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The impact of parental migration on children's school performance in rural China

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The impact of parental migration on children's school performance in rural China

Abstract: A substantial amount of China's rapid economic growth in has been attributed to its large proportion of rural-urban migrants, but more than 80% of these migrants' children are still left in rural areas mainly due to China's household registration system. Identification of the impact of parental migration on children's school performance may encounter the problem of endogeneity. Using unique survey data collected from Qinghai Province and the Ningxia Autonomous Region in Northwestern China where more than 7,100 Grade 4 & 5 students from 74 rural elementary schools participated and by the instrumental-variable estimation, our results indicate that parents' decisions to migrate are exogenous to their children's schooling performance, and one more migratory parent can marginally reduce their child's math score by 1.73 percent in percentile rank, which implies that the current economic growth in China partially jeopardizes the future of the next rural generation. In addition, we find a causal relationship between the poor performance of ethnic minorities and both geographical and social disadvantages.

Keywords: instrumental variables; migration; rural China; school performance

The impact of parental migration on children's school performance in rural China

Introduction

A substantial amount of China's rapid economic growth can be attributed to the exodus of a massive number of hard working rural-urban people, the estimated number of emigrants is more than 100 million(Taylor and Martin, 2001). Migration is important because it is so tightly linked to labor productivity growth, which in turn is a significant contributor to rapid economic growth rates and long-run national welfare (De Haan, 2000; Taylor and Martin, 2001; Tian X. and Yu, 2012). Migration not only imparts significant benefits to individuals through higher returns for working capability, but also has strong and transformative impacts on the rural families and the communities from which the migrants come (Skeldon, 2002; Ellis, 2003; Taylor *et al.*, 2003; Du *et al.*, 2005). However, the same argument may not be extended to other family members, particularly their children. In most cases, their school-aged children are left behind in villages when the parents move to the city for work(Wu *et al.*, 2004). Mckenzie and Rapoport(2007) indicate that children in migrant families are less likely to be attending school and complete less total schooling years than the children in non-migrant households. Parental migration could also lead to diminishing parental supervision, resulting in a reduction of study time for children who find themselves lumbered with extra household chores in their parents absence (Hanson and Woodruff, 2003). As these children are destined to be the future workforce of China, the negative impact of migration on the quantity and quality of their human capital casts shadows on the prospect of sustainable

economic growth in China.

China has a special Household Registration System (*hukou*), which segregates rural and urban residents, and only allows citizens to receive public services, such as education and pension, in their registration place (Chan and Zhang, 1999). Under the constraints of the institutional arrangements in China, rural migrant families living in cities benefit little from the available human service programs which fund education and health, and the situation is exacerbated by the residency problem. One example of the problems caused by this is that their children cannot be enrolled in urban schools (Lai *et al.*, 2011). Even though in some cities there are a number of private and for-profit schools which the children of migrants' can attend, the high standard of tuition found there is let down by poor facilities, and under qualified, demotivated teachers. Furthermore, most of these schools are not certified by the government and because of this run the risk of being shut down. Most migratory parents have to leave their children in the registered rural place. This can reduce the cost of education a little, but results in less parental supervision of the children. After reviewing a large volume of empirical literature on the relationship between parental involvement and monitoring, Spera (2005) indicates that parental involvement and monitoring are robust predictors of children's academic achievement. Hence, it can be speculated that the absence of parental involvement and monitoring may result in the hindrance of these children's school performance.

Human capital is vital for economic growth, and exhibits various dimensions, such as education and health (Schultz, 1961). In one dimension, the current literature has examined the effects of parental migration on children's health and nutrition, even though some results are contradictory. For example, Mansuri(2006) makes the assertion that migration could have

positive impacts on height-for-age Z score, whereas Nobles(2008) suggests a different story.

