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## **Intra-Generational Social Class Mobility in Hungary Between 1992 and 2007—the Role of Self-Confidence\***

*Abstract:* This paper analyses the intra-generational social class mobility in Hungary between 1992 and 2007 using Hungarian panel data. Social class position is used as an occupation based typology corrected with a social status index (containing income, wealth and housing dimension). Self-confidence reflected respondents' problem solving skills, determination, efficacy and optimism. Mobilizing the gain of panel data self-confidence was set to be stable over time and was measured prior to social class position (in order to avoid endogeneity). The results of multivariate logit models showed that self-confidence has an impact on working class and deprived class position in 2007, even after controlling prior class position measured in 1992. People with high self-confidence were less likely represented in the deprived position and were more likely to belong to the working class. The decomposition of total effects of self-confidence into direct and indirect effects (mediated by schooling) revealed that in the case of higher status, social classes (elite, upper middle class, and middle class) self-confidence also had a significant impact however this was mainly transmitted through the channel of education.

*Keywords:* intra-generational class mobility; personality trait; self-confidence; the impact of non-cognitive skills; panel data; after transition; Hungary.

### **Introduction**

It is widely known that the transition from the socialist planned economy to the capitalist free market economy reorganised the structure of Hungarian society. New possibilities emerged, thus allowing more space for social mobility. In this essay I will essentially examine the impact of non-cognitive skills, which are measured through self-confidence. I hypothesize that those who trusted in their ability to shape their own future were more likely reach an advantageous social position than those without this ability. I perceive further that in the social class mobility the role of non-cognitive skills are still remarkable after controlling for cognitive skills, but that non-cognitive skills have an indirect effect on social class destination through the cognitive skills.

The structure of this paper is the following: in section 2 I deal with the question of why non-cognitive skills are important in social stratification. Section 3 introduces the definition of social classes and self-confidence. In section 4 I provide and discuss the empirical analysis, which shows the direct and indirect effect of self confidence in social class mobility.

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## Some Theoretical Implications

### Explaining Social Mobility

Classical theoretical literature on social class mobility mainly emphasizes the role of origin or effort. In modern societies the indirect effect of origin (through the channel of education, as a proxy for effort) is known to be higher than the direct effect of effort on the social status (Blau, Duncan 1967). On the other hand, previous research finds that merit based social explanatory, such as education, have a high impact on social class position (Saunders 1997, 2005).

More recent approaches to this research have hypothesized and tested some additional mechanisms behind social mobility. One component of the newly emerging causal mechanisms extends the explanatory mechanisms in the direction of nature (innate abilities). Herrnstein and Murray (1994) argue that intelligence (IQ) is better predictors of job performance than one's socioeconomic background. Analysing the data of National Child Development Study, Nettle (2003) establishes a positive relationship between the general ability scores and class mobility. He also finds that the impact is uniformly distributed across all social classes such as that children from underprivileged backgrounds need *not* be more intelligent than those with more advantaged backgrounds in order to reach high social position (e.g.: professional occupation). Bielicki and Charzewski (1983) found that among male siblings who were different in their height and education, taller individuals had a significantly higher education, highlighting that upward social mobility is selective to some innate characteristics. Either height is linked with genetically acquired features that enhance school performances or those who are taller receive more social acceptance.<sup>1</sup>

Another possible extension is to examine the role of nurture. Conley (2005) assumes that personal success as compared to one's sibling could be a function of the pecking order i.e. the family resources allocated to someone compared to his/her siblings. However, in Conley's work, there is no solid justification of this theory. Duncan et al (2005) points out the importance of role-modelling within the family which is accountable for the intergenerational correlation of certain behaviour and attitudes in relation to mothers and daughters. Kolosi (2006) in his AOLE model, assumes that within a given social class position, education itself does not fully explain social class destination, hence personal motivation and value orientations are also important.

My research question about the role of self-confidence emphasises the importance of non-cognitive skills in social mobility. Self confidence can be transmitted in the family (Duncan et al. 2005, Keller 2008) or shaped by the culture (Triandis 1994) underlying the importance of nurture in social mobility. Previous researches only tangentially analysed the role of non-cognitive skills in social stratifications. I hypothesise that non-cognitive skills do have an impact on the intra-generational mobility, and I intend to identify the classes where this impact is larger, as well as the classes where this impact is smaller.

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<sup>1</sup> The authors also raised the question about a third factor moving both educational performance and stature, like nutrition or birth order.

### The Role of Self-confidence

In this essay non-cognitive skills are conceptually defined with self-confidence, meaning purposeful thinking, anti-fatalistic attitude and trust in the future. But why do these attitudes count? There are theoretical concepts that aim to answer this question. Here I briefly introduce some major approaches:

- *The role of self-motivation—setting and achieving personal goals.* Presumably people who trust themselves are more motivated and self-motivation then increases the likelihood of accomplishing self-defined goals. Goals in one's life and personal career are rarely defined outside of the self; it is more likely coming from the person himself (Branden 1995: 42). It is hard to imagine fighting for goals which are not consistent with personal needs (Csíkszentmihályi 1990). The concept of self-motivation is grounded in the Theory of Reasoned Action (Ajzen-Fishbein 1980). According to this concept, human beings are rational and consider the implications of their actions before the behaviour itself is executed. Therefore behaviour intention predicts how people will act in the future. Ajzen and Fishbein perceive that intentions are the function of two basic determinants: attitude (the individual's positive or negative belief about performing in a specific way) and subjective norms (the way significant others think about certain behaviours).
- *The role of encompassed human capital.*<sup>2</sup> Filippin and Paccagnella (2010) define self-confidence as beliefs about one's own ability. In their theoretical framework they hypothesize that young children have an imperfect knowledge about the true level of their own ability, but parents transmit beliefs about their children's ability to their children. Such parental beliefs shape the educational choices of their children and can lead to either wrong self-confirming beliefs or can contribute to long lasting educational attainments. Those individuals who for example overestimate their ability are much more likely to choose more difficult educational tracks, where the amount of assessed knowledge is high. More difficult tasks however mean a larger probability of failure. Consequently at the end of a long lasting process, children access the true level of their ability, but with a different level of accumulated human capital. From this perspective, non-cognitive skill (like self-confidence) is important in the accumulation of human capital. Empirical evidence (Słomczyński, Mach 1996) reveals that self-direction has a strong influence on educational attainment. However, in the case of occupational attainment, the impact of non-cognitive skills is washed out by education and therefore its impact on occupation remains mostly indirect.
- *The role anti-fatalistic attitude—each man is the smith of his own fortune.* People who think that they are able to shape their future (contrary to those who blame the outside world for being unlucky) tend to be more likely to achieve something. The reason being that is these people do the best they can in a certain situation, and do not wait for others to solve their problems. One of the most widely used

