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## Schooling, Parents and Country

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## **Schooling, Parents and Country**

by

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### Abstract

Our argument is that the importance of parent's schooling and female share of employment on children's schooling will vary by gender, ethnicity and economic system. We examine this issue across Germany, Hungary and the former Soviet Union. Our results indicate that there is a direct effect of economic system. Also, the slope coefficients vary among countries, ethnicity and gender. There are also differences in the human capital formation across ethnic groups and gender. While there is some assimilation across generations, it is far from complete.

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## Schooling, Parents and Country

### I. INTRODUCTION

This paper addresses the issue of how much economic system and ethnicity matter in schooling attainments. Schooling is examined in a "cross-cultural" context by comparing results across countries (i.e., across systems), as well as within a country, looking at these effects by ethnic group and gender. In particular, we focus on how the role of parent's schooling varies by country, ethnic group and gender, in helping determine the schooling achievement of their children.

Our working hypothesis is that the inter-group variation in educational outcomes is not simply a matter of discrimination -- the achievement of children in schools is subject to a number of influences. Parental schooling, for example, may be a proxy for a host of unobservable determinants, such as parental preferences for education, children's ability, and assistance given by parents in school work. That is, parental schooling variables are proxies for the efficiency with which parents can invest in children's education (a price effect) and the economic resources parents have available to invest in their children (an income effect).

Family and culture may interface with the schooling environment in different ways for different ethnic groups and under different economic systems. The educational achievement of students will in part reflect the learning conditions and social support provided by their community and country. Country (or economic system) and subculture (ethnic group) may proxy community support for schooling (for example, educational policy), competition for school places, and the life experience of students (war, business cycles, country policy, and

the role of immigrants in the economy). Furthermore, we might expect the economic system itself to directly impact schooling attainment. For example, we would expect the socialized educational system of the Former Soviet Union to produce different outcomes than the German system.

If country and culture matter we expect to see variations in the items that influence educational attainment across countries and subgroups which face different relative prices of market versus non-market activity, and across countries and subgroups that have differing elasticities of child-rearing activity with respect to labor force activity. In the next section we outline the data we employ. In Section III we analyze different aspects of the determinants of schooling, accounting for country, culture and gender. Section IV concludes. This paper draws heavily on the analysis of Gang and Zimmermann (1996) and Gang (1996). The reader is referred to these papers for more detailed and thorough analysis of the issues addressed here.

## II. DATA

The study makes use of three household level data sets: the German Socio-economic Panel (GSOEP) [Wagner, Burkhauser and Behringer (1993)], the Hungarian Household Panel Survey (HHPS) [Sik (1995)], and the Soviet Interview Project (SIP) [Gang and Stuart (1996)]. Each of these data sets contains information on various subgroups of the population: the GSOEP consists of Germans and immigrants into Germany and their families, the HHPS makes it possible to distinguish Gipsies and Hungarian, non-Gipsies, and the SIP allows us to identify by Republic of the former Soviet Union (FSU) each persons' place of birth. We use

these data to analyze demographically comparable groups, as defined in the next few paragraphs. Of course, the idiosyncracies of each data set do not allow perfectly comparable samples.

From the GSOEP, we use primarily the first wave, drawn in 1984. In 1986 a question was asked on parent's education, and we match this to the 1984 respondents. From the sample of the foreigners we keep those who were born in Germany or who arrived before the age of 16, and who in 1984 were 17-38 years old. These are considered to be the second generation migrants. It is important to understand the sample we are using. These are not the children of the people in the GSOEP (for an analysis of this group see Haisken-DeNew, Büchel and Wagner (1997)); rather these are adults the GSOEP who entered Germany before the age of 16 years, or who were born in Germany. Our total sample is 4594 Germans and comparable second generation immigrants.

The first wave of the HHPS was drawn in 1992. In 1993 a question on parent's education was asked, and we draw our data from the 1993 wave. The interviewers were asked whether they thought the respondent was a Gipsy or not, and we use this to identify Gipsies versus those Hungarians who are not Gipsies. We restricted our sample to those who were 17 to 47 years old in 1993. This leaves us with a sample of 2031 individuals.