In the other dimension, the current literature also has shed light on the relationship between rural-urban migration and education. Lucas(2004) builds up a model of rational expectation theory to investigate the relationship between human capital accumulation and rural-urban migration. Kochar(2004) found that urban economic returning rate of education can increase schooling enrollment in rural India in order to find a better job in cities. But Jensen(2010) points out that the perceived returning rates are often underestimated for rural pupils or their parents. Furthermore, Liang and Chen(2007) indicate that temporary parental migration into the urban Guangdong province of China can significantly decrease the children's school enrollment rate due to lack of care. On the other hand, some researchers have found a positive relationship between migration and student's education. For instance, Glewwe and Jacoby(2004) find a significant and positive relationship between wealth and demand for education. Because migration increases the household income, it thereby contributes positively to child development(Blau, 1999).

Parents' migration, usually without consent of their children, can be expected to lead to inconsistencies in children's school performance in various different directions, which gives rise to the need for empirical evaluation. Usually the migratory parents do not have enough time or are just unable to take care of their children who have been left in rural areas. Even though the children are often cared for by their aged grandparents, some parental functions, such as parental practices and parent styles, cannot be substituted. The literature in question has pointed out that these things can have a significant impact on students' school performance (Darling and Steinberg 1993; Spera 2005), meaning that the absence of parents'

involvement may have substantial consequences on children's human capital accumulation(Djajić, 2003), and this could result in the eventual casting of shadows on sustainable economic growth for China in the future.

On the other hand, migrants can increase their own level of economic livelihood, and these families can invest more in aspects of their children's education such as tutoring, computer-assisted learning and other academic resources which effectively improve the children's intellectual performance, as an indirect positive effect of migration(Li *et al.*, 2010; Lai *et al.*, 2011).

To date, the direct impact of parental migration on children's school performance in China, or broadly speaking, the quality of children's human capital accumulation, is an area of concern in which an insufficient amount of empirical research has been conducted. For instance, Cheng et al.(2009) surprisingly found that parental migration does not have significant negative impact on schooling performance in rural areas of Shaanxi province, on the contrary pupils improve their school performances in families which have a migratory father. The results, as pointed out by the authors of the paper itself, might not be robust. The main hurdle for conducting an ideal research substantially rests on the problem of endogeneity, mainly resulting from the possible reverse causalities between children's school performance and parental migration. In counteraction the possible negative impact of parental migration on children's school performance, it could be that parents can alter their decision to migrate in order to improve their children's performance in school.

In order to examine the effect of parental migration on children's school performance

and identify whether the migration decision is exogenous, this study proposes instrumental variable estimations to answer these questions, with the use of unique survey data obtained from a sample of 7,100 Grade 4 & 5 pupils in the rural areas of the Ningxia Autonomous Region and Qinghai province in Northwest China.

The rest of the paper is organized as follows: We first introduce the survey methods and present data descriptions; we then provide the econometric models and identification strategy, which is followed by the validity tests, estimation results and discussions and finally we conclude by summarizing the findings and offering policy implications.

Survey region and data

The survey was conducted in October 2009 and the sample included 7,183 Grade 4 & 5 pupils from 74 rural primary schools in 10 counties in Ningxia Autonomous Region and Qinghai Province. The two regions are located in northwestern China with distinct geographic features. Ningxia consists of many arid, dry deserts; while Qinghai has massive mountain range which surrounds the Tibetan Plateau. Figure 1 depicts the location of each school in a map.

According to the official statistics(C.S.B, 2010), per capita incomes of rural households in Ningxia and Qinghai are respectively 21.4% and 35.1% lower than national average level, mainly resulting from their disadvantaged geographic locations. In addition, a fair amount of the population in both provinces belongs to ethnic minorities. For instance, 46.3% of the population in Qinghai province Tibetan and Hui; and 36% in Ningxia autonomous region is Hui ethnicity.