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<sup>2</sup> This is a very similar approach to the concept of self-motivation, but here the emphasis is on the accumulated knowledge or human capital.

concepts dealing with the anti-fatalistic attitude was developed by Rotter (1966). According to his theory, *external control* means believing that hard work and effort are not rewarded, while *internal control* considers that future success is shaped by one's own efforts (Rotter 1966). According to Ajzen's (1991) very similar concept, besides attitudes and subjective norms, a third element—perceived behavioural control (the feeling whether outcomes in a certain situation is under volitional control)<sup>3</sup>—also influences the behavioural intention. However, whereas Rotter's *locus of control* is stable across each situation, behavioural control usually varies according to perceived chances of success in certain situations (Ajzen 1991: 183).

- *The role of pretence—behave as if you were competent.* It is likely that people who have a greater self-confidence can much more easily convince their surrounding peers that they are the right person for a specific job or task. Researchers at the Haas School of Business at the University of California Berkeley found that those individuals who voiced their opinions more were rated good leaders by their environment, even if they were not more competent than their peers and even if their answers were sometimes wrong (Cameron et al. 2009). Similarly, Titma et al (2007) found a significant positive relationship between income and the leadership attitude that was rated by the environment.

#### **The Role of Non-cognitive Skills on Social Mobility—Previous Research**

There were not many research studies conducted that analysed the link between occupational class position and non-cognitive skills. Titma and Trapido (2002) used data from the Path of a Generation survey, which is representative of young adults in Estonia and Latvia. They established that in 1983, when the respondents were 17 years old, self-evaluated abilities were more powerful predictors of occupational career (in 1997) than grade points in the school. The author concluded that the positive evaluation of self reflects high motivation and self-confidence, which are important in the battle for success (Titma and Trapido 2002: 325). These results reveal that self-reported organizational skills are especially important in becoming entrepreneurs or professionals. Andrisani (1977) who worked on the data National Longitudinal Survey and used a two year time lag between the personality variable and occupation measure, found that having internal control on Rotter's locus of control scale positively influences occupational attainment (measured with Duncen Index Score) and its change. Working on the National Child Development Study, Sounders (2002: 274) found that ability and motivation have the highest influence on Hope-Goldthorpe social status, meaning that these two variables enhanced the explained variance with the largest share and also the regression parameters are the largest in these cases. While working with Polish panel data, Słomczyński and Mach (1996: 350) found that in the case of young, 27–31 year old men, the factor score of self-direction has no direct impact on occupational attainment (only through education). However they did find a significant positive direct impact in the middle aged men cohort (46–65 years old).

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<sup>3</sup> <http://people.umass.edu/aizen/abc.html>.

## Data and Measurement

### Data Sets Used in the Analysis

In my paper I use data from the Hungarian Household Panel Study (HHP), which is a longitudinal panel survey carried out by the TÁRKI Social research Institute between the years of 1992 and 1997 and uses a nationwide sample of 2,600 households. TÁRKI has completed a follow-up research of the Hungarian Household Panel in 2007 (Household Lifecourse Survey Project, HLSP) using the sample of the original HHP from 1992. In my analysis about intra-generational mobility I use the merged data set of HHP and its follow-up research. Putting my analysis in a wider time frame, and benchmarking my cross-sectional results, I use two additional cross-sectional datasets. The Hungarian Stratification Survey (HSS) is a data set collected in 1982, which contains data for more than 14 thousand respondents in areas of income, labour market and attitude issues. The Hungarian Household Monitor Survey (HHMS) is a continuation of the Hungarian Household Panel, excluding the longitudinal character. The survey primarily focuses on inequalities and social stratification issues.

### Measuring Self-confidence

In calculating the self-confidence scale (the most important right hand variable in this analysis) I use the same method that I used in my previous work (Keller 2010). I created the measure of self-confidence using questions about the respondents' problem solving skills, determination, efficacy and optimism by applying six items:

- a1.) I cannot solve my problems;
- a2.) I accomplish all my purposes;
- b1.) I can hardly effect the turns my life takes;
- b2.) The shaping of my future depends primarily on me;
- c1.) I can hardly relieve most of my troubles; and
- c2.) I trust my future.

To create the measure of self-confidence I simply take a sign-weighted sum of the items<sup>4</sup> (choosing different means of calculation, such as principal component analysis or sum of z-scores, does not have an impact on the results).

My aim was to maximise the correlation between my measure for non-cognitive skills and Rotter's *locus of control scale*<sup>5</sup> (Rotter 1966), which is perhaps the most

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<sup>4</sup> The six questions contain three oppositions, between the opposition pairs the correlation is at least  $-0.3$ . The following points were matched to answer-categories: fully true: 3; partly true: 2; rather true: 1; not true at all: 0. I used the following equation to calculate the index: self-confidence scale in each year =  $(a2 - a1) + (b2 - b1) + (c2 - c1)$ . The Cronbach's alpha is larger than 0,75 between the items.

