

The Short Term Effects of Immigrant Students on the Educational Achievements of Native-Born Students

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ABSTRACT

Since 1989 nearly one million immigrants from the FSU have arrived in Israel. Although well-educated on average, most of these immigrants lacked economic means. The purpose of the present study is to examine whether the presence of immigrants in schools affected the educational achievements of their Israeli-born peers. We analyzed data pertaining to 8,288 Israeli tenth graders who attended 208 schools in 1994. Respondents' records were obtained from the Ministry of Education and the Bureau of the Census. Using hierarchical models we examined the effects of the proportion of immigrant students in a school and of their parents' education on the probability that Israeli-born students in the school would earn matriculation certificates. Results did not yield evidence of any negative spillover effects on the educational achievements of the native students. Moreover, the presence of many immigrant students with high educational backgrounds increased the likelihood of Israeli-born students earning matriculation certificates.

INTRODUCTION

Over the past three decades, developed countries have witnessed a dramatic increase in the number of incoming international migrants. In this context, the question of whether the presence of immigrant students has an effect on the educational attainment of peers in the same learning environment becomes particularly relevant.

By the late 1990s approximately one million people had immigrated from the Former Soviet Union (FSU) to Israel (Sicron, 1998). Although most of them arrived with limited economic means, their educational level was quite high (Al-Haj and Leshem, 2000). In the mid-1990s about 10 per cent of all Israeli school students were immigrants (Chachashvili-Bolotin, 2007;2011). Although Israel has been an immigrant country since its establishment, so that the arrival and absorption of new immigrants in the education system was not a new occurrence, the Ministry of Education did not formulate any long-range strategy for integrating these immigrants in the education system. Instead, it focused on immigrant children as individuals and based its educational integration policy on the concept of immigration as a transient phenomenon (Sever, 2002). Accordingly, no educational policy was formulated that took into account the possible impact of immigrant students on Israeli-born students in terms of educational achievements.

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This article addresses the short term effects of immigration on the educational achievements of adolescents in the host society. Specifically, we studied how the infusion of educated but generally poor immigrants from the FSU may have affected the achievements of native Israelis. We asked whether the achievements of native students were depressed or enhanced by competition with the newcomers.

IMMIGRANT STUDENTS AND THE EDUCATIONAL ACHIEVEMENTS OF NATIVE STUDENTS

Investigations of the effects of waves of immigration on the achievements of native students have yielded an ambivalent picture. Immigrant children are sometimes viewed as a handicap to the learning climate in a school because they are usually part of a low-status group (Betts, 1998; Betts and Fairlie, 2003; Hoxby, 1998). Naturally, when newly-arrived immigrants are compared to white, non-poor, fully language-proficient native-born youth who attend highly-resourced schools, most will score lower on tests, earn lower grades and complete fewer years of schooling (Crosnoe, 2009; Kao and Tienda, 1995; Speciale, 2012). Immigrant students may divert teaching resources from other students if teachers allocate a greater amount of class time to assist them individually (Fletcher, 2010). They may also divert financial resources from native students, potentially lowering the quality of their education (Betts, 1998; Betts and Fairlie, 2003; Gould, Lavy, and Paserman, 2006; Hoxby, 1998). It was found that immigrant enrolment affects children from low SES families more than children from high SES backgrounds. Richer parents can more easily transfer their children to a learning environment with fewer immigrants or with immigrants whose language skills and educational background are higher, by enrolling them in private schools (Betts and Fairlie, 2003) or by moving (Cascio and Lewis, 2010). Such parents can also compensate in part for a school's deficiencies by providing their children with instruction at home or private lessons.

However, immigrants may also be viewed as a resource (Alvin, 1985). Sociologists are well aware that the motivation, aspirations and achievements of students are affected by the socio-economic composition of the student body in school (Kao and Tienda, 1995). Research on immigrant children's school performance reveals that if immigrant students are better educated or harder working than their native classmates, they will provide positive peer effects and may relax the resource constraint, and thus increase native completion rates (Hunt, 2012). Although many immigrants arrive with low levels of human capital, they may possess a unique mindset or skill (e.g. strong attachment to school, work, family, and community) that puts them ahead of native-born with similar human capital inputs. Recent studies have not found strong evidence of negative spill over effects from the presence of immigrant children on the educational achievements of native students (Geay, McNall, and Telhaj, 2013; Hunt, 2012; Ohinata and van Ours, 2013; Schneeweis, 2015).