Using an income-stratified sampling method, we randomly select 31 towns from each province according to local per capita gross value of industrial output (GVIO). In each township only the schools which had Grade 4 & 5 classes and enrolled more than 400 students were selected for this project. In total, 74 schools (38 in Qinghai and 36 in Ningxia) were involved in our project, and 7,100 students of Grade 4 & 5 were selected. Our sample indicates that 2,949 students have at least one migratory parent, which makes up about 41.1% of the sample, implying that parental migration is highly prevalent in both provinces.

The survey contains detailed information on the schools and local communities, the students' standard math test scores and both their personal and family characteristics. Table 1 and Table 2 respectively present the explanations to and summery statistics for the main variables. To facilitate comparison, we report the descriptive statistics respectively for the full sample, the sample without migratory parents, the sample with only one migratory parent, and the sample with two migratory parents. We observed that there are no substantial differences of students' gender, grade, ethnicity and parents' education among the families with zero, one and two migrants. However, the number of family assets like refrigerators, video cameras and air conditioning increased at the same time as the migrant numbers while the students' math test score decreased.

There are many ways to measure school performances; and most studies prefer using the test scores of math and language as instruments(Alderman *et al.*, 2001; Chen *et al.*, 2009). In Chinese elementary schools, Chinese language and math are the main courses, but we only use standard math test scores as a measure of the school performance in this study, because Chinese language tests might not be comparable across the ethnic minority areas. Some ethnic

minorities such as the Tibetan's, are still using their own language. After having the math test scores on hand, we calculate the percentile of each student score within his/her grade in order to make comparisons. Otherwise, the scores are incomparable when pooling Grade 4 and Grade 5 classes together.

Econometric Model and Identification Strategy

There are many difficulties impeding the identification of parental migration on children's school performance. Besides the aforementioned problem of endogeneity, sample selection also plays an obstructive role.

Through research in the urban Guangdong province of China, Liang and Chen(2007) found that temporary parental migration can significantly decrease the children's school enrollment rate. It is possible that sample selectivity bias may occur in this study as some students who are performing poorly may drop out earlier. Liang and Chen(2007)'s samples were collected from urban areas and the students contained in the sample cover all grades ranging from Grade 1 classes in elementary schools to senior students in middle schools. China carries out a policy of enforcing 9-years of compulsory education with most drop-outs occurring in middle school. For example, middle school enrollment rates were 98% in 2007, but the graduation rate was only 80.48%(M.O.E, 2008). Because drop-outs in elementary schools (younger than 13 years old) are too young to work in the labor market, we can presume that sample selectivity is not a substantial problem in this particular study.

- Model Specification

We can specify the econometric model as follows:

$$(1) \quad y = \alpha + \beta M + \gamma' X + u$$

Here y denotes the standard math test score and M denotes the number of migrant parents. Specifically, if both parents were migrants then M is 2; if only the father or mother was a migrant then M is 1 and M is 0 if neither of the parents were migrants. β is the coefficient for migration which we are interested in, and measures the marginal impact of parental migration on children's school performance. X is a vector of exogenous controlling variables, comprising grade, gender, ethnicity, both parents education, and household wealth, and γ is the related coefficient vector.

Brown and Park(2002) find that school performance is strongly correlated with household income. However, we cannot obtain a specific number for it, as most households do not want to or can not reveal their real incomes in the rural areas of our survey. Because of this we use the possession of certain rural "luxury" appliances to proxy for household wealth. We chose specific items like the refrigerator, video-camera and air conditioning, the possession rates for these assets were 19.11%, 4.54% and 4.08% respectively in the whole sample. α is the intercept; and u is a random error following a normal distribution.

Furthermore, in order to control for the unobservable heterogeneities between different schools, we adopt a fixed-effects model:

$$(2) \quad y_{ij} = \alpha_0 + \alpha_i + \beta M_{ij} + \gamma' X_{ij} + u_{ij}$$

Here i and j respectively denote school and student. In comparison to Equation (1), we control the school effects which are captured by α_i and once again u_{ij} is a random error following a normal distribution.

