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Economic Returns to Speaking ‘Standard Mandarin’ Among Migrants in China’s Urban Labour Market

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Abstract:

This paper uses data from the China Urban Labour Survey administered across 12 cities in 2005 to estimate the economic returns to speaking standard Mandarin among internal migrants in China’s urban labour market. The paper builds on studies that estimate the economic returns to international immigrants of being fluent in the major language of the destination country and studies that estimate the economic returns to proficiency in the national language amongst groups of people who speak a minority language. Importantly, we control for potential endogeneity bias in the estimates of the effect of language fluency on earnings. We find that for migrants as a whole, there are considerable economic returns to speaking standard Mandarin. We also find gender differences. While the coefficient on fluency in standard Mandarin is statistically significant and large for females, the coefficient on fluency is statistically insignificant for males. One possible explanation for this finding is that female migrant workers are engaged more in occupations which have greater contact with urban locals and hence the return to investment in language skills is higher. Another explanation is that female migrants are more likely to marry local men in the host city or have better verbal skills than men, meaning that they speak standard Mandarin with a less pronounced accent than men and, hence, suffer less labour market discrimination.

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1. Introduction

Language skills have been shown to represent an important form of human capital (Chiswick & Miller, 2003). Immigrants who have language proficiency in the major language of the host community are better placed to obtain information about job openings and earnings, and to communicate information about their skills to potential employers. Proficiency in the major language of the host community also increases the productivity of immigrants who are already in employment. Previous studies suggest that for several immigrant receiving countries, proficiency in the host country's language enhances earnings and this investment provides a high rate of return (see eg. Chiswick & Miller, 1995). Language, culture and values also intertwine (Maffi, 2001). In addition, beyond narrow labour market outcomes, language fluency assists with social integration of migrants into host communities.

China has 55 ethnic minorities, with Han Chinese being the majority (Dong & Blommaert, 2009). Many ethnic groups have their own languages and Chinese policies encourage the use and development of minority languages in the regions in which the ethnic minorities live (Zhou, 2003). 'Chinese' is an umbrella term for the language spoken by the majority Han Chinese, which comprise many varieties. Linguists often categorize them into seven major dialects: *Gan*, *Guan* (Mandarin), *Kejia* (Hakka), *Min* (including Hokkien and Taiwanese variants), *Wu* (including Shanghainese), *Xiang* and *Yue* (Cantonese) (Ramsey, 1987). A recent trend has been to recognise three more dialects: *Hui*, *Jin* and *Ping* (Dong & Blommaert, 2009). Within each language group, there are several regional dialects, which need not be intelligible in other parts of China. For example, the eight sub-groups of Mandarin Chinese are *Northeast*, *Beijing*, *Ji Lu*, *Jiao Liao*, *Zhongyuan*, *Lau Yin*, *Jianghuai* and *Southwest*. Dialects of Northeast Mandarin are *Changchun*, *Harbin*, *Qiqihar* and

Shenyang. Due to the mutual unintelligibility among China's languages and dialects there is a need for a common language that people from different regions can understand. The pronunciation of the Beijing dialect of Mandarin was standardized over a few hundred years, beginning with the Ming Dynasty (1368-1644). Standard Mandarin was called *Guanhua* (official language) in the first half of the twentieth century and has been called *Putonghua* (common speech) since 1955 (Ramsey, 1987; Dong & Blommaert, 2009).

China has an estimated 120 million internal migrant workers who have been the engine that has fuelled China's high economic growth. These migrants speak many varieties and regional dialects of Chinese and do not necessarily speak standard Mandarin (Dong, 2009; Dong & Blommaert, 2009). The labour market disadvantages of China's internal migrants are well known. Studies have documented discrimination in employment, earnings and access to social protection (see eg. Knight & Yueh, 2009; Liu, 2005; Nielsen & Smyth, 2008). However, the role of Mandarin language skills in labour market outcomes has not been examined. This study examines the economic returns to speaking standard Mandarin among China's internal migrants. Ordinary Least Squares (OLS) estimates of the coefficient on language fluency may be biased due to the presence of unobserved heterogeneity affecting both language fluency and earnings or errors in the measurement of linguistic ability (Chiswick & Miller, 1995; Dustmann and van Soest (2001). To address this issue we use Instrumental Variables (IV). We find that the OLS estimates considerably underestimate the economic returns to China's internal migrants who are fluent in standard Mandarin.