The SIP data we employ provides us with a contemporary sample of émigrés who moved from the Soviet Union to the United States in the period from January 1, 1979 to April 30, 1982 and provides us with detailed background information on those who emigrated. The SIP data was collected in 1983 and reports on a variety of aspects of household behavior of respondents during their lifetime in the Soviet Union through the end

of their last normal period (LNP), the date on which they declared their intention to emigrate from the Soviet Union. The concept of LNP is important. It was assumed that once a family declared its intention to emigrate its circumstances would change, possibly dramatically, due to official hostility. Our study is based upon a subsample of 919 for whom both basic and extended household characteristics are known, and who were born in the various republics of the Former Soviet Union. Of these, we further restricted the sample to the 519 participants who were between 25 and 50 years old in 1983. While our GSOEP and HHPS samples consist of respondents born after World War II, our SIP sample includes individuals born as early as 1933. This was necessary to insure an adequate sample size. In our analysis, we control for the differences in cohort by including age on the right-hand-side.

Each data set has its own definition of each variable; we attempted to make the variables comparable. The critical variables of the study are children's and parent's schooling. For children's schooling, we translated the different degrees into years of schooling for all three data sets. This allows us to more easily make cross-country comparisons on level of schooling, and allows for easier calculation of elasticities. GSOEP provides data for each individual on the type of school attended. To convert these into years of schooling we followed the procedure outlined in Gang and Zimmermann (1996). Instead of just adding the standard years for the various educational degrees, we use a more conservative measure that adjusts for "duplicate" degrees and discounts alternative post-schooling degrees (vocational training, university and the like) by one year. A similar procedure was employed in translating the degrees in the HHPS and the SIP into years of schooling. For parent's schooling, using the HHPS and the SIP, we also directly translated degrees into years of

schooling. Though there were significant changes in the structure of schooling in the Soviet Union and Hungary, on balance parents went through the same general type of school system as the children [see Dobson (1984)]. We follow the same approach for the parents of Germans in the GSOEP. To obtain the schooling levels acquired by migrants in their home countries in the GSOEP, we look at the number of years a basic degree takes and assuming these years to persons who have at least "compulsory with degree", and half that amount to those who lack the degree (see Gang and Zimmermann (1996) for a discussion of this procedure). We did several robustness checks, including assigning those without a degree zero years of schooling, and found no differences in our estimates.

We also account for female labor force participation. Because of the lack of data across countries and over time on actual female labor force participation rates, we use the female share of total employment at the time the respondent was 10 years old. Where possible, we distinguish this by ethnic group and gender. We might, for example, expect a big difference in female labor force participation across these economic systems, and we might expect this to have an impact directly on children's schooling attainment and indirectly through the role of mother's educational background on children's attainment.

### III. ANALYSIS

We approach our questions in four ways. First, we examine whether there is an overall economic system effect. For this we combine our country samples, using dummy variables to capture country/economic system effects. Second, instead of pooling the data we run separate regressions for each country. Third, we run separate regressions for each ethnic

group. Fourth, we look at ethnic effects in more detail, including variables we have for Germany but not in our Soviet or Hungarian data.

### III.1 Overall Economic System Effects (Table 1).

West Germany is a highly developed market economy; Hungary a small relatively open socialist economy; the Former Soviet Union a large controlled planned socialist country. We can see some of the differences by examining simple means (unweighted and given the confines of our data sets). Among the post-World War II cohorts, those in Germany have 11.5 years of schooling, Hungarians 12.3 and those in the Former Soviet Union 10.5. Among the parents, the mother's have 5.2 in Germany (remember this includes overweighted guestworkers), 9.4 in Hungary and 7.7 in the Soviet Union. For Fathers, Germany 5.3, Hungary 9.9, and the Soviet Union, 8.34. Finally, the share of women in total employment at the time the children were ten years old: 35.1% in Germany, 44.5% in Hungary and 40.3% in the Former Soviet Union.