<sup>5</sup> The abbreviated Rotter-scale contains four-items: (1.) What happens to me is my own doing (internal response) / Sometimes I feel that I don't have enough control over the direction my life is taking (external response); (2.) When I make plans, I am almost certain that I can make them work (internal response) / It is not always wise to plan too far ahead, because many things turn out to be a matter of good or bad fortune anyhow (external response); (3.) In my case, getting what I want has little or nothing to do with luck (internal response) / Many times we might just as well decide what to do by flipping a coin (external response); (4.) It is impossible for me to believe that chance or luck plays an important role in

widely used measure for personal characteristics in social sciences, but unfortunately was not asked in HHP, or in HLSP. According to Rotter's terminology, *external control* means that hard work and effort are not rewarded, while *internal control* is understood as a concept that future success is mostly shaped by one's own efforts. I tested the empirical correlation ( $r = -0.38$ ;  $p < 0.01$ ;  $N = 928$ ) between my measure and the locus of control scale on a national representative sample from Hungary in 2009. As the large scores on the locus of control scale signify external control, while the small points represents internal control, high points on the newly developed measure for non-cognitive skills is associated with internal control (the beliefs in own efforts and ability which is the core of self-confidence).

In line with previous research studies (Goldsmith et al. 1997; Goldsmith et al. 2000, Osborne Groves: 2005) self-confidence should be stable over time, and independent from the success or failure in the labour market. Hence I regressed the self-confidence scale measured in 1993<sup>6</sup> on self-confidence scales measured later on in the survey (1996, 1997), and used the predicted value from this equation for the final self-confidence index (see the calculations in Table A1 in the annex). Choosing this method I treated the endogeneity problem twofold. First, the measure of self-confidence is prior to the occupation based class position (which is from 2007). Secondly, the self-confidence scale is independent from changes over time, since I only used the part of the scale which is stable over time (between 1993 and 1997<sup>7</sup>). Presumably the changing, not the stable, part of self-confidence is connected to the labour market experiences.

In the literature there are many other kinds of measures for non-cognitive skills. Unfortunately I was not able to test the correlation between my self-confidence scales and all of the other measures. However, theoretically my measure is similar to Pearlin's (Pearlin and Schooler 1978) *mastery scale*<sup>8</sup> and the *self-esteem scale*<sup>9</sup> developed by Rosenberg (1965). Previous research (Scheier et al. 1994:1066; Pearlin et al. 1981:354.) found that the correlation between the various kinds of psychological measures is around 0.5. The empirically found correlation between the Rotter scale and my measure of self-confidence should indicate a correlation with the other kinds of measures.

Concerning the measurement of non-cognitive skills the stability of indices over time is an other important criterion. Previous longitudinal research (Andrisani and

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my life (internal response) / Many times I feel that I have little influence over the things that happen to me (external response). Source of questions: Andrisani 1977: 314.

<sup>6</sup> This is the year when the set of questions used were asked at the first time.

<sup>7</sup> The questions used to construct the self-confidence scale were not asked in 2007.

<sup>8</sup> (1.) Sometimes I feel I'm being pushed around in life; (2.) What happens to me in the future mostly depends on me; (3.) There is really no way I can solve some of the problems I have; (4.) There is little I can do to change many of the important things in my life; (5.) I often feel helpless in dealing with the problems of life; (6.) I have little control over the things that happen to me; (7.) I can do just about anything I really set my mind to. Source of the questions: Pearlin et al.: 1978: 20.

<sup>9</sup> (1.) On the whole, I am satisfied with myself; (2\*.) At times, I think I am no good at all; (3.) I feel that I have a number of good qualities; (4.) I am able to do things as well as most other people; (5\*.) I feel I do not have much to be proud of; (6\*.) I certainly feel useless at times; (7.) I feel that I'm a person of worth, at least on an equal plane with others; (8\*.) I wish I could have more respect for myself; (9\*.) All in all, I am inclined to feel that I am a failure; (10.) I take a positive attitude toward myself. Items with an asterisk are reverse scored. Source of the scale: [www.yorku.ca/rokada/psycetest/rosenbrg.pdf](http://www.yorku.ca/rokada/psycetest/rosenbrg.pdf) (downloaded 02.20.2011.).

Nestel, 1976: 161; Murnane et al., 2001: 317; Pearlin et al.1981: 353) found that the various kinds of social measures correlate around 0.4 or 0.5, if we repeat the measurement on the same population with a time lag. In terms of my measure I basically found the same strength. In one years time (1996/1997) the correlation is 0.6, and the four years lag (1993/1997) produces a correlation of around 0.4.

### Measuring Occupation Based Social Classes

Based on the works of Kolosi-Róbert (2004) and Kolosi-Keller (2010) I created an occupational based social class-typology. Firstly, a vertical differentiation measure was created using income, wealth and housing indices. *Income* was measured with per capita yearly household income. In constructing the *wealth* index, I collected primarily variables from four areas. The primarily variables were standardized and then summarized into sub indices, final wealth index was calculated from these sub-indices. In the durable goods sub-index I took into consideration the valuable equipments in the household. The properties of the household were assessed with the market price of houses/flats apart from the ones in which they live, weekend houses and cars belonging to the household, and the value of enterprises if there were any. In calculating saving, I considered whether someone had a bank account, banking card, depositor's book, investment securities, stocks, shares, securities and cash-savings. Finally, the consumption was measured based on whether the household could spend enough on food and holiday vacations. Independent from the wealth dimension I collected data about the dwelling in which the respondent lived and called this dimension the *housing dimension*. I used the information reported by the interviewers about the lighting, size, quality, equipments, atmosphere of the dwelling, and whether the building was underpinned, or whether there was any plaster detaching in big pieces either inside or outside of the home. I also used the data provided by the respondent with regards to the heating system and the quality of bathrooms in the flat. Finally the market price of the dwelling was also used.

From the three hierarchical indices (income, wealth, housing) I computed a principal component called social status (see Table A2), which I divided into ten equal categories. Finally the occupation based social classes were created based on a cross-tabulation of the ten categorical social-status and the (last<sup>10</sup>) occupation categories (twelve categories<sup>11</sup>). I defined five groups according the following rules:

- (1) *Elite*: owners of large and medium-sized businesses, freelance white-collar workers. Only top managers and white-collar workers in the top 10 percent of the status index are included.

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<sup>10</sup> For respondents who were no longer employed or were temporarily unemployed, or were in the retirement, the last occupational position was taken into consideration. Those who never had an occupation were not included in this classification.