- Identification Strategy

If the aforementioned reverse causality between migration and school performance exists, both the OLS estimation of Equation (1) and the fixed-effects model of Equation (2) are not consistent. Hence, the Instrumental-Variable Estimation is proposed in order to tackle the problem of endogeneity.

As a means of identifying the impact of parental migration on children's school performance, we propose the use of the following three variables as the instruments for migration: the number of family members, the number of labor forces within the household and a variable of the cluster-effect of migration. The number of family members and labor forces within the household are expected to affect migration decisions, but no direct links with student school performance are apparent. Even though Becker and Gregg Lewis (1973) argue that there might exist an interaction between the quantity and quality of children, it does not apply to the context of China due to the strict 'one-child' policy. The cluster-effect variable, proposed by Benjamin(1992), is calculated as the average number of migrant parents of other students in a particular school, this is a proxy for local migration situation because current studies show that migrating neighbours can play a significant role in facilitating the migration process (Zhao, 2000; Zhao, 2003). The exogeneity of the instrumental variables can be also verified by Sargan (1958) overidentification test as we do in the following part.

The validity of instruments is significantly hinged to the robustness of the results. It is believed that the three variables mentioned above are correlated with a household's decision to migrate, but are exogenous, in that they are believed to be valid as instruments of family

migration decisions. In spite of all this, the validity should be tested quantitatively.

Check for weak instruments

We first need to verify whether the instruments are weak, which can be fulfilled by the test proposed by Staiger and Stock (1997). If the instruments are weak, the normal distribution provides a poor approximation to the sampling distribution of the IV estimator, even if the sample size is large. The first-stage F-test value of the weak instruments test is 4986.625, which is significantly larger than the usual critical value of 10, and implies that the instrumental variables are not weak.

Check for instruments exogeneity

Secondly, we should test the exogeneity of the instruments, which is linked to the consistency of the IV estimation. Provided that we have three instrumental variables, we can carry out an overidentification test to check whether the instruments are exogenous. The P-value for the Sargan's statistic (Sargan, 1958) of overidentification restriction is 0.1902, which cannot reject the over-identity and hence proves the exogeneity of the instruments.

Check for redundant instruments

Thirdly, we have three instruments in which certain variables such as the number of family members and the number of labor forces, might be correlated which could cause the problem of instrument redundancy. Breusch et al. (1999) show that the condition for the redundancy of a set of instruments can be stated as follows: In the reduced-form regressions of the endogenous regressors on the full set of instruments, the redundant instruments have statistically insignificant coefficients; or partial correlations between the endogenous

regressors, in these cases the instruments in question are zero. According to this, the redundancy tests can reject the null hypotheses of redundancy of both “family numbers” and “labor forces” respectively at the 10% (P-value=0.089) and 1% significant levels (P-value=0.009).

The validity tests of instruments show that the instrumental variables are strong, exogenous, and not redundant, hence the following empirical results are robust and reliable.

Empirical results

- Model Comparison

The estimation results are reported in Table 3, which includes: an OLS estimation, a fixed-effects estimation and an IV fixed-effects estimation. The first thing which becomes apparent is the similarity of the coefficients of the three models, and this likeness shows that our results are quite robust.

However, when compared with the OLS model, the F-tests rejected the null hypotheses of no differences between schools in both the fixed-effects and IV fixed-effects models, and hence the fixed-effects models are preferred. In addition, the Hausman test of endogeneity for the IV fixed-effects model cannot reject the null hypothesis of exogeneity of migration status (P-value=0.577). It implies that parental migration status is exogenous, and that children’s school performance does not have significant reverse impact on parental migration. What’s more, it also indicates that the ordinary fixed-effects model is the ideal model, which the following discussion will be based on.