Taken together, it seems unclear whether the presence of immigrant students will have a net beneficial or adverse effect on native peers' educational achievements. In addition, until now, most of the studies have examined the impact of immigrant students on natives' educational achievement where immigrants had a lower skill set than natives (Betts, 1998; Gould et al., 2006; Kristen and Granato, 2007; Ohinata and van Ours, 2013; Schneeweis, 2013). Apart from several studies, no attempt has been made to examine the effects of such children in countries where migrants are, on average, more skilled than natives (Seah, 2014). In a comparative study of three major immigrant-receiving countries (Australia, Canada and the United States) conducted by Seah (2014), dissimilar effects were found in each of the countries (Seah, 2014). While exposure to immigrant peers had a positive impact on the educational achievement of Australian natives, its effect on Canadian natives

was negative. In the third country, exposure to immigrant peers did not seem to have any effect on the achievements of US natives. The result for Canada suggests that even having relatively skilled parents does not guarantee that immigrant children will have non-adverse impacts on the educational achievements of peers.

In this context it is important to investigate the unique case of Israel.

RECENT IMMIGRATION TO ISRAEL FROM THE FORMER SOVIET UNION (FSU)

An important characteristic of the wave of immigration from the FSU in the 1990s was its great size both in absolute terms (about a million people) and in relative terms (17% of the entire population of Israel) (Sicron, 2012). In addition to its impressive scope, the immigration from the FSU had two important characteristics: very few of the immigrants came with economic means; and a very high percentage of the adult immigrants were educated. In terms of their cultural characteristics, education and academic achievements constituted the central cultural values that they brought to their new land and transmitted to their children (Chachashvili-Bolotin, 2007; Lissitsa, 2006; Lissitsa and Peres, 2011; Remennick, 2002).

In the early 1990s about 50 per cent of the immigrants held post-secondary degrees compared with 20 per cent of Israeli-born natives. In the first decade of their immigration, many of the newcomers did not find work in Israel commensurate to their professional skills (Eckstein and Weiss, 2004). Many of them sank to and remained in lower economic strata (Sheperman, 2008).

In addition, in Israel, as elsewhere, housing is more expensive in the large urban centres. Therefore, many immigrants sought affordable housing either in peripheral communities or in the poorer neighbourhoods surrounding urban centres (Horowitz, 1998). This geographic distribution also affected the distribution of immigrant students among schools in the country: while in some peripheral communities immigrants comprise over 20 percent of the student population (Zionit and Ben-Arye, 1995), in the middle class neighbourhoods of the main cities only 10 percent of the student population are immigrants. Thus, this case of immigration provides researchers with an unusual opportunity to examine the unique influence of an educated but poor immigration wave on the educational attainments of the local population.

ISRAELI SECONDARY EDUCATION DURING THE 1990s

During the 1990s Israeli secondary education consisted of two main tracks: the academic track and the vocational track. Students following the academic track were prepared for national matriculation exams, success in which was a prerequisite for admission to universities and to most colleges. Therefore, the matriculation certificate was an important stage in the educational and occupational selection process. To a large extent, it determined whether one would be able to pursue higher education and become a professional or manager, or whether one would join the working class.

Vocational tracks trained most students for the world of work, rather than for further academic study. Thus these tracks were usually attended by students with lower scholastic achievements, many of whom were from lower social strata. Students in the vocational tracks succeeded much less than those in the academic tracks. Moreover, vocational tracks usually did not prepare students for a full matriculation certificate, which is a prerequisite for entrance to Israeli universities (Sever, 2013).

Matriculation eligibility represents a primary and perhaps even exclusive entry ticket into higher education and to prestigious jobs in the marketplace; and this is the reason for examining how the presence of the large wave of immigration impacted matriculation eligibility among native students.

Research questions

- 1 What was the impact of the presence of the FSU immigrants in schools on the matriculation eligibility of Israeli-born students?
- 2 Did the mean level of parental education of FSU immigrant students in schools impact matriculation eligibility of Israeli-born students? And if so, was this effect related to the proportion of immigrant students in the school?