<sup>11</sup> Owners of large and medium-sized businesses, Freelance white-collar workers (lawyer, demists), Self-employed and smallholders, Self-employed farmer, Top level managers, Mid-level managers, Low managers, Professionals, White-collar(clerical) workers, Skilled workers, Semiskilled/unskilled worker, Agricultural worker.

- (2) *Upper middle class*: top managers outside the highest 10 percent of the status index, mid-level managers, the self-employed/smallholders and the self-employed farmers in the top 10 percent of the status index; and professionals in deciles 6–9 of the status index.
- (3) *Middle class*: mid-level managers, the self-employed/smallholders and the self-employed farmers whose status falls outside the highest 10 per cent, professionals whose status is within deciles 1–5, low managers, other white-collar (office) workers and skilled workers whose status falls within the top three deciles.
- (4) *Working class*: skilled workers with a lower status, as well as unskilled and agricultural workers whose status indices fall into deciles 4 or higher.
- (5) *Deprived*: unskilled and agricultural workers in the lowest three deciles of the status index.

### Control Variable

I differentiated four cohorts (generations) according to the year of birth (based on Kolosi-Tóth-Keller 2008). I called exit generation of those people who were born before 1935. These people were more than 55 year old in 1989/90, so the majority of them were pensioners and at the end of their life circle, so obviously they cannot use emerging new possibilities. The generation of changing status, born between 1936 and 1950, were between 41–55 years old. They already had a stable social status before the transition, and they also had the possibility to convert their monetary and social capital according to the need of new requirements. The generation of transition were born between 1951 and 1965. They were 16–40 years old when the transition occurred. They mostly begun their career after the transition and therefore they were those who could mobilize the emerging new possibilities offered by the transition first. The young generation were born after 1966, they begun their career totally after the transition and they were not at all influenced by the experiences in the communist regime during occupational career.

Schooling was assessed by the highest level of education: Four categories were used: Elementary school, Vocational school, Secondary school, with leaving certificate, University degree. I also controlled the gender differences, settlement types (Village, Town, Country seat, Budapest), and labour market participation (Employed, Self-employed, Occasional work, Maternity leave, Unemployed, Dependent, Retired).

## Empirical Analysis on HHP-HLSP Data

### The Starting Point: Class Structure and Intra-generational Class Mobility in Hungary

According to the occupational social class hierarchy in Hungary, as seen in Table 1., there is a small proportion of elite and upper-middle class (together the size of these two classes is not larger than 13%), followed by a large (but somewhat descending) middle class, a large and stable working class, and based on its size, we can say

a medium size deprived class. However, although the spindle-shape structure of the society has not changed, significant changes occurred in the last twenty-seven years. The size of the middle class reduced to 70% (2009 as compared to 1982) while elite and upper-middle classes doubled in size, and the ratio of deprived grew 25%. Taking into consideration only the row numbers between 1982 and 2009 (not the ratios) the size of the middle class shrank with 12.7 percentage points and the classes below and above the middle class grew in the same amount, approximately 6 percentage points (Kolosi-Keller 2010). The question of what the size and magnitude of class mobility arises. This question however, can only be answered between the years of 1992 and 2007, using the panel data of the merged data set of HHP and its follow up research.

Table 1

**Occupation Based Social Classes Between 1982 and 2009 (%)**

Occupation based social classes	1982	1992*	2003	2007*	2009
<i>Elite</i>	2.3	1.8	2.6	3.5	4.6
<i>Upper middle class</i>	4.4	8.8	6.8	9.5	8.2
<i>Middle class</i>	42.3	40.3	32.8	35.4	29.5
<i>Working class</i>	36.3	34.7	38.3	36.8	39.3
<i>Deprived</i>	14.7	14.4	19.6	14.8	18.4
N	14011	3213	4211	1989	3575

Source of data: 1982: HSS; 1992 HHP; 2003: HHMS; 2007: HHP-HLSP; 2009: HHMS. Data sets are treated cross-sectional, but HHP and HLSP could be merged in a panel survey. Adopted from Kolosi-Keller, 2010: 121. Numbers for the year of 2007 are own calculations.

In Table 2 I summarize the total intra-generation mobility between 1992 and 2007. As the numbers on the main diagonal illustrate, some 72% of the people were not mobile during the examined 15 years. Some 24% of respondents moved one category either in upper or lower categories, while the remaining 4% moved two or more classes. The total mobility (some 28%) seems to be a small number, but compared to similar intra-generation mobility research, it should be regarded as a good result. Péter Róbert's research (1999: 78), based on ISSP data, measured 19% intra generational mobility in occupation between 1989 and 1999 (with a retrospective way of asking).<sup>12</sup>

**The Role of Self-confidence in the Social Class Mobility: A Bivariate Analysis**

Social classes are different in terms of self-confidence. Higher order classes have more self-confidence, while lower order classes have less and these results are fully consistent with those of Gecas and Seff (1990), who investigated the relationship from class position to the psychological resources. In my research the correlation coefficient between the five grade social class position (higher ordered classes are matched to smaller numbers) and the self-confidence index is around  $-0.31$ , which means that

<sup>12</sup> Occupational mobility according to the panel data I used (HHP-HLSP-data) is some 38% between 1992 and 2007.

Table 2

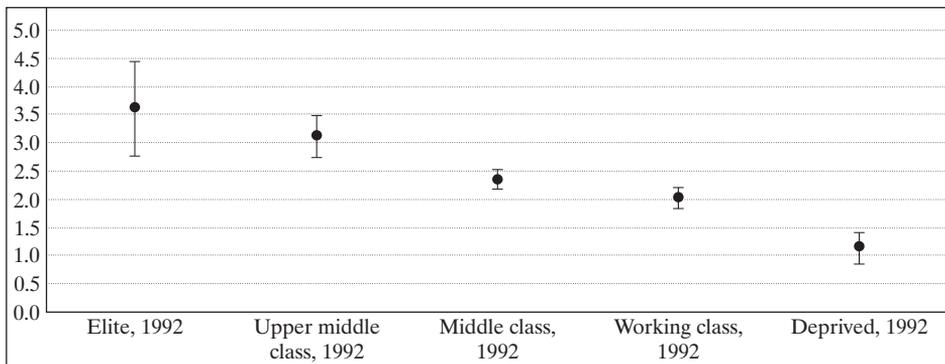
**Intra-generational Total Mobility Between 1992 and 2007 (N = 1503)**