- Results Discussion

The estimation results indicate that all the coefficients make sense and are consistent with our anticipation. They are all statistically significant at the 5% level except for the variables of Grade, refrigerator and ethnic groups. The insignificance of the grade coefficient in particular, indicates that there is no significant difference between Grade 4 and Grade 5 in school performance in our survey. The insignificance of the ethnicity coefficient imputes no systematical differences of student performance between different ethnicities at least in our survey samples. The current education gaps between different ethnicities may indeed be caused by regional differences, as most ethnic minorities are located in remote and geographically disadvantaged areas.

The most important parameter is the coefficient for the variable of migration, for which the figure is -0.0173, this indicates that parental migration does have a significant negative impact on child school performance. Specifically, the presence of one additional migratory parent can cause a marginal decline of 1.73% in math test rankings. It implies that even though parental migration results in personal economic gain for the family in question it can have a negative impact on the human capital accumulation of the next generation. Either from an economic perspective or from a perspective of human rights, Chinese government should take active measures to tear down the institutional barriers between urban and rural areas, such as allowing rural migrants' children to receive education in the urban area where their parents work, to facilitate the close supervision of children in migrant families.

Our results also indicate that the gender bias in school performance still exists, as the

coefficient for gender (male) is 0.0311 and is also statistically significant. It implies that boys perform better in math tests, which perhaps results from discrimination towards girls, particularly in undeveloped rural China (Klasen and Wink, 2003).

The coefficients for both video-camera and air conditioning are negative and statistically significant. It indicates that the results are quite robust, and implies that rich family students do not perform quite as well, perhaps because they have less incentive to study.

The coefficients for the education of mother and father are 0.002 and 0.004 and both are statistically significant. It implies that having well educated parents can significantly improve a child's school performance, similar results have been found in the studies of Kochar (2004), Spera (2005) and Chen et al. (2009). One particular finding in this study is that for one more year of a father's education, a significant increase of 0.4% in their child's math rank can be observed. As pointed out by Spera (2005), increased parental practices and monitoring can have a significantly positive impact on Children's achievement at school.

Finally, we find that all the coefficients for ethnic minorities are statistically significant and negative in OLS estimation, but they lose their significance when the fixed effects of school are controlled. This implies that the reasons why minorities do not perform well in math tests in comparison to the ethnic majority of Han pupils in China, are that rather than being caused by inherent reasons such as race, it results from geographical and social disadvantages. Besides the language or cultural barriers to themselves, those minority schools tend to have relatively poor education facilities and under-qualified teachers when compared to the Han schools, because the ethnic-minority schools are often located in areas which are

remote, and both geographically and economically disadvantaged.. As a policy implication it would be a wise decision for Chinese government to invest more heavily in the training and motivation of teachers.

Conclusion

China's rapid economic growth is substantially driven by the large number of parents migrating from rural to urban areas in their search for work; as a result more than 80% of the migrants' children are left behind in rural areas due to China's household registration system. The relationship between parental migration and children's school performance has been paid a fair amount of attention over the years, the reason for this is that it has important policy implications for the economic growth of a country in the long run. However, there are many unsolved problems found in the current literature, for instance the identification of the impact of parents' migration on children's school performance and whether the parents' migration decision is exogenous to children's school performance.

Using unique survey data collected from Qinghai Province and the Ningxia autonomous region in China involving more than 7,100 Grade 4 & 5 students from 74 rural elementary schools, we employ fixed-effects instrumental-variable estimations, and identify that the rural-urban migration of parents has a significantly exogenous and negative impact on children's school performance. This is clear through the finding that one more migratory parent can marginally reduce a child's math score by 1.73 percent in the percentile rankings. It is not a huge number, but implies that even though migration has short term financial benefits to a family it has a significantly negative impact on the human capital accumulation of the children in the long run; and the current economic growth in China partially sacrifices the

future of the next generation of Chinese workers as a result. In addition, the parents' decision to migrate is exogenous to their children's school performance. Such a disadvantage of rural-urban migrants and their children might be created by the rural-urban institutional barriers. In order to make economic growth sustainable, and improve human rights, Chinese government should take active measures to dismantle these barriers, for instance, abolishing the current household registration system, and creating a better learning environment for the children of migrants.