2. Language human capital and earnings

Language proficiency is determined by economic incentives, exposure to the language and the efficiency of acquisition (Chiswick & Miller, 1992, 1995, 1998). Economic incentives

include the expected economic benefit from fluency and the expected duration in the destination. Exposure to the language may occur before immigration through formal education or everyday use (standard Mandarin is spoken to differing degrees throughout China) or after immigration through formal education, marriage to someone from the host community or specific language training. Exposure will be lessened if, post-migration, migrants who speak a particular language or dialect, live in the same concentrated geographic area and speak together in their mother language or dialect. On the other hand, migrants who have children might receive more exposure to the language of the host community through informal learning processes. Children in the home, particularly those born in the destination, are more likely to be fluent in the dominant language because of the effects of age on language acquisition and their enrolment in school. The efficiency of acquisition depends on the age at which acquisition begins, which typically coincides with migration, and the individual's learning ability, which is related to the individual's level of education.

Proficiency in the major language of the host community can have direct and indirect positive effects on labour market outcomes (Chiswick & Miller, 2003). One direct benefit is more efficient job search. Migrants who are more proficient in the language of the host community can find a better labour match between their skills and the requirements of employers. In this respect, it is often a basic requirement for migrant workers to speak standard Mandarin when they apply for jobs. A second direct benefit is higher productivity on the job. Language proficiency can enhance communication with colleagues, supervisors, suppliers and customers, which, in turn, increases productivity. An indirect effect of greater language proficiency on earnings is that language proficiency can enhance other forms of human capital, such as pre-immigration schooling and labour market experience. If the migrant lacks the ability to communicate in the language of the host community, the value of pre-migration

schooling and labour market experience will be depreciated. However, as the migrant acquires language skills the productivity of pre-migration schooling and labour market experience will increase. A second indirect effect benefit of speaking standard Mandarin is reducing consumer and employer discrimination against migrant workers. In China's urban labour market, migrant workers often face discrimination from employers and local urbanites (Nielsen *et al.*, 2006). Speaking standard Mandarin makes migrants more like urban residents. Migrants who can speak standard Mandarin usually receive fairer treatment.

3. Existing literature

This paper has its antecedents in two strands of literature. The first strand of literature looks at the economic return to speaking the host country's language for international migrants. A number of studies exist which examine the relationship between language skills and earnings of international migrants in their new country of residence. Most studies have focused on proficiency to speak English in a country in which English is the major language spoken. There are studies for Australia (Chiswick & Miller, 1995); Canada (Chiswick & Miller 1988, 1992 2003); the United Kingdom (Shields & Wheatley Price, 2002); and the United States (Bleakley & Chin, 2004; Chiswick & Miller 1992, 1999, 2002, 2009). Some studies have focused on the ability of international immigrants to speak languages other than English in non-English speaking countries such as Hebrew in Israel (Chiswick 1998); German in Germany (Dustmann 1994; Dustmann & van Soest, 2001) or Norwegian in Norway (Hayfron, 2001). Limited studies have estimated the returns to English in countries in which English is not the major language spoken. Lang and Siniver (2006) examine returns to English speaking proficiency in Israel, while Grin (2001) examines returns to speaking English in Switzerland. There are, however, no studies that examine the economic returns of language proficiency in the national language among internal migrants within a country.

The second strand of literature on which this paper builds is the returns to proficiency in the national language amongst groups of people who speak a minority language. Chiswick *et al.* (2000) examine the economic returns to Spanish and indigenous language use in Bolivia. Their results suggest that monolingual Spanish speakers earn about 25% more than those who speak both Spanish and an indigenous language, while women who speak only an indigenous language earn about 25% less than bilingual speakers. Chiswick *et al.* (2000) conclude that bilingual speakers may be penalized in the labour market because of a poorer proficiency in Spanish. Chiswick and Miller (2007) examine the economic returns to proficiency in English among the native born in the United States and show that those who are bilingual earn less than monolingual English speakers. Fry and Lindsay (2004) also show there are no economic gains to bilingualism among the native born in the United States. Possible explanations for these findings are that bilingual speakers have lower English proficiency than monolingual English speakers; bilingual speakers may speak English with an accent and hence face discrimination or bilingual speakers might be concentrated in ethnic enclaves and, as such, have fewer labour market opportunities (see Chiswick and Miller, 2007).