		2007					
		<i>Elite</i>	<i>Upper middle class</i>	<i>Middle class</i>	<i>Working class</i>	<i>Deprived</i>	Total
1992	<i>Elite</i>	<b>1.2%</b>	0.6%	0.1%			1.9%
	<i>Upper middle class</i>	1.2%	<b>4.6%</b>	1.6%	0.4%		7.8%
	<i>Middle class</i>	0.9%	4.4%	<b>26.3%</b>	6.4%	0.6%	38.6%
	<i>Working class</i>	0.3%	0.7%	7.3%	<b>28.4%</b>	1.2%	38.0%
	<i>Deprived</i>			0.5%	1.8%	<b>11.4%</b>	13.7%
	Total	3.7%	10.3%	35.9%	37.0%	13.2%	100.0%

9–10% of the variation in social classes can be attributed to self-confidence. It must also be added that the correlation is slightly higher in 2007 than in 1992.

The average self-confidence in different social classes is presented in Figure 1 and Figure 2. The confidence intervals around the mean (and also the one-way-anova test) indicate that both in 1992 and in 2007 the elite and upper middle class are similar to each other, and the difference between the working class and middle class is also not significant. Other differences however should be regarded significant at 5% significance level. From the width of confidence intervals, we can conclude that the elite especially become more homogeneous in terms of self-confidence in 2007 than in 1992.

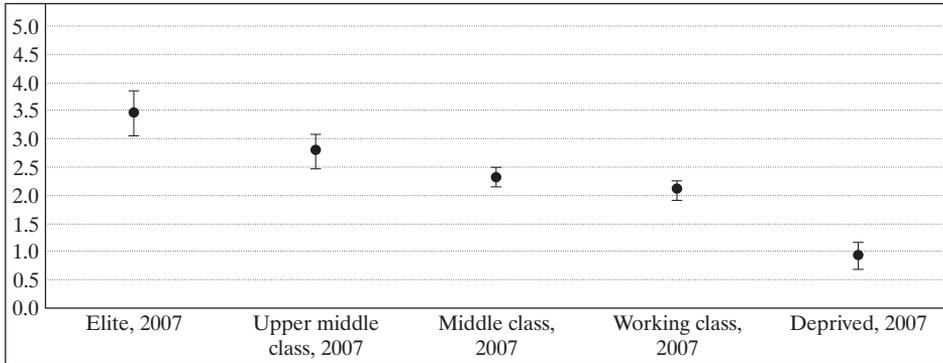
Figure 1

**Average Self-confidence in Social Classes in 1992, Means in 95% Confidence Interval (N = 777)**

Class mobility and its connection with self-confidence, however, can be more complicated to measure because for two different reasons: Firstly, it is highly probable that the meaning of one step upwards in mobility is different when one enters the elite from the upper-middle class than if someone reaches the working class from the deprived. While the distances are mathematically the same, moving from the poverty should require much more self-confidence than one entering to the elite from the

Figure 2

Average Self-confidence in Social Classes in 2007, Means in 95% Confidence Interval (N = 924)



upper middle class. On the other hand, the trajectories of mobility are also different between social classes. In the elite there are only two possibilities: staying in the same position, or moving downwards, and the opposite is true for those in the deprived class. In the case of other social classes there are three open scenarios: moving up, moving down or staying in the same class. Hence, given a certain kind of social class, the trajectories of mobility are not the same.

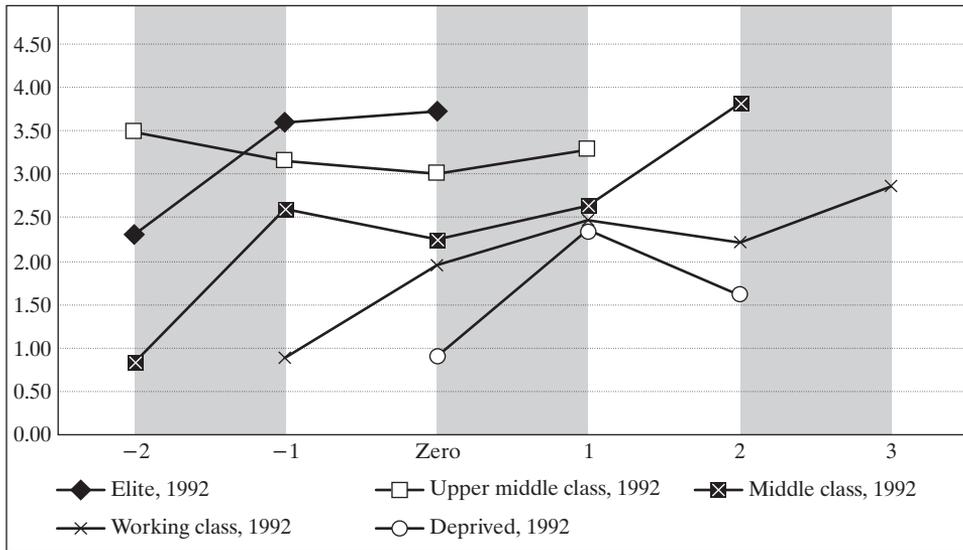
The analysis in which we could examine mobility trajectories in different social classes is impeded by a small numbers of cases. In the mobility table (Table 2), the respondents are broken down into 25 cells, however 5 cells remained empty. The cells frequencies are in some cases critically low, which is an obstacle in estimating “real” standard errors around the mean. In Figure 3 (based on Nettle, 2003) I plotted the average of self-confidence index according to class trajectories<sup>13</sup> and class position in 1992. In general, we can conclude that upward mobility is associated with higher self-confidence, since in every social class those who moved up had higher self-confidence than those who stagnated. Moving one step upward from the deprived class required more self-confidence than moving one step upward from any other social class. Moving two or more steps upwards also required more self-confidence than when stagnated, however the slope is not always linear in this case, presumably due to the small cell frequencies. There is not a clear pattern in the downward mobility in terms of self-confidence, but larger steps downwards are associated with extremely low self-confidence. The analysis revealed that self-confidence does not have the same impact on mobility at different places in social hierarchy.