When our three samples are combined into one sample and we estimate the regression, we find our elasticities of respondents education with respect to mother's schooling, father's schooling, and share of women in total employment to be small and significant, and to differ for males and females (Table 1). There are significant differences in the role of mother's and father's schooling. Mother's schooling matters more for women than men. Father's schooling has the same effect on women and men. A rise in the female share of employment raises children's schooling, and this effect is larger for women than for men. Female share of employment may be a proxy for income, or it may be that with more women working,



children start their socialization into schooling systems earlier, and this effects their total schooling levels. Moreover, we find a significant difference by country in the determinants of educational attainment (the dummies for Soviet Union and Hungary are significantly different from zero). Generally, Soviets and Hungarians received 3.5 to 4.0 years less schooling than comparable people in Germany, *ceteris paribus*.

### III.2 Separate Regressions for Each Country (Table 2).

Estimating separate regressions for each country instead of pooling the data allows country or economic system to interact with all of our right-hand-side variables. We expect that the determinants of schooling, and particularly the role of parent's and parent's background differs among the Soviet Union, West Germany and Hungary. The pattern of results from Table 1 hold up, and the response of schooling to the included attributes is highly inelastic. However, we do see large variations in our elasticity estimates between countries. The German elasticity with respect to mother's schooling is much less than the Hungarian or Soviet, though they are all similar with respect to father's schooling. German females respond more to mother's schooling then do German males; for Hungarians, females respond less; while males and females in the former Soviet Union respond equally to mother's schooling. Father's schooling has virtually the same effect for Hungarians and Germans; for the Soviets males respond more readily than females. The response to females in the workforce swamps the parent's schooling effects. Here the variation is quite large, with females in Hungary having an almost unitary elasticity, while females in the former Soviet Union have an almost completely inelastic response. Overall, the response to females

working is much smaller in the former Soviet Union than in Germany or in Hungary.

### III.3 Separate Regressions for Each Ethnic Group (Table 3).

To more fully capture the effects of ethnic group subculture, we present results obtained by performing separate analyses for each subgroup of the population. Here we present a summary of those results for some ethnic groups. For a more complete discussion and analysis see Gang (1996). We further break down the analysis into males and females. This allows us a complete set of interactions of ethnicity and gender with our explanatory variables, rather than forcing ethnic differences into the intercept term. The gain is a better picture of the effect of parent's schooling on children's schooling by ethnicity and gender, as well as by country. We are not able to include female share of total employment on the right-hand-side in these regressions, as there is not enough variation in this variable within the ethnic group.

For Germans, the estimated elasticities of parent's schooling on children's schooling are very small, but significantly different from zero. Children's education is very inelastic with respect to parent's schooling. Father's schooling is more important than mother's, on the order of three times as important for males and twice as important for females. This pattern is not maintained among Germany's second generation immigrants. For the Turks parent's schooling has a weak, sometimes negative relationship, to children's schooling attainments. Schultz (1984) also found, for the United States, that there is a weaker link between the second generation and their parents than between the children of the native-born and their parents. Among the variety of possible explanations for this, it may be the shock of

immigration weakens the inter-generational transfer of human capital.

In Hungary, the average non-Gipsy born after 1945 had 10.7 years of schooling, while the Gipsy has a much lower 7.5 years. The level of Gipsy education is more compatible to the parental generation of non-Gipsy Hungarians. Gipsy mothers averaged 3.6 years, and fathers 4.6 years of schooling. For non-Gipsy Hungarians, parent's schooling matters to children, very slightly more so for females. Mother's and father's schooling have the same effects on children. It is a different matter for Gipsies. For females, parent's schooling has no effect. For males, father's does and mother's does not. The effect of father's is quite strong (though inelastic). Hypothetically, if the Gipsy father had twice their average level of education, the Gipsy son would have approximately 1.5 additional years of schooling.

For the cohort we analyze from the Former Soviet Union (FSU) we find the mean level of schooling quite high, and it is higher among males than females. Even parents' schooling is relatively high. The greatest gains in schooling has occurred outside of Russia and among females. It is quite clear that parent's education matters. Furthermore, the effect of mother's and father's schooling on children's are not significantly different from one another. However, examining the estimated elasticities presents a slightly different story, especially considering our small sample sizes. For Russians, father's education is more important, about 1.5 times than mother's.