Another related study was conducted by Godoy *et al* (2007), who estimate returns to proficiency in Spanish (the national language) amongst the Tsimane', a remote society living in the Bolivian Amazon with their own local language. Out-migration amongst the Tsimane' is unusual. As Godoy *et al* (2007) noted it is not clear *a priori* that there would be economic returns to speaking Spanish for remote autarkic societies such as the Tsimane' because contact with outsiders is sporadic and daily activities among the Tsimane' take place in the local language. Nevertheless, Godoy *et al* (2007) found that fluent speakers of Spanish and the local language earned 36.9-46.9% more than monolingual speakers of the local language. These authors use OLS, so one could regard these figures as a lower bound on the true

estimate. The reason for this result was that there was a positive correlation between bilingualism and access to credit, use of modern production technologies and labour productivity. One would expect that the private market benefits of investing in national language skills would be at least as high, or higher, for individuals whose first language may be a minority language or dialect, but who have migrated to large towns or cities in search for work because contact with outsiders would be strong and continuous.

4. Data

The data we use in this study comes from the China Urban Labour Survey, which was administered by the Institute of Population and Labour Economics at the Chinese Academy of Social Sciences in conjunction with provincial and municipal offices of the National Bureau of Statistics of China. The survey was administered in five provincial capital cities (Shanghai, Wuhan, Shenyang, Fuzhou, Xian) and seven municipal cities (Wuxi, Yichang, Benxi, Zhuhai, Shenzhen, Baoji and Daqing) in May 2005. Using a proportional population sampling approach, 500 migrant households were investigated in each of the five provincial cities and 400 migrant households were investigated in each of the seven municipal cities. In each household, all family members who were aged 16 or above and who were in paid employment were interviewed individually. In total about 5400 migrant workers participated in the survey; of which, approximately 3100 were males and 2300 were females. This number falls to approximately 4200 individuals, consisting of 2400 males and 1800 females, for which we have data on the IVs employed in the study in addition to data on proficiency in Mandarin, hourly wages and other standard labour market control variables. The question on proficiency in Mandarin asked migrants: How well can you speak standard Mandarin? The three possible responses were that the respondent (a) cannot speak Mandarin; (b) can speak Mandarin, but not standard Mandarin; or (c) can speak standard Mandarin.

Insert Tables 1 & 2

Table 1 provides descriptive statistics for the full sample as well as for males and females. In total, 56.87% of participants were male, 87.84% were married and 88.02% reported being in good health. For the full sample, the hourly wage rate was 4.28 RMB; 48.42% spoke standard Mandarin, 47.13% spoke non-standard Mandarin and 4.45% could not speak Mandarin at all. The proportion of participants who can speak standard Mandarin is similar to the official figure that 53% of Chinese people could communicate in standard Mandarin in 2004 (China Daily, 2004). The hourly wage rate was higher for males than females, although proficiency in Mandarin was similar across gender. Males had slightly higher years of schooling and post-school experience than females. The majority of the sample worked as service workers in wholesale/retail/catering or social services, in which one might expect contact with urban locals to be more frequent and hence proficiency in Mandarin more important than working in construction or manufacturing. There are gender differences, however, in the occupation of participants with a higher proportion of females than males working in wholesale/retail/catering, while a higher proportion of males worked in construction. Table 2 shows the hourly wage rate of participants according to their degree of fluency in Mandarin. For the sample as a whole and for males and females considered separately, there is a positive relationship between the degree of fluency in Mandarin and the hourly wage rate.