Other findings include that female students and students in ethnic minority schools do not perform well in math exams, discrimination against girls, poor educational facilities and unqualified teachers in minority schools could be the reasons for this. Chinese governments should make more constructive policies to eliminate gender discrimination and increase investment in schools situated in minority areas to promote the education of female students and ethnic minorities.

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Figure 1 Distribution of sample schools

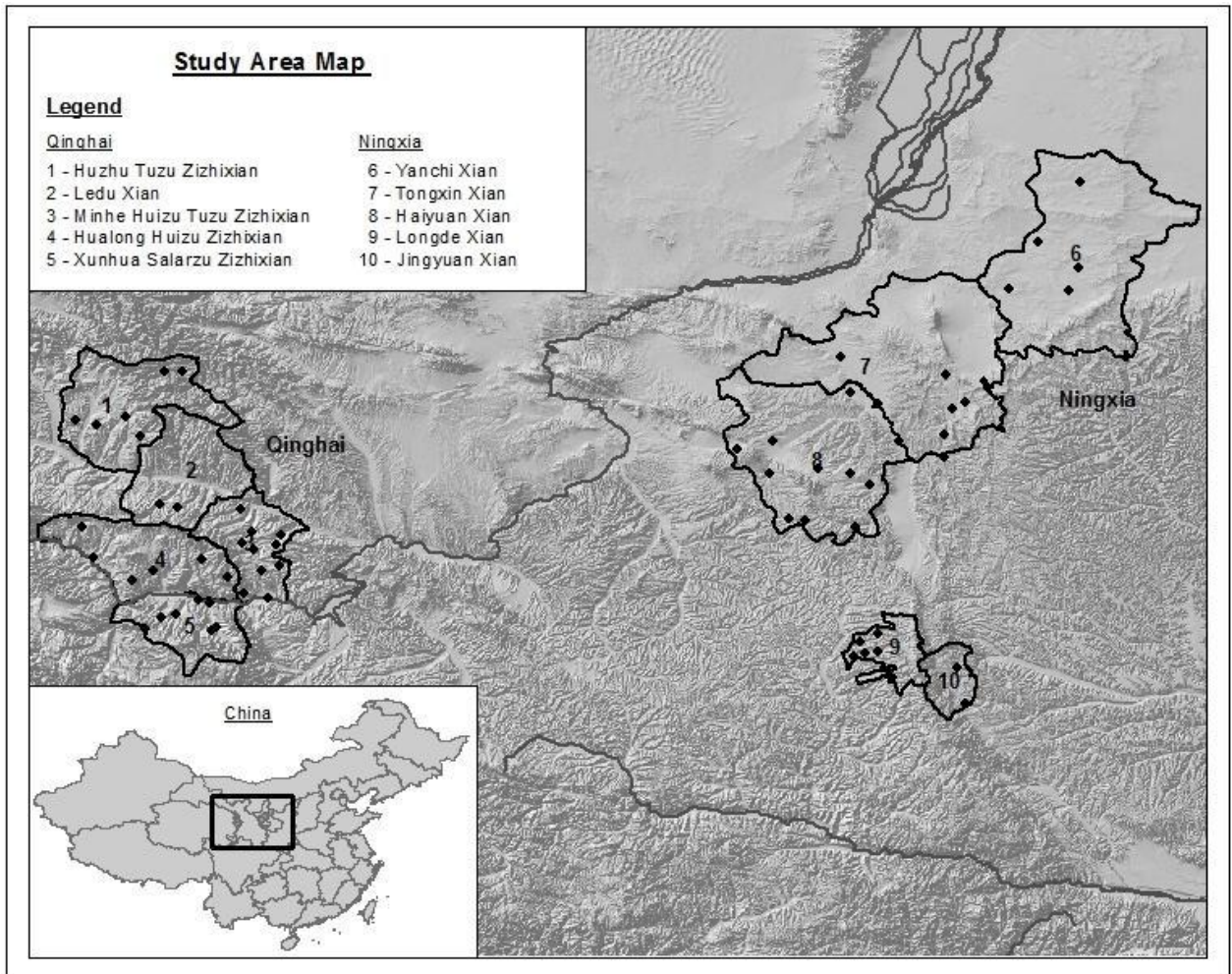


Table 1 Definitions of variables

Variables	Description
math score	Standard math tests, 29 questions for grade 4 and 20 questions for grade 5. Using percentile rank, e.g. if there were 4 students got full score during 3,424 students of 4th grade, all of these 4 students are 99.96%, which means their math score higher than other 99.96% students.
grade	Dummy; 0=4th grade; 1=5th grade
gender	Dummy; 0=female;1=male
ethnic	Several dummies for ethnicity. There were 5 major ethnicities in our sample, Han is 35.17%, Hui is 47.28%, Tibetan is 8.70%, Sala is 4.16%, Tu is 4.53% and others is 0.13%
edu_father	The educational years of father
edu_mother	The educational years of mother
refrigerator	Dummy; luxury household assets;0=do not have,1=have
video-camera	Dummy; luxury household assets;0=do not have,1=have
air conditioning	Dummy; luxury household assets;0=do not have,1=have
family_merbers	The number of family members
labor_forces	The number of labor forces
migration	0=both at home;1=either father or mother migrant;2=both migrant

Table 2 Descriptive statistics

Variables	migration=0		migration=1		migration=2		total	
	Mean	Std.Dev.	Mean	Std.Dev.	Mean	Std.Dev.	Mean	Std.Dev.