We have found, contrary to the conventional wisdom, that overall the evidence indicates that father's education is more important than mother's, and that mother's schooling is relatively more important for females. However, this varies quite a bit for different ethnic groups, and there is a lot of evidence within this study that contradicts this general statement.

The effect of parent's schooling is generally less for second generation immigrants in Germany, and for Gipsies in Hungary. This may be because of the low schooling attainments of the parents, and the institutionalization of schooling in the children's generation.

### III.4 Detailed Analysis of Germany

Country and ethnicity, and to some extent gender, proxy for a host of attributes that vary among subgroups that effect schooling attainment. They may, as mentioned earlier, proxy community support for schooling, competition for school places, and the life experience of students (war, business cycles, country policy, and the role of immigrants in the economy). We are able to explore some of these attributes using the GSOEP, and examine the variation by immigrant vs. non-immigrant status. In Gang and Zimmermann (1996) we look at the educational attainment of the children of guestworkers in Germany, comparing it to the achievements of the comparable group of Germans using the same sample we described above. We highlight some of the results here, without reproducing the tables. In Germany, Germans receive markedly more education than other ethnic groups in their same age cohort. In terms of years spent in school Germans average 12.1, Spaniards 9.5, Greeks 8.9, Italians 8.3, Yugoslavs 8.0 and Turks 7.6 years. 47 percent of the Germans obtained at least a high school degree, while only 6 percent of the Turks did so.

For Germans, parent's educational background plays a significant role, with father's education being more important than mother's in influencing children's educational outcomes. Parent's education has a positive impact on both total years of education and the schooling level; vocational training is affected negatively. Highly educated parents have children who

generally choose forms of education other than vocational training.

For second generation immigrants, parental education is not a good proxy for parental influence. Migrants' education has no effect on the educational attainment of their children. These parents have made their human capital investment in their children through their decision to immigrate. With regard to their families' educational background, second generation immigrants have an equal start in the educational system of Germany.

Ethnicity does matter for the second generation migrants. This happens via various channels. The size of the ethnic network has an inverted U-shape effect on total years of education and on the schooling level: as the network size increases, educational attainment at first increases and then decreases. Gender also matters. A female Turk has about 7 years less German education than an otherwise similar German woman. Next are Italians (6 years), Yugoslavs (4.5), Greeks (4), and Spaniards (2). Whereas males in general get half a year more education than their female ethnic counterparts, the Turkish man has in total about 2 more years. Generally, competition in numbers and quality from Germans has little effect on the educational attainment of second generation immigrants. Where there is an effect (a quantity effect on years of education and a quality effect on vocational training), they appear to be complements.

Ethnic origin matters significantly in educational attainment in Germany. Germans, Italians, Yugoslavs, Turks, Greeks and Spaniards in Germany have very different educational experiences. However, assimilation in the acquisition of education is taking place. Second generation immigrants possess educational profiles that are closer to their comparable German cohort than their parents had in comparison to Germans in the parent's cohort.

#### IV. CONCLUSION

This paper addresses several questions. It asks to what extent children follow in parents footsteps, how does this differ between immigrant and non-immigrant groups, and how various factors enter into the investments parents and children make in children's schooling. Our argument is that the importance of these factors will vary by gender, ethnicity and economic system. Of course, these results are problematic. To enable us to use these three data sets we had to make some very strong assumptions, and severely restrict the variables in our analysis.

The major lesson to learn from this paper is that country and ethnicity do matter in schooling attainments. There is a direct effect of economic system (or country). Also, the slope coefficients vary among countries, ethnicity and gender. There are large differences in the human capital formation across ethnic groups and gender. While there is some assimilation across generations, it is far from complete.