5. Empirical Specification

We employ a Mincer (1974) earnings function modified for the study of migrant earnings (Chiswick, 1978) and augmented with a variable for language proficiency. Following existing studies we collapse the three levels of response on language fluency into a dummy variable set equal to 1 if the individual can speak standard Mandarin; zero otherwise (see eg.

Chiswick & Miller, 1995). The log of hourly wage earnings (measured in RMB) is regressed on years of schooling, post-school experience, post-school experience squared, whether the individual can speak standard Mandarin and a series of control variables. The specific control variables that we employ are marital status, self-reported health, gender (for the sample as a whole) and dummy variables for the individual's occupation, the sector in which the individual works, ownership form of the firm for which the individual works and the city in which the individual lives. Following Chiswick (1978) we also include years of migration.

Based on the discussion above, we expect a positive relationship between fluency in standard Mandarin and wages. Turning to the other variables, based on human capital theory, wages are determined by investment in human capital. Schooling and on-the-job training are major types of investment. Thus, we expect a positive relationship between years of schooling and wages. Post-school experience and time since migration are proxies for job-training investment before and after migration. We expect the wage-experience profile to follow a parabolic shape in experience. Wages will initially increase, reach their peak when human capital is at a maximum and eventually fall as human capital depreciation dominates accumulation. We expect that time since migration will result in higher wages

Of the control variables we expect that individuals with better self-reported health will have higher productivity and earn higher wages. The expected sign on marital status is *ex ante* unclear. Individuals who are married might, in a time allocation sense, have less time available for work tasks because of family commitments. However, marriage can also generate efficiencies through specialisation and the division of labour where tasks are divided between spouses, freeing up time (Baker & Jacobsen, 2007). In the results for the full sample,

we expect males to earn more than females, given widespread evidence of gender discrimination in earnings in the Chinese urban labour market (Zhang *et al.*, 2007).

As shown by Chiswick and Miller (1992, 1995, 2003, 2009) and Chiswick (1998), among others, OLS estimates of the coefficient on language fluency may be biased due to the presence of unobserved heterogeneity affecting both language fluency and earnings. Dustmann and van Soest (2001) show that errors in the measurement of linguistic ability may also generate biased OLS estimates. Similarly, OLS estimates of schooling may be biased downwards due to measurement error, unobserved ability, family background or because individuals with high discount rates choose low levels of schooling; that is schooling with higher marginal rates of return (Card, 1999; Chen & Hamori, 2009). We treat fluency in standard Mandarin and years of schooling as endogenous variables and adopt an IV approach.

We use mother's years of schooling as an IV for years of schooling. Parental education is commonly used to control for unobserved ability (Card, 1995; Ashenfelter & Zimmerman, 1997). There is a large literature which suggests that parental education is associated with more years of schooling and that, in most cases, the influence of mother's education is greater than father's education (Haveman & Wolfe, 1995). We use number of children living with the individual in the host city and having at least one child studying in primary school in the host city as IVs for fluency in Mandarin, assuming having children at home and at primary school in the host city is correlated with parental language skills, but not with wage rates.

There are competing channels through which children may affect the language outcomes of their parents (Chiswick & Miller, 1999). First, there is a child-parent transmission mechanism through which parents learn from their children. Children learn languages faster than older

people. Children are more efficient at learning languages and can be expected to have more exposure to standard Mandarin through the school system and interaction with other children. Migrant children learn standard Mandarin because standard Mandarin is the language of instruction in Chinese schools (Dong & Blommaert, 2009). More than 60% of migrant children attend urban public primary schools and learn standard Mandarin. There are often strong peer effects and social norms in the classroom in urban public primary schools encouraging migrant children to invest in speaking standard Mandarin.⁴ Some migrant children attend special migrant schools. In special migrant schools most children are taught in standard Mandarin; however, a relatively small number may be taught in regional dialects.