math score	<i>0.5195</i>	<i>0.2877</i>	<i>0.4808</i>	<i>0.2851</i>	<i>0.4461</i>	<i>0.2830</i>	<i>0.5001</i>	<i>0.2875</i>
grade	<i>0.5295</i>	<i>0.4992</i>	<i>0.5165</i>	<i>0.4998</i>	<i>0.5077</i>	<i>0.5003</i>	<i>0.5233</i>	<i>0.4995</i>
gender	<i>0.5161</i>	<i>0.4998</i>	<i>0.5071</i>	<i>0.5006</i>	<i>0.5077</i>	<i>0.5002</i>	<i>0.5125</i>	<i>0.4999</i>
ethnic_hui	<i>0.4355</i>	<i>0.4959</i>	<i>0.4147</i>	<i>0.4928</i>	<i>0.3924</i>	<i>0.4886</i>	<i>0.4248</i>	<i>0.4943</i>
ethnic_tibetan	<i>0.0281</i>	<i>0.1653</i>	<i>0.0509</i>	<i>0.2200</i>	<i>0.0506</i>	<i>0.2194</i>	<i>0.0374</i>	<i>0.1899</i>
ethnic_sala	<i>0.0633</i>	<i>0.2435</i>	<i>0.0943</i>	<i>0.2923</i>	<i>0.1577</i>	<i>0.3550</i>	<i>0.0813</i>	<i>0.2733</i>
ethnic_tu	<i>0.0461</i>	<i>0.2096</i>	<i>0.0487</i>	<i>0.2153</i>	<i>0.0394</i>	<i>0.1946</i>	<i>0.0462</i>	<i>0.2100</i>
ethnic_others	<i>0.0009</i>	<i>0.0307</i>	<i>0.0009</i>	<i>0.0299</i>	<i>0.0014</i>	<i>0.0375</i>	<i>0.0010</i>	<i>0.0312</i>
edu_father	<i>6.5104</i>	<i>3.7845</i>	<i>6.5979</i>	<i>3.7452</i>	<i>6.2869</i>	<i>4.1062</i>	<i>6.5155</i>	<i>3.8059</i>
edu_mother	<i>3.7896</i>	<i>3.9703</i>	<i>3.6278</i>	<i>4.0056</i>	<i>3.8622</i>	<i>4.0605</i>	<i>3.7463</i>	<i>3.9907</i>
refrigeratory	<i>0.1807</i>	<i>0.3848</i>	<i>0.1935</i>	<i>0.3951</i>	<i>0.2461</i>	<i>0.4311</i>	<i>0.1911</i>	<i>0.3932</i>
video-camera	<i>0.0341</i>	<i>0.1831</i>	<i>0.0554</i>	<i>0.2288</i>	<i>0.0774</i>	<i>0.2673</i>	<i>0.0454</i>	<i>0.2082</i>
air conditioning	<i>0.0326</i>	<i>0.1776</i>	<i>0.0509</i>	<i>0.2200</i>	<i>0.0567</i>	<i>0.2332</i>	<i>0.0408</i>	<i>0.1978</i>
family_merbers	<i>5.4367</i>	<i>1.4205</i>	<i>5.3923</i>	<i>1.4043</i>	<i>5.4613</i>	<i>1.5349</i>	<i>5.4253</i>	<i>1.4272</i>
labor_forces	<i>2.1556</i>	<i>0.8958</i>	<i>2.1877</i>	<i>0.9779</i>	<i>2.3502</i>	<i>1.1132</i>	<i>2.1849</i>	<i>0.9468</i>