METHODS

Data

We analysed data pertaining to a sample of tenth-grade students enrolled in school in 1994. Information about the students in the sample was obtained from two sources: Ministry of Education student files and the 1995 National Census. The Ministry of Education files contain information on students for each grade level they attend through the end of secondary education, including whether or not they dropped out, matriculation subjects they were examined in, the level at which the examinations were taken, their grades in the different subjects and whether or not they were eligible for a matriculation certificate. The census enumerates all the households in the country and in addition collects detailed socio-economic information based on a 20 per cent sample. The Bureau of the Census merged the Ministry of Education files with the 20 per cent census records for both the students and their parents.¹ Thus, a file was generated which contained scholastic information on grades ten through twelve, including matriculation examinations, and detailed background information. We excluded from the file all students who attended Arab and religious schools because these were rarely attended by FSU immigrants. Since our study deals with the effects of the recent wave of FSU immigrants on native-Israeli students, we also excluded foreign born students who had immigrated prior to 1990. Our final sample consisted of 8,288 tenth graders in 1994 who attended 208 schools and for whom information was available on their subsequent high school trajectory and on their social background. For each school attended by students in our sample we computed the matriculation rate for the preceding cohort, that is, those who had attended tenth grade in 1991. The logic of using this variable as a control is explained below.

Variables

The *dependent variable* in the study was a dummy variable coded 1 for respondents who obtained a matriculation certificate.²

As will become apparent below, we modelled educational achievement as a two-level process: at the individual and the school levels.

The *student-level explanatory variables* were the following:

Immigrant: a dummy variable coded 1 for students who immigrated from the FSU in or after 1990.³ We used this variable for creating aggregated school variables that separately characterized Israeli-born and immigrant students.

Gender: A dummy variable coded 1 for females;

Track: a dummy variable was coded 1 for academic track;

Parental education: the average number of school years completed by the student's parents. If data were missing for one of the parents, the other parent's value was substituted for the average.

If data were missing for both parents, the average parental education of the group (immigrants or native-born) was used; *Parents' education missing*: a dummy coded 1 if education data for both parents were missing;

Economic background: a count of the number of durable goods available in the student's home at the time of the census.

The census questionnaire elicited information on the possession of several durable goods in the home such as VCR, washing machine and dryer, as well as the number of cars at the family's disposal. The values of this variable ranged from 0 to 14. If data about any item were missing, the average standard of living of the group to which the student belonged (immigrant or Israeli-born) was used; *Economic background missing*: coded 1 if data on family standard of living were missing.

All *school-level variables* were aggregated from the student level to the school level. We measured four variables at the school level:

Proportion of immigrants

The proportion of 1994 tenth graders in the school who were born in the FSU and who immigrated in or after 1990.

Average parental education of immigrants

Average parental education of of Israeli-born students

These two variables were measured as the school-mean of parental education for immigrant and native students respectively.

Matriculation eligibility rate among Israeli-born students who attended tenth grade in 1991 and were eligible for matriculation certificates in 1993. This variable was a control for the matriculation rate prior to the entry of FSU immigrants into Israeli high schools. In a note on causality (see note 5), which follows the description of our model, we explain the logic of using this variable as a control.

The model

In order to predict eligibility for matriculation certificates among Israeli-born students a two-level logit model was constructed (Bryk and Raudenbush, 1992). At the student level, the model is written as follows:

$$\text{Log}[p/(1-p)]_{ij} = \beta_{0j} + \sum \beta_m(X_{mi}) \quad (1)$$

Equation (1) indicates that the log odds of obtaining a matriculation certificate for Israeli-born student i in school j depends on m student characteristics X . The model assumes that the effects of the m student-level variables do not vary across schools.⁴

At the macro level, we estimated the effects of school-level variables on school differences in the intercept of the student-level equation:

$$\beta_{0j} = \gamma_{0j} + \sum \gamma_k(Z_{kj}) + u_j \quad (2)$$

This equation shows that the mean log odds of matriculation in school j is predicted by an overall mean and by a vector of k school-level variables (Z) including: control for the matriculation rate in the school prior to the entry of the FSU immigrants in the school,⁵ the proportion of immigrant students in the tenth grade, the mean parental education for immigrant and native students in tenth grade, and the interaction between the proportion of immigrants and the mean parental education of immigrants.

All continuous variables, at both the student- and school-levels were centered on their grand means. Dummy variables were kept in their original metric.