Second, parents might teach the origin language to their children if return migration is a strong possibility or if the parents want to maintain links to their local culture. China's migrant workers are known as the 'floating population', meaning that circular migration has been common (Solinger, 1999). Some studies have concluded that migrant workers do not desire to settle in the cities long-term and, instead, prefer to return to their homes in the country. For example, Zhu's (2003, 2007) surveys in Fujian conducted between 2000 and 2002 found that only a small proportion of off-farm migrants would move their whole family to the city, even if they were freely given an urban household registration. There is, however, some more recent evidence that migrant workers are remaining for longer periods in the cities

⁴ For example, consider the following story told by a migrant child from Sichuan province in western China who enrolled in a primary school in Ningbo, which is a major commercial city in Zhejiang province in China's eastern coastal region and a major destination for migrant workers: "Last summer I arrived in this beautiful city with my parents. I was curious and excited by everything I saw in the streets – skyscrapers, broad streets and flashing colourful lights – but I felt all of this had nothing to do with me because I was an outsider, a child of migrant workers. After many twists and turns, my dad found a local school for me. I liked the school and my teacher, Miss Zhang, a young lady who spoke perfect Putonghua [standard Mandarin]. She asked me to introduce myself in front of the class, but I could not – I could not speak Putonghua, how could I introduce myself? Miss Zhang was very kind and asked me to do so in my own dialect. I said 'good morning, I am a child from Sichuan' (with a marked Sichuan dialect), but was interrupted with loud laughter from the class. I was so embarrassed that I wanted to run out of the class. Miss Zhang told the class that I had spoken in the Sichuan dialect. Following the class, Miss Zhang told me I should learn Putonghua, otherwise I would encounter many difficulties in my life. Having her kind words in mind I am determined to study hard so that one day I can speak good Putonghua" (Ningbo Daily, 2006, quoted in Dong & Blommaert, 2009).

and do not intend to return to the countryside from which they came (Jacka, 2005). Participants in the 12 city survey, used in the present study, were asked about where they intended to live in the next five years. The results indicated that only 19% of migrant workers wanted to return to their hometown in the next five years, 73% of migrant workers planned to remain in the same city and 8% of participants intended to go to other cities. This phenomenon can be expected to increase with further relaxation of the strict demarcation between migrants and urban locals in the form of the household registration system.

6. Results

The OLS estimates for the full sample are presented in the first column of Table 3. The OLS results suggest that for the sample as a whole, being fluent in standard Mandarin is associated with wages being 4.8% higher. This result is similar, although slightly lower, than findings from previous studies using OLS (see eg. Chiswick, 1998; Chiswick & Miller, 1995; Shields & Wheatley Price, 2002). The OLS results indicate that an additional year of schooling is associated with wages being 2.7% higher. This figure is slightly higher than previous studies that have estimated the returns to education for migrant workers in China employing OLS with data from the late 1990s (see eg. Maurer-Fazio & Dinh, 2004; Zeng, 2004). As discussed above, the OLS estimates of the coefficients on language fluency and years of schooling may be biased. Hence, in Table 3 we also report IV estimates.

 Insert Table 3

The validity of the IVs is considered at the bottom of Table 3. The first component of IV validity is relevance. The IVs satisfy Bound *et al.s* (1995) two suggested tests for relevance. One, results from an F-test indicates that both instruments lead to a significant improvement in the first stage models determining language fluency and years of schooling at the 1 per

cent level. Two, there is an increase in the adjusted R^2 in the first stage models when the instruments are included. A third test for relevance suggested by Stock and his colleagues (Staiger & Stock, 1997; Stock & Yogo, 2005) is the magnitude of the first stage F statistic when the IVs are included. The IVs satisfy the Stock and Yogo (2005, table 1) test at the 1 per cent level. The second component of IV validity is that the instruments are exogenous. Since our IV model is over-identified with the number of exogenous instruments exceeding the number of endogenous variables, we compute the Sargan chi-square statistic to test for instrument exogeneity. The results, reported at the bottom of Table 3, suggest that the instruments are exogenous. Therefore, overall, we conclude that our instruments satisfy both the relevance and exogeneity conditions and, as such, are valid instruments.