Table 3. reveals that self-confidence linearly enhances the possibility for being mobile. However, it seems that those who have low self-confidence (who belong to the bottom 25% according self-confidence) are less likely to perform upward mobility (row C). In other categories, with regards to self-confidence, the possibility of upward

<sup>13</sup> This is the difference in the five grade class positions between 1992 and 2007. I simply subtracted class position in 2007 from the class position in 1992. Positive numbers mean upward mobility, while the meaning of negative numbers are downward mobility.

Figure 3

The Average Self-confidence According to Class Trajectories and Social Class Position in 1992 (N = 777)



Mean differences are not significant at any ordinarily used significance level, probably due to the small cells frequencies in some cases.

Y axes measures average self-confidence

X axes measures the change in class position between 1992 and 2007. For example “zero” means no change, “1” means one category upwards, “-1” means one category downwards, etc.

mobility is around the average. Another question to investigate is whether mobility as a whole is a consequence of the changing class structure (structural mobility) between the two time points (the different marginals in the cross tabs), or if it is to social fluidity (circular mobility), which is independent from the different structure (Erikson and Goldthorpe 1992).<sup>14</sup> From the numbers presented in Table 3 we can conclude that the new emerging social positions were closed for those with low self-confidence, since both the ratio of downward mobility (row E) and the structural mobility (row H) are higher than the average among those people who had low self-confidence. We can conclude that many individuals with low self-confidence got into the most disadvantaged positions, which emerged in the structural reorganisation of Hungarian society after the transition.

### Multivariate Models for Social Class Mobility

Focusing either on upward or downward mobility we find that the impact of self-confidence is not significant at any ordinarily used significance level in multivariate logit (using the following types of control variables: gender, age, type of settlement, education labour market participation<sup>15</sup>). It is however very likely that the impact of

<sup>14</sup> See the calculation of circular mobility in Andorka: 1982.

<sup>15</sup> The results are available upon request.

Table 3

**Intra-generational Mobility Between 1992 and 2007 According to Self-confidence**

		<i>The whole sample</i>	Low Self-confidence (First 25%)	Second 25%	Third 25%	High Self-confidence (Top 25%)
A	Non mobile	71.86%	81.21%	74.88%	68.02%	62.81%
B	Whole mobility (1 – A)	28.14%	18.79%	25.12%	31.98%	37.19%
C	Upwards mobility	17.23%	10.07%	15.46%	20.27%	23.12%
D	Downwards mobility	10.91%	8.72%	9.66%	11.71%	14.07%
E	The ratio of downwards mobility in the whole mobility (D/B)	38.77%	46.43%	38.46%	36.62%	37.84%
F	Structural mobility	4.26%	8.05%	4.35%	10.81%	7.04%
G	Circular mobility	23.89%	10.74%	20.77%	21.17%	30.15%
H	The ratio of structural mobility in the whole mobility (F/B)	15.14%	42.86%	17.31%	33.80%	18.92%

self-confidence on social class mobility is not uniformly distributed, so the impact of self-confidence is different at different stages in social hierarchy. Escaping from low status classes, for example, require different cognitive and non-cognitive skills than those required when emerging from the middle class.

After generally explaining upward and downward mobility, it is important to explore the possibility of belonging in a certain occupation based social group in 2007. Since among the control variables I include the class position in 1992, the results can be interpreted as mobility in relation to a certain class position. In table 4 the results of five independent binary logistic regressions are presented (Model A–to Model E).<sup>16</sup> The cells of the tables contain the general marginal effects (Bartus 2005)<sup>17</sup> in percentage points. This is the percentage point change in the likelihood of the dependent variable, if the independent variable changes one unit while keeping all the other covariates constant.

Self-confidence *ceteris paribus* increases the likelihood of belonging to the working class, and decreases the probability of being grouped into deprived. In other words, controlling for all other impacts, self-confidence turns out to be important *per se* especially at the bottom of the social hierarchy (working class and deprived). In the case of the working class, one unit change in the self-confidence scale increases the likelihood of belonging to the working class with 2.5 percentage points, while decreases the likelihood having deprived status with 1.6 percentage points. Hence, we can conclude that self-confidence protects one from being in the deprived group

<sup>16</sup> The dependent variable in every model equals with one if someone belongs to a certain social class and zero otherwise. Applying multinomial logistic regression instead of binary regression was not possible, due to the fact that there are empty cells in Table 3. This means for example that nobody from the deprived individuals entered the elite class. Applying multinomial regression would not allow the model to predict probability even in case of the empty cells (with extreme high coefficients and extreme high standard errors).

<sup>17</sup> Bartus (2005) also introduces a user-written program in Stata called *margeff*, which calculates the general marginal effects.

and helps individuals enter the working class, while in in other classes, self-confidence does not uphold an independent impact.

As a general rule, we can conclude that previous class position has a very stable and remarkable impact on the current class position. Compared to those who belonged to the middle class in 1992, those persons who belonged to the elite in 1992 were some 34 percentage points more likely to belong to the elite in 2007 as well. On the other hand, holding all other impacts constant, if an individual belonged to the deprived class in 1992, it is some 50 percentage points more likely that he/she will also belong to the deprived class in 2007, than those who were in the middle class in 1992.

Schooling also turns out to be a good explanation. As compared to the secondary school with leaving certificate, a university degree enhances the likelihood of becoming a member of the elite and upper middle class and decreases the likelihood of the working class position. The impact of schooling is not linear in the case of the middle class.

The role of the generation was not significant in two out of the five models. In other words, in the case of the elite and deprived, generational differences do not count. Compared to those who born before 1935, younger age cohorts are less likely to enter upper middle class and middle class positions. In the case of the working class, holding all other impact constant, people from the generation of changing status and the generation of transition are more likely to enter than the exit generation.