RESULTS

Descriptive analysis

We begin this section with descriptive statistics of the socio-demographic characteristics of immigrant and native students and their matriculation rates.

As shown in Table 1, eight per cent of the students in our sample were immigrants. On average, parental education among immigrant students was higher than that of Israeli-born students (14.2 years and 12.2 years respectively). It is important to emphasize that a difference of two years in parental education reflects the difference between having earned and not having earned a bachelor's degree. In the FSU, high school graduation was after grade 10, while in Israel the last year of high school was grade 12. Despite the higher level of parental education, the standard of living among the immigrant families was lower on average than of the Israeli-born families. The standard deviations of these variables (the level of parental education and the standard of living) indicate that in both respects, immigrants were a more homogeneous group than the natives. Immigrants were more likely than natives to attend vocational secondary education (59% versus 46% respectively) but immigrants were also more likely to obtain matriculation certificates (67% versus 56%).

Table 2 presents two correlations which show that immigrants were slightly more to attend schools with lower levels of matriculation eligibility and to study with students from low SES. This is indicated by the negative weak correlations between proportion of immigrants and matriculation eligibility rates in 1993 ($r = -0.21^{**}$, $p < .001$), and average parental education of Israeli-born students ($r = -0.20^{**}$, $p < .001$). These findings are in line with the research literature, which contends that immigrant students tend to enrol in schools with native students from a low socio-economic background (Ohinata and van Ours, 2013).

Multivariate analyses

In Table 3 we present the parameter estimates of a hierarchical logistic model of matriculation among Israeli-born students.

TABLE 1

DESCRIPTIVE STATISTICS OF STUDENT-LEVEL VARIABLES FOR IMMIGRANT AND ISRAELI-BORN STUDENTS (STANDARD DEVIATIONS IN PARENTHESES)

Student-Level Variables	Immigrants	Israeli-born	Significance of Difference
Matriculation Certificates	67.2	56.3	0.00
Vocational track	59.2	46.7	0.00
Girls	51.7	52.4	0.98
Parental education	14.2 (2.45)	12.2 (2.93)	0.00
Economic background	3.5 (2.10)	6.3 (2.29)	0.00
Missing values for parental education	4.7	1.2	0.00
Missing values for economic background	4.5	6.8	0.00
N of cases	662	7,626	
%	8.0	92.0	

TABLE 2

SCHOOL LEVEL VARIABLES – CORRELATIONS BETWEEN THE PERCENTAGE OF IMMIGRANTS IN THE SCHOOL, THE PERCENTAGE OF THOSE EARNING MATRICULATION CERTIFICATES IN 1993 AT SCHOOL AND AVERAGE PARENTS' EDUCATION OF ISRAELI-BORN STUDENTS

	% Earning Matriculation Certificates in 1993	Average Parents' Education of Native Students
% Immigrant students	-0.21**	-0.20**

**Significant at $p \leq 0.01$.

TABLE 3

HIERARCHICAL LOGIT MODEL FOR MATRICULATION CERTIFICATES, NATIVE STUDENTS

Variables	Model 1	Model 2
Student-level equation		
Intercept	-.36**	-.28
Gender (Girls = 1)	0.31*	0.31**
Parental education	0.12**	0.13**
Parental education missing	-.03	0.10
Economic background	0.09**	0.10**
Economic background missing	-.13	-.13
Track (Academic = 1)	0.71**	0.58
School-level equation for the intercept		
Average parental education among Israeli – born students	0.32**	0.05
Proportion of immigrants	1.39 [#]	1.09 [#]
Proportion of those earning matriculation certificates at school in 1993		2.61**
Variance components:		
Student level	0.701	0.701
Full model	0.469	0.239
Proportion of reduction in variance using full model	33%	66%

#Significant at $p \leq 0.08$. *Significant at $p \leq 0.05$. **Significant at $p \leq 0.01$.

Turning first to the student-level variables in Table 3, we see that, as one would expect, girls were significantly more likely than boys to earn matriculation certification; studying in the academic track also increased the odds of earning matriculation certificates; both parental education and family economic background enhanced the odds of earning matriculation certificates. In addition, all coefficients of the missing value indicators were insignificant, indicating that the lack of information was random.