Turning to the IV estimates reported in Table 3, each additional year of schooling results in wages being 8% higher. This is much higher than the OLS estimates, but still lower than recent IV estimates for the urban labour force as a whole. Chen and Hamori (2009) used spouse's education as an IV for schooling and found that in 2004 and 2006 IV estimates of the returns to education for the labour force in China as a whole were 12-13%. This result could reflect well-known labour market discrimination against migrant workers where migrant workers are disproportionately consigned to lower paid jobs than what their human capital would suggest. For example, in a Shanghai-based sample of urban residents and migrants, Meng and Zhang (2000) found that 22% of urban residents were in occupations above that warranted by their human capital characteristics, while 6 per cent of migrants were in occupations below that suggested by their human capital characteristics

The IV estimates for language fluency suggest that fluency in standard Mandarin is associated with wages being 42.1% higher. Hence, the OLS estimate appears to be downward

biased. While the IV estimate seems high, it is within the range of IV estimates of the return to language fluency for migrants in previous studies. For example, Chiswick and Miller (1992, 1995) found that the economic returns to fluency in English were 41.3% for migrants in Canada and 57.1% for migrants in the United States using the IV approach. Chiswick (1998) found that the economic returns to fluency in Hebrew were 35.1% for migrants in Israel using the IV approach. The results are also consistent with Godoy *et al's* (2007) estimates of the economic returns to Spanish-Tsimane' bilingualism for the Tsimane' in Amazonian Bolivia (36.9-46.9%). As predicted by human capital theory, the wage-experience profile follows a parabolic shape and years since migration has a positive effect on earnings. Each additional year since migration is associated with a 0.8% increase in wages. Consistent with previous findings, males earn 14.8% more than females (Zhang *et al.*, 2007), while those who report being in good health earn 6.2% more than those who do not report being in good health. Compared with individuals working in the manufacturing sector, those working in construction (21.5%) and communication/transportation (11.9%) earn more, while those working in wholesale/retail/catering (-8.5%) and social services (-15.4%) earn less. Finally, compared with professionals and technicians, producer/transport/equipment operators (-23.7%) and service workers (-30%) earn considerably less.

Insert Tables 4 & 5

Tables 4 and 5 present the OLS and IV estimates for females and males separately. The tests for IV validity, reported at the bottom of Tables 4 and 5, indicate that the IVs are valid instruments. For females, the IV estimates of the economic returns to fluency in standard Mandarin are 50.8%, while the coefficient on the language fluency variable for males is statistically insignificant. The results for the other variables are generally similar to those for

the full sample reported in Table 3. While most previous studies have found a positive effect of language skills on the earnings of male migrants, Kossoudji (1988) found that English language ability had no effect on the earnings of male immigrants in the United States, while Hayfron (2001) found that Norwegian language ability had no effect on the earnings of male immigrants from developing countries in Norway. Hayfron (2001) argued that the reason for this finding was that male immigrants from developing countries are usually found in low-skills and least paid jobs in the Norwegian labour market, in which returns to fluency in Norwegian are low. This is also true for Chinese migrant workers. A survey administered by the All-China Federation of Trade Unions in 2006 found that 65% of migrants were working in so-called “Three D jobs” (dirty, dangerous and demeaning) (Tao, 2006).

One explanation for the different results across genders might be that females work more in service sector positions in which they have more contact with urban locals and thus the returns to language skills are higher. Floating migrant women who work as maids have more contact with urban locals (Jacka, 2005). Zai and Chen (2004) document a “female permanent migrant advantage” in Shenzhen, in which over half of permanent migrant women are employed in professional occupations, compared with 20% of permanent migrant men.

A second explanation for the gender differences is increasing evidence that women are migrating with the intention of marrying local men in the host city (Fan, 2000). Marriage between migrant women and local men has increased in prevalence in cities such as Shanghai since 1990. For example, according to the 1997 migrant census in Shanghai there were almost 100,000 migrants who had married Shanghai residents. Over 80% of the migrants who married urban locals in Shanghai were women (Shanghai Star, 2000). If migrant women are more likely to marry local men from the host city, it follows that migrant women are

probably also less likely to speak standard Mandarin with an accent or speech pattern related to their regional dialect or other language, compared with migrant men. Hence, migrant women may be less likely to incur labour market discrimination from speaking with a pronounced accent (Chiswick & Miller, 2007). Chiswick and Miller (2007) argued that one reason for low returns to those whose English was their second language in the United States was that they tended to have fewer labour market opportunities because they were concentrated in urban enclaves reflecting their language deficiencies. If migrant women are more likely to marry local men in the host city, it is likely that they will be less likely to live and work in an ethnic concentration area compared with male migrants.

