	70	8
Completed secondary education	370	10
Secondary technical education	515	13
First stage of high education	41	15
Completed high education (specialist, master, post-graduate, scientific degree)	306	17
<b>Total</b>	<b>1358</b>	

Source: own elaboration on the basis of ESS 2006.

Fig. A.1. Graphical illustration of the CUSUM test

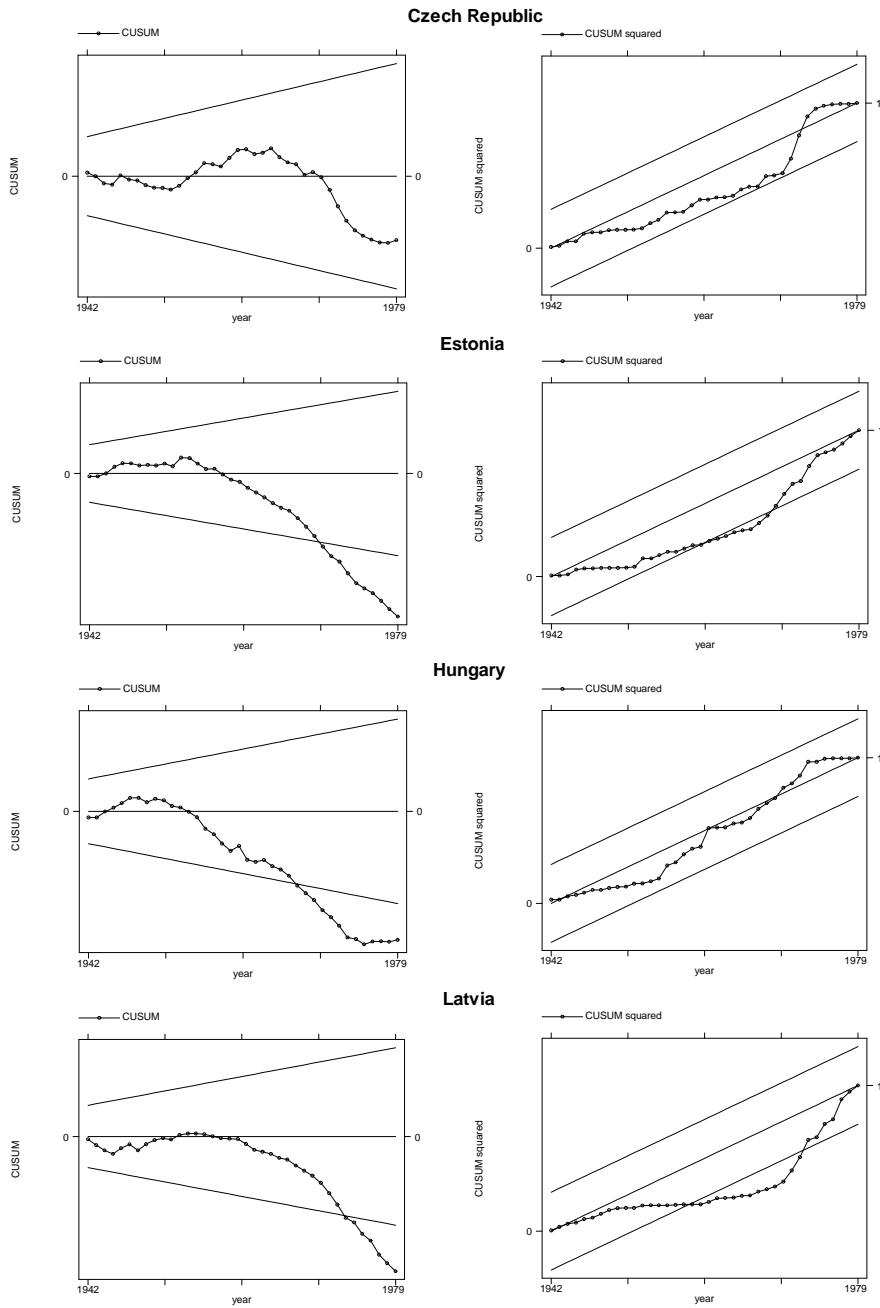




Fig. A.1 continued

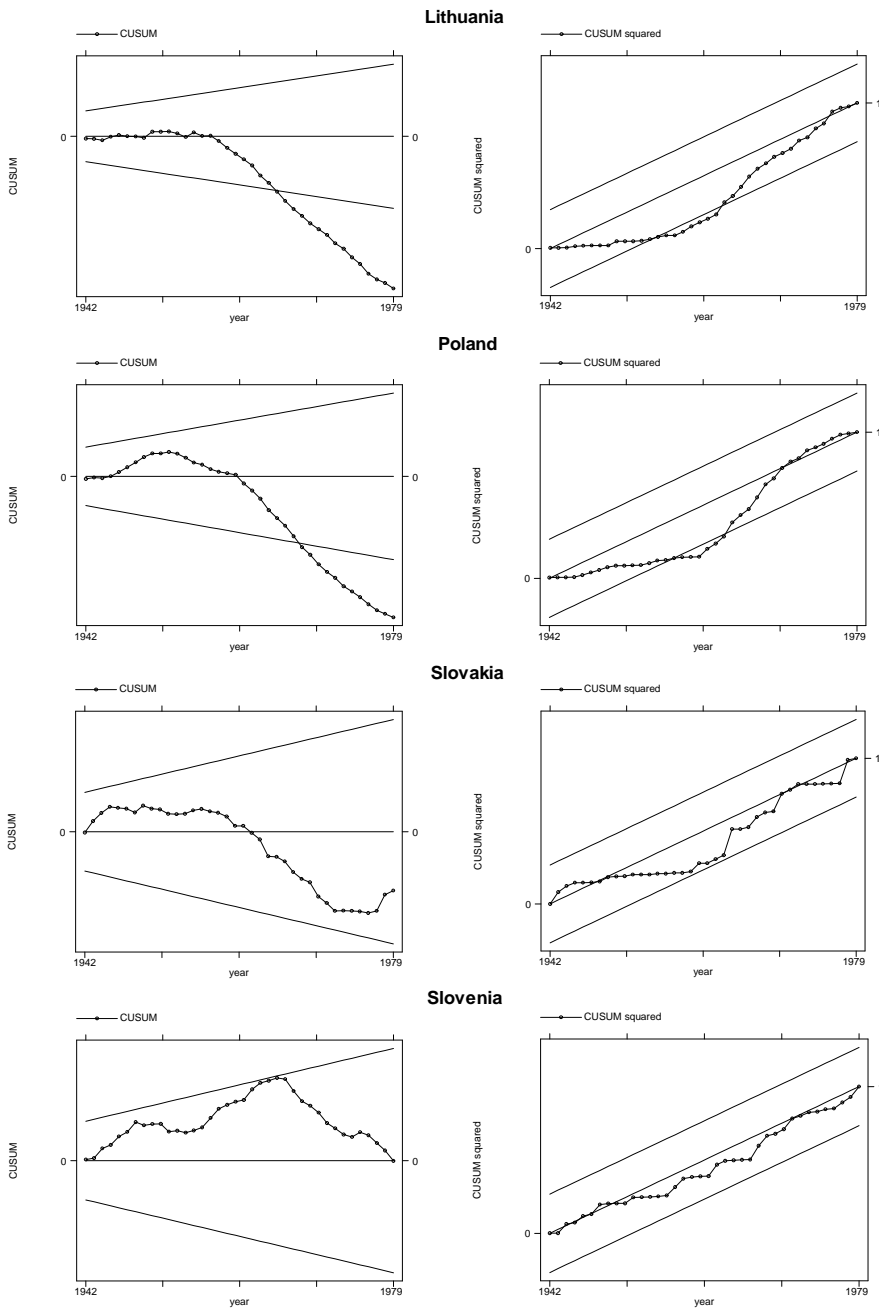


Fig. A.1 continued