In the equation of the intercept, we see that the average level of parental education among Israeli-born students had a highly significant effect on the log odds of obtaining matriculation certification. The proportion of immigrant students in the schools had a positive effect on the odds of Israeli born students earning matriculation certificates and reached the threshold of statistical significance. This finding is in line with the recent studies, that have not found evidence of negative spill over effects from the presence of immigrant student on the educational achievements of native students (Geay, McNall and Telhaj 2013, Hunt 2012, Ohinata and van Ours 2013).

Model 2 repeated the analysis but added a control for school quality prior to the massive entry of FSU students into Israeli high schools (*Proportion obtaining matriculation certificates in 1993*). We controlled for this variable in anticipation of criticism that the beneficial effect of immigrants

TABLE 4

HIERARCHICAL LOGIT MODEL FOR MATRICULATION CERTIFICATES AMONG ISRAELI-BORN STUDENTS WHO ATTENDED SCHOOLS ALONGSIDE IMMIGRANTS

Variables	Model 1	Model 2	Model 3
Student-level equation			
Intercept	-.25*	-.18 [#]	-.17 [#]
Gender (Girls = 1)	0.29**	0.29**	0.29**
Parental education	0.12**	0.13**	0.13**
Parental education missing	0.07	0.21	0.20
Economic background	0.10**	0.10**	0.10**
Economic background missing	-.20 [#]	-.21 [#]	-.21 [#]
Track (Academic = 1)	0.70**	0.56**	0.56**
School-level equation for the intercept			
Average parental education of native students	0.32**	0.06	0.06
Average parental education of immigrants	0.06 [#]	0.00	0.04
Proportion of immigrants	1.16	1.12	1.30 [#]
Proportion earning matriculation certificates in 1993		2.71**	2.58**
Interaction: Proportion immigrants × Average parental education of immigrants			1.12*
Variance components:			
Student level	1.06	1.06	1.06
Full model	0.48	0.24	0.23
Proportion of reduction in variance using full model	55%	77%	77%

#Significant at $p \leq 0.08$. *Significant at $p \leq 0.05$. **Significant at $p \leq 0.01$.

on the achievement of native students was spurious resulting from the self-selection of immigrants into schools with higher matriculation eligibility. As can be seen, the proportion of students obtaining matriculation certificates in 1993 had a strong and highly significant effect on the log odds of matriculating. Adding the *Proportion obtaining matriculation certificates in 1993* variable not only made the average parental education variable non-significant, but also explained 66 per cent of the variance. However, the net positive and marginally significant effect of the proportion of immigrants on natives' achievement remained, even if slightly reduced.

In Table 4 we presented the findings of the hierarchical logit model which predicted the log odds of matriculation eligibility among native students who attended schools alongside immigrants. The average parental education of immigrants can only be defined in schools that are attended by immigrants. Therefore, in the analysis we retained only native students who attended schools with a presence of immigrant students.

As can be seen in Model 1 the main effect of the average parental education of immigrant students was positive and significant. However, controlling for proportion of matriculation eligibility prior to the massive entry of FSU students (1993) fully mediated its effect. In addition, the effect of the average parental education of Israeli-born students, which was significant and positive in Model 1, declined sharply and lost its significance once the school rate of matriculation eligibility in 1993 was controlled. Adding this variable decreased unexplained variance by more than 77 per cent. The proportion of immigrant students in school had a positive but insignificant effect on the log odds of Israeli-born students earning matriculation certificates.

In Model 3 the interaction between the average parental education of immigrant students and the proportion of immigrant students in the school was added. As can be seen, the interaction effect was positive and significant. The larger the proportion of immigrants in the school with higher parental education, the greater were the log odds of matriculation certification among Israeli-born students. Note however, that the main effects of the two variables which were included in the interaction were either insignificant (average parental education among immigrant students) or

marginally significant (percentage of immigrant students). This indicates that the beneficial effect of studying alongside immigrant students whose parents are educated was conditional on the immigrants constituting a sizeable minority in the student body.

DISCUSSION AND CONCLUSION

In this article we examined the initial and short-term effects of mass immigration to Israel from the FSU on the educational achievements of Israeli-born high school students. The findings of this research support recent studies that found no evidence of negative spill over effects from the presence of immigrant children on the educational achievements of native students (Geay et al., 2013; Hunt, 2012; Ohinata and van Ours, 2013).