A third explanation is that in the linguistics literature, it is recognized that women are better at languages than men (Kenneally, 2007). This is consistent with anecdotal evidence that migrant women are more likely to speak standard Mandarin better than migrant men. Similarly, while the statistical tests indicate the IVs are valid for males, Chiswick and Miller (1994) generally argue that the effects of children on language skills will be stronger for women than men. If, as a result of genetic disposition and having children present, women speak standard Mandarin with a less pronounced accent than men and are better able to integrate into the host community, this will reduce labour market discrimination.

7. Conclusion

This paper uses data from the China Urban Labour Survey administered in five provincial capital cities and seven municipal cities in May 2005 to examine the economic returns to fluency in standard Mandarin for China's migrant workers. The study shows that for migrant workers as a whole, fluency in standard Mandarin is a key determinant of earnings. This is true, despite the fact that floating migrants, who represent the bulk of migrant workers in

China, are concentrated in low-skilled jobs. In this sense, our results suggest that attaining fluency in standard Mandarin may be one avenue out of the low-paid jobs occupied by many migrant workers in Chinese cities. Moreover, policies that promote investment in official language skills in standard Mandarin can be expected to increase the well-being of migrant workers. A proviso to this observation is that linguistic assimilation has typically been associated with broader cultural assimilation and the irrevocable loss of competence in the mother tongue of migrants' descendants (Godoy *et al.*, 2007). There is already much concern among linguists about the loss of identity of migrant workers in China as they invest in speaking standard Mandarin in order to better fit in with locals in their host cities (see Dong 2009; Dong & Blommaert, 2009). We also observe gender differences. While the coefficient on fluency in standard Mandarin is statistically significant and large for females, the coefficient on fluency is statistically insignificant for males. One possible explanation for this finding is that female migrant workers are engaged more in occupations which have greater contact with urban locals and hence the return to investment in language skills is higher. Another explanation is that female migrants are more likely to marry local men in the host city or have better verbal skills than men, meaning that they speak standard Mandarin with a less pronounced accent than men and, hence, suffer less labour market discrimination.

There are several avenues for future research on the economic returns to language skills in China. One direction for future research could be to examine the economic returns to speaking standard Mandarin among ethnic groups with their own languages, such as Mongolians, Tibetans and Ughers in Mongolia, Tibet and Xinjiang. A second direction for future research could be to examine the economic returns to speaking English in China. Many people are learning English in China and, according to one estimate, within two decades there will be more people speaking English in China than there are native speakers of English in

the rest of the world (Heinrich, 2007). As China continues to integrate into the global economy in which English is increasingly the *lingua franca*, one would expect the economic returns from investing in English language skills in China to be substantial.

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Table 1 Descriptive Statistics

	All	Male	Female
Hourly wage (RMB)	4.28	4.79	3.60
Mandarin Fluency (%)			
Cannot Speak	4.45	4.29	4.65
Not Standard	47.13	46.86	47.50
Standard	48.42	48.85	47.85
Years of Schooling	8.33	8.67	7.88
Years of Post School Experience	19.80	20.22	19.24
Male (%)	56.87	-	-
Married (%)	87.84	87.57	88.19
Good Health (%)	88.02	88.88	86.89
Years of Migration	8.85	9.54	7.93
Occupation (%)			
Professional/Technician	6.59	6.40	6.84
Producer/Transporter/ Equipment Operator	20.72	25.20	14.89
Service Worker	72.69	68.40	78.27
Ownership Form of Employer (%)			
Government Agency	3.38	3.46	3.29
State-Owned Enterprise	5.17	5.51	4.71
Private Enterprise	13.73	14.28	13.03
Small Business	73.05	72.15	74.22
Others	4.67	4.61	4.75
Industry (%)			
Manufacturing Industry	8.32	7.91	8.89
Construction Industry	5.51	7.76	2.56
Transportation/Communication	3.30	5.25	0.74
Wholesale/Retail/Catering	44.79	41.16	49.53
Social Service	24.41	22.99	26.27
Others	13.67	14.93	12.01