### Sensitivity Analysis

In the previous section I demonstrated that by controlling for a large set of independent variables, self-confidence significantly influences the social mobility of working class and deprived individuals. In the previous section, however, I measured the direct impact of self-confidence on the class position. It is also very likely that educated people have stronger self-confidence and it is more probable that they will reach a better class position (indirect effect of self-confidence). Thus, my hypothesis is that the impact of self-confidence was overshadowed by the impact of schooling. In other words the reason why we found a significant relationship between social class mobility and self-confidence only in working and deprived classes can be explained by the fact that in the case of upper status classes, the impact of self-confidence was transmitted through schooling.

To differentiate between direct and indirect effects of a certain predictor in non-linear models is not the same as doing this in linear models,<sup>18</sup> as proposed by Alvin and Houser (1975). However, there is a programmed<sup>19</sup> solution worked out by Buis (2010) which estimates the direct and indirect effect of a categorical variable in logistic regression. Note that in this case both the dependent and the independent variable

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<sup>18</sup> Comparing estimates of X in models that do and do not control for Z.

<sup>19</sup> There is a user-written program and command in the Stata written by Buis (2010) and named *ldecomp* computes direct and indirect effects in a logistic regression. The program also estimates standard errors using the bootstrap methods, drawing many sub-samples from the whole sample (the standard error is the standard deviation of these different estimates).

Table 4

**Binary Logistic Models for the Social Class Position in 2007 Controlling for the Class Position in 1992 (general marginal effects in percentage points)**

<i>Independent variables</i>	Dependent variable				
	Model A	Model B	Model C	Model D	Model E
	Elite, 2007	Upper middle class, 2007	Middle class, 2007	Working class, 2007	Deprived, 2007
<i>Male</i>	0.6	-2.22	-2.24	3.49	-0.74
<i>Born between 1936–1950</i>	7.22	-8.51**	0.21	7.47	-0.87
<i>Born between 1951–1965</i>	5.54	-13**	1.41	5.19	-0.55
<i>Born after 1966</i>	14.44	-15.13***	0.08	5.01	1.35
<i>Town</i>	-1.56	-0.2	0.02	1.76	-0.08
<i>Country seat</i>	-1.42	-3.93	-1.21	9.09***	-2.13
<i>Budapest</i>	1.47	-3.92	5.19	-3.96	-0.83
<i>Elementary school</i>		-12.79***	-28.65***	18.68***	12.83***
<i>Vocational school</i>		-6.71**	-19.57***	20.19***	8.24***
<i>University degree</i>	4.84**	12.47***	-6.22*	-26.82***	
<i>Employed</i>	-2.06	8.88***	0.66	3.05	1.09
<i>Self-employed</i>	-5.66***	2.1	59.73***		
<i>Occasional work</i>	10.94	18.2	-30.01***		
<i>Maternity leave</i>	-2.61		8.87	7.42	-0.68
<i>Unemployed</i>	-2.14	6.65	-12.71*	10.85*	-1.25
<i>Dependent</i>	5.04		-12.93	9.44	2.04
<i>Self-confidence</i>	0.71	0.29	-0.18	2.14***	-1.64***
<i>Elite, 1992</i>	38.28**	-1.65	-34.18***		
<i>Upper middle class, 1992</i>	7.65**	16.66***	-33.18***	7.09	
<i>Working class, 1992</i>	-0.46	-6.31**	-21.91***	36.89***	-0.49
<i>Deprived, 1992</i>			-29.13***	-13.31***	50.01***
<i>-2 Log likelihood</i>	-54.231888	-159.60517	-315.92	-305.52	-112.07
<i>Pseudo R2</i>	0.5006	0.3886	0.36	0.41	0.65
<i>Chi-square</i>	108.73***	202.85***	360.62***	423.28***	415.32***
<i>N</i>	777	777	777	777	777

About the dependent variable: the dependent variable (in the columns of the table) is coded 1 if the respondent belongs to the certain class, and 0 otherwise, thus the five models presented in this table have five different dependent variables.

Reference categories: Female, Born before 1935, Village, Secondary school with leaving certificate, Retired, Middle class (1992).

Coefficients with \*\*\* are different from zero at the significance-level of 1%, coefficients with \*\* are different from zero at the significance-level of 5%, coefficients with \* are different from zero at the significance-level of 10%.

Empty cells mean that nobody belongs to this category.

Every model is significant at 0.01% significance level.

have to be categorical. If we estimate a logistic regression where X and Z are two control variables (and X has an effect on Z, and both X and Z has an effect on Y) and predict for each individual the log odds on Y, then the difference in the log odds between the two groups of X is the total effect of X on Y. The indirect effect of X through Z can be computed in two ways in a logistic regression. On the one hand

one can fix the logistic regression coefficients when  $X=0$  and compare the log odds on  $Y$  between the categories of  $Z$ . And on the other hand, one can do the same, but by fixing the regression when  $X = 1$ . Though the logic behind the two methods is the same, the results usually are not, although they may be very close to one another. If we extract the indirect effect from the total effect we get the direct effect of  $X$  on  $Y$ .

Since *ldecomp* can only decompose direct/indirect effects of a categorical variables, I investigated the impact of high (top 25% was coded 1/0 otherwise) and low (bottom 25% was coded 1/0 otherwise) self-confidence. As one can see from the Table 5, “column A,” the impact of self-confidence is symmetrical: in those classes where the (total) impact of *high self-confidence* is positive, e.g.: higher than 1 (elite, upper-middle, and middle class), the impact of *low self-confidence* is negative, e.g.: lower than 1. And even the opposite can be stated about those classes where the impact of *high self-confidence* is negative (working class and deprived).