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Table 1  
System/Country Effects on Schooling

	Characteristics of Country Samples			Total Sample		
	West Germany	Hungary	Former Soviet Union	All	Males	Females
Sample Size	4594	591	2031	7216	3598	3618
Years of Schooling of Respondent	11.46 (3.20)	12.30 (2.57)	10.54 (2.39)	11.27 (2.99)	11.38 (2.97)	11.16 (3.00)
Years of Schooling of Respondent's Mother	5.17 (1.53)	9.40 (3.75)	7.69 (3.19)	6.23 (2.77)	6.19 (2.78)	6.26 (2.75)
Years of Schooling of Respondent's Father	5.33 (1.73)	9.86 (4.05)	8.35 (3.37)	6.55 (3.03)	6.49 (3.03)	6.61 (3.03)
Share of Women in Total Employment (%)	35.14 (4.79)	44.47 (4.65)	40.34 (3.28)	37.37 (5.40)	37.17 (5.42)	37.56 (5.37)
Elasticity, Respondent's Education with Respect to Mother's Education				0.09 (0.01)	0.07 (0.01)	0.11 (0.01)
Elasticity, Respondent's Education with Respect to Father's Education				0.12 (0.01)	0.14 (0.01)	0.12 (0.01)
Elasticity, Respondent's Education with Respect to Share of Women in Total Employment				0.53 (0.04)	0.49 (0.05)	0.59 (0.06)
Fewer Years of Schooling Received by Respondent in Hungary Compared to Respondent in West Germany, <i>ceteris paribus</i>				3.58 (0.08)	4.02 (0.12)	3.18 (0.13)
Fewer Years of Schooling Received by Respondent in Former Soviet Union Compared to Respondent in West Germany, <i>ceteris paribus</i>				3.92 (0.16)	4.04 (0.22)	3.83 (0.24)

Source & Notes: Author's calculations using SHAZAM 7.0 from a combined sample of the GSOEP, HHPS, and SIP. Standard deviations and errors are in parentheses. Elasticities are derived from OLS regressions with respondent's years schooling on the left hand side. All coefficient & elasticity estimates are significant at 0.01. On the right hand side is mother's schooling, father's schooling, share of women in total employment at time respondent was age 10, respondents age (capturing cohort effects), a dummy variable for still in school, and dummy variables Hungarian and Former Soviet Union.



Table 2  
Country & Gender Specific Effects on Schooling

Sample	Mean Years of Respondent's Schooling	Elasticity of Respondent's Schooling with respect to		
		Mother's Schooling	Father's Schooling	share of Women in Total Employment
German Socio-Economic Panel				
All	11.46	.08	.14	.53
Male	11.67	.04	.16	.45
Female	11.25	.12	.12	.63
Hungarian Household Panel Survey				
All	10.54	.14	.15	.68
Male	10.39	.11	.15	.39
Female	10.69	.7	.16	.92
Soviet Interview Project				
All	12.30	.13	.12	.18
Male	12.48	.13	.15	.28
Female	12.15	.14	.08	.08

Source & Notes: Author's calculations using SHAZAM 7.0 from the GSOEP, HHPS, and SIP. Standard deviations and errors are omitted to save space. Elasticities and regressions are the same as reported in the notes to Table 1. Here the regression are run separately for each country and for males and females.

TABLE 3  
Country, Gender & Ethnic Effects on Schooling

			Estimated Elasticities	
	Sample Size	Children's Education (years of schooling)	Children's Education with respect to Mother's Education	Children's Education with respect to Father's Education
Germans				
Male	1920	12.3	.05	.15
Female	1920	11.9	.07	.13
Turks				
Male	161	8.3	-.21	.22
Female	132	6.7	-.20	-.08
non-Gipsy Hungarians				
Male	935	10.5	.10	.12
Female	990	10.9	.14	.12
Gipsies				
Male	54	7.8	-.03	.18
Female	52	7.1	.03	.10
Russians				
Male	105	13.6	.09	.14
Female	143	12.7	.08	.10
Ukrainians				
Male	101	12.3	.15	.07
Female	80	11.6	.11	.04

Source and Notes: Gang (1966). Calculations using SHAZAM 7.0. Samples were ethnic groups drawn from GSOEP, HHPS, and SIP for the subset of data described in the text. Standard deviations and errors are omitted to save space. In addition to the variables on the right hand side reported in the notes to Tables 1 and 2, here we include respondent's age-squared for all groups; urban for the HHPS; and urban, jewish, and migrated within the former Soviet Union for the SIP. Female share of total employment is not included in these regressions.