Table 3: Estimation results

Independent variables	Dependent variable: percent of math score		
	(1) OLS	(2) Fixed-effect	(3) IV fixed-effects
Migration	-0.0235*** (-4.81)	-0.0173*** (-3.66)	-0.0155** (-2.70)
Student characteristics			
1. Grade (1=grade5; 0=grade4)	0.00129 (0.20)	0.00308 (0.50)	0.00313 (0.50)
2. Gender (1=male; 0=female)	0.0291*** (4.48)	0.0311*** (5.08)	0.0311*** (5.08)
Family characteristics			
3. refrigerator(1=have, 0=not)	-0.0152 (-1.76)	0.00366 (0.44)	0.00364 (0.43)
4. video- camera(1=have, 0=not)	-0.0712*** (-4.30)	-0.0459** (-2.91)	-0.0461** (-2.92)
5. air conditioning(1=have, 0=not)	-0.0754*** (-4.34)	-0.0626*** (-3.80)	-0.0627*** (-3.81)
6. Education of father (year)	0.00490*** (5.36)	0.00376*** (4.28)	0.00376*** (4.28)
7. Education of mother (year)	0.00509*** (5.68)	0.00199* (2.28)	0.00198* (2.27)
Ethnic dummies			
8. Ethnic_hui	-0.0391*** (-5.29)	0.00488 (0.49)	0.00494 (0.49)
9. Ethnic_tibetan	-0.183*** (-10.24)	-0.0278 (-0.88)	-0.0279 (-0.88)
10. Ethnic_sala	-0.219*** (-17.12)	-0.0264 (-1.31)	-0.0265 (-1.31)
11. Ethnic_tu	-0.0547*** (-3.43)	0.00730 (0.27)	0.00706 (0.26)
12. Ethnic_others	-0.309** (-2.97)	-0.261** (-2.66)	-0.261** (-2.66)
13. Constant	0.499*** (49.47)	0.464*** (45.92)	0.463*** (45.24)
14. Observations	7183	7183	7183
15. Fixed-effects test F(73, 7096)		14.44	14.45
16. R-squared	0.0886	0.0534	0.0535

Note: (1) The value of t-statistics are reported in parentheses

(2) *, **, *** indicate the significant levels at 10%, 5% and 1%, respectively.