One can see that the total effect of self-confidence (“column A”) are not always significant, however in case of every classes the indirect effect of self-confidence (mediated by schooling) is different from zero at least on 1% level (“column B” and “column D”). On the top (elite) and on the bottom (deprived) of the social hierarchy The impact of self-confidence is symmetrical and at least one third of the total impact of self-confidence is transmitted through schooling. In “column F” the proportion of indirect effect in the percentage of total effect is 45% (high self-confidence) and 37% (low self-confidence) in case of elite, whereas is 36% (high self-confidence) and 53% (low self-confidence) in case of deprived.<sup>20</sup> In case of upper middle class 86% of the total effect is transmitted through schooling, but only in case of high self-confidence. On the other hands in the middle class 43% of total effect is transmitted through schooling in case of low self-confidence. In the working class the real impact of self-confidence is suppressed by differences in the schooling, since the total impact of self-confidence is either slightly significant (in case of high self-confidence) or not significant (in case of low self-confidence), while after controlling educational differences we get significant impacts (in case of high self-confidence the coefficient is significant at 10% level and in case of low self-confidence the parameter becomes significant at 5% level). It is also noteworthy that the direction of the impact is changed. In other words, since people in the working class are lower educated (in 49% of vocational schools) and low education is combined with low self-confidence, there is no relationship between working class and self-confidence, however, there is a significant positive relationship after controlling for schooling.

To sum up the findings in this section, the hypothesis in which I assume that schooling is a strong mediator of the impact of self-confidence is justified. The impact of self-confidence is the strongest at the top and at the bottom in the social hierarchy—without controlling for past class position (see “column A” in Table 5), while in case

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<sup>20</sup> It should be noted that there are only two independent variables in each model, self-confidence and schooling. Schooling is coded in this section as a continuous variable (not as in previous sections) according to the numbers of years spent in education to reach the highest level of education. For example someone having only elementary education receives 8 on the new education variable, and someone having university degree 17.

Table 5

**Decomposition of Total Effects of Self-confidence Into Direct and Indirect (mediated by schooling) Effects—Odds Ratios**

		(A)	(B)	(C)	(D)	(E)	(F)
		Total effect	Indirect effect, 1	Direct effect, 1	Indirect effect, 2	Direct effect, 2	Average indirect effect in % of total effect
High self-confidence	<i>Elite</i>	4.22***	1.92***	2.19**	1.91***	2.2**	0.45***
	<i>Upper middle class</i>	2.06***	1.86***	1.11	1.86***	1.11	0.86***
	<i>Middle class</i>	1.2	1.28***	0.93	1.28***	0.93	1.39
	<i>Working class</i>	0.8*	0.66***	1.22*	0.66***	1.21*	1.9
	<i>Deprived</i>	0.12***	0.49***	0.24***	0.45***	0.26***	0.36***
Low self-confidence	<i>Elite</i>	0.11***	0.44***	0.25***	0.44***	0.25***	0.37**
	<i>Upper middle class</i>	0.56**	0.46***	1.22	0.46***	1.21	1.33
	<i>Middle class</i>	0.53***	0.76***	0.7	0.76***	0.7*	0.43**
	<i>Working class</i>	1.04	1.68***	0.62**	1.7***	0.61**	14.84
	<i>Deprived</i>	4.63***	2.27***	2.04***	2.21***	2.09***	0.53***

Significance is estimated with the bootstrap method.

The models presented in the table only contain two control variables: self-confidence (two categories) and schooling (continuous variable). Every variables is measured in 2007.

Coefficients with \*\*\* are different from zero at the significance-level of 1%, coefficients with \*\* are different from zero at the significance-level of 5%, coefficients with \* are different from zero at the significance-level of 10%.

High self confidence: self confidence scale was recoded: the top 25% is coded 1, and zero otherwise.

Low self confidence: self confidence scale was recoded: the bottom 25% is coded 1, and zero otherwise.

of all the other social classes education is a significant channel to transmit the impact of self-confidence. We can also conclude that in case of the elite class, there are other important channels that transmit the impact of self-confidence. It is very likely that the past social class position is one of these channels, because without controlling for previous class position—but still applying the same set of control variables as in Table 4—we find a significant positive impact of self-confidence (the general marginal effect of self-confidence is around 1.33 percentage points,  $p < 0.05$ ).<sup>21</sup>

### Conclusion and discussion

In my paper I investigated intra-generational social class mobility in Hungary between the years of 1992 and 2007. Five social classes were defined based on occupational position which was then corrected with the social status index (a combination of income, wealth and housing dimension). The results reveal that some 28% of the total population were mobile in this time period (during the examined 15 years) and the majority of these people moved one step either up or down. In general,

<sup>21</sup> I investigated other channels for transmitting the impact of self-confidence. These channels however were partly highly correlated with schooling (like economic activity status) or the results were not as robust as in the case of the schooling variable (as in the case of age).

upward mobility was more probable than downward mobility. Emerging new social class positions, especially at the top of the social hierarchy, required people with high self-confidence, whereas low status positions were more open for people with low self-confidence—in these cases the structural mobility and downward mobility were higher than average.

The bivariate analysis supported that self-confidence does not uniformly influence the trajectories of mobility at different stages in the social hierarchy, since mobility from different starting positions require different non-cognitive skills. This result does not mean that self-confidence is not a significant factor in social mobility. Indeed, I pointed out that self-confidence has an impact on the working/deprived class destination, even after controlling for past class position. People with high self-confidence were prevented from the deprived position and were more likely to belong to the working class. In the case of higher status social classes, self-confidence also had a significant impact, but it was mainly transmitted through the channel of education.

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## Annex

### The creation of the variables

Table A1

#### OLS Estimation Results Predicting Self-confidence Scale Measured in 1993

	Unstandardized Coefficients	Standardized Coefficients
(Constant)	0.689***	
Self-confidence (1996)	0.324***	0.337***
Self-confidence (1997)	0.206***	0.211***
Self confidence (1996 × 1997)	0.003	0.016
R	50.286%	
R Square	25.286%	
N	2133	

Source: Keller, 2010: 410.

Dependent variable: Self-confidence scale measured in 1993.

Coefficients with \*\*\* are different from zero at the significance-level of 0.01. coefficients with \*\* are different from zero at the significance-level of 0.05. coefficients with \* are different from zero at the significance-level of 0.1.

The model is significant at 0.001 level.

Table A2

#### Main Statistics About Social Status Principle Component

	1992*	2007
Wealth index (correlation with social status)	0.82	0.81
Housing index (correlation with social status)	0.71	0.79
Income index (correlation with social status)	0.57	0.57
Eigenvalue	1.51	1.57
Cumulative Sums of Squared Loadings	50.29%	53.20%

\* Source Kolosi–Keller, 2010: 113.

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