The results of this study show that in and of themselves, both the proportion of recent FSU immigrants in a school and the average educational level of their parents do not affect the educational achievements of Israeli-born students. However, a conditional effect was found: the effect of the proportion of immigrant students in a school depends on the level of parental education. In other words, the beneficial effect of immigrants' parental education depends on the proportion of immigrants in the school. The larger their proportion in the school body, the greater is the effect of their parents' education on the achievements of Israeli-born students. Our findings show that the presence of students whose parents have a high educational background represents an advantage, and the presence of students with a low educational background a burden, in any cases in which the influence of immigrant students on the educational achievements of Israeli-born students is worth mentioning.

One possible explanation for the positive effect of immigrant children on the educational achievements of their native peers relates to the socio-economic characteristics of the immigrant families and the native population. Due to the lack of economic means, many educated immigrants from the FSU were forced to settle in socially peripheral areas of Israel, which have traditionally been recognized as educationally and socially underprivileged. As a result, FSU immigrant students studied with native peers from low educational backgrounds with low educational achievements. We can assume that presence of a "critical mass" of immigrant students whose families valued school education highly increased the importance of academic achievements in the whole school, stimulated educational motivation both among students and teachers and as a result raised the educational achievements of the native students.

The beneficial effects of the influx of educated immigrant neighbours are probably similar to the benefits that would have accrued had large numbers of educated natives moved to the periphery. However, this did not and will not happen under normal circumstances.

To conclude we would like to bring a quotation from Picard (2003) from the magazine "*Another country: One million Russian immigrants, how we have changed and how we will change*:"

This geographic distribution [the diffusion of immigrants in the periphery] resulted in a substantial increase in the population of the periphery, for the first time since the days of the absorption of the North African immigration in the 1960s. Every person with eyes in his head can see the enormous physical change that has taken place in peripheral settlements in the last decade. Neighbourhoods were built, roads paved, commercial centres opened. Although the source of this drive for the development was the immigrants from the FSU, the main beneficiaries have been the veteran citizens, mostly of Oriental origin. Apartments that for years went without buyers and were rented for nominal fees were now sold at prices that at times were tenfold their original value. Veteran citizens were able to sell their old apartments and upgrade their own dwellings. This improvement was manifest not only in housing (p. 66).

To which we add that the improvement extended to the educational domain as well.

Finally, the research findings indicate the importance of following up and examining this issue, especially in light of the fact that more than two decades have passed since the large wave of immigration from the FSU entered Israel. It is important for future studies to examine the effect of the presence of veteran immigrant students on the academic achievements of native-born Israelis. Similarly, studies should also examine whether this effect varies at different levels of the education system.

NOTES

1. We employ 1995 Census data because the next population census was not held till 2009 and its data have not yet been released. Census and Ministry files were merged by national IDs. The merge was performed by authorized CBS personnel and the data were made available to us after all identifying information was deleted and some variables were collapsed into broad categories to prevent possible identification of respondents.
2. We could not measure educational achievement as students' matriculation grade point average because this variable does not apply to dropouts or to those who did not sit for any matriculation examination. Furthermore, students who do sit for exams do so in many different subject combinations and levels.
3. In this study we purposefully decided not to include the ethnicity variable. In our sample, there is no information of the country of origin of the students' grandparents. In this age group, more than half of the students are at least third generation Israelis. Current studies indicate that ethnic gap disappears when the study controls for parents' education.
4. In unreported analysis we tested whether the slope of each of these variables varies between schools. Only the slope of *track* showed a significant between school variance. However, allowing the slope of *track* to vary between schools did not alter the other results of the model.
5. This control is intended to alleviate possible concerns about the causal direction between the school mean parental education of immigrants and the odds of matriculation among native students. As one can assume that the positive effect of the former on the latter may be spuriously related to self-selection of immigrants into quality schools in which matriculation rates are high. In 1991 there were very few FSU immigrants in Israeli tenth grades. In the Soviet educational system, secondary education ends in tenth grade (e.g. Gerber et al 2004). Therefore, immigrants who arrived in 1990–1 with ten years of schooling were regarded as high school graduates and were not required to complete high school in Israel. Only those with nine years or less of schooling in the FSU were required to continue in Israeli high schools. However, most of *those* were also encouraged to stay back a year and learn Hebrew before taking the matriculation exams in grades 10–12. Thus, the school matriculation rate of natives in 1993 precedes the entry of FSU immigrants and should alleviate the concern about causality.

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