City (%)			
Shanghai	10.08	9.78	10.48
Wuhan	11.36	10.45	12.55
Shenyang	8.55	9.29	7.59
Fuzhou	11.66	11.40	11.99
Xian	11.38	11.02	11.86
Daqing	5.45	5.89	4.87
Wuxi	8.00	8.18	7.76
Yingchang	6.51	6.38	6.68
Benxi	7.83	8.73	6.64
Zhuhai	7.63	7.33	8.02
Baoji	5.69	5.43	6.04
Shenzhen	5.86	6.12	5.52
Number of Observations	5377	3058	2319

Table 2 Hourly Wages and Mandarin Fluency (RMB)

	All	Male	Female
Cannot speak standard Mandarin	3.74	4.21	3.13
Cannot Speak Mandarin at all	2.80	2.88	2.70
Can speak non-standard Mandarin	3.83	4.34	3.18
Can speak standard Mandarin	4.84	5.40	4.10
Total	4.28	4.79	3.60

Table 3: Determinants of Hourly wages For Full Sample: OLS and IV Estimates

	OLS		IV	
	Coefficient	Standard Error	Coefficient	Standard Error
Standard Mandarin	0.0477**	0.0207	0.4214**	0.2140
Years of Schooling	0.0268***	0.0041	0.0800***	0.0305
Post School Experience	-0.0042	0.0039	0.0150**	0.0068
Experience Squared	-0.0001	0.0001	-0.0002**	0.0001
Years of Migration	0.0116***	0.0017	0.0084***	0.0023
Male	0.1869***	0.0191	0.1484***	0.0339
Married	0.0050	0.0369	-0.0323	0.0519
Good Health	0.0970***	0.0289	0.0624*	0.0379
Occupation (Professional/Technician=1)				
Producer/Transporter/ Operators	-0.3063***	0.0430	-0.2373***	0.0505
Service Worker	-0.3787***	0.0375	-0.2995***	0.0482
Ownership Form of Employer (Government Agency=1)				
State-Owned Enterprise	0.3055***	0.0673	0.3368***	0.0772
Private Enterprise	0.3354***	0.0604	0.3779***	0.0695
Small Business	0.1961***	0.0548	0.2506***	0.0637
Others	0.3094***	0.0704	0.4486***	0.0867
Industry (Manufacturing Industry=1)				
Construction Industry	0.1599***	0.0540	0.2153***	0.0634
Transportation/Communication	0.1197**	0.0615	0.1185*	0.0689
Wholesale/Retail/Catering	-0.1287***	0.0417	-0.0850*	0.0476
Social Service	-0.1926***	0.0415	-0.1537***	0.0463
Others	-0.0729*	0.0443	-0.0085	0.0546
City	Controlled	Controlled	Controlled	Controlled
Constant	1.2927***	0.1034	0.2466	0.3250
Number of Observations	4644		4194	
F($\beta=0$)	68.80***		55.36***	
Adj R-squared	0.3046		0.2301	
Instrument Validity for IV Estimates				
Instrument Relevance				
Standard Mandarin				

F-test of including instruments (P-val)		0.0002
First Stage Incremental Effect on Adj.R ²		0.0109
First Stage F-statistics (Stock & Yogo test)		42.45***
<hr/>		
Years of schooling		
F-test of including instrument (P-val)	-	0.0001
First Stage Incremental Effect on Adj.R ²		0.0334
First Stage F-statistics (Stock & Yogo test)		95.80***
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Instrument Exogeneity		
Sargan test (P-val)	-	0.1441

Notes: ***(**)(*) denotes statistical significance at 1%(5%)(10%). Years of schooling is instrumented with mother's years of schooling. Standard Mandarin is instrumented with number of children living in the host city and having at least one primary school child in the host city.

Table 4: Determinants of Hourly Wages for Females: OLS and IV Estimates

	OLS		IV	
	Coefficient	Standard Error	Coefficient	Standard Error
Standard Mandarin	0.0548**	0.0314	0.5080**	0.2821
Years of Schooling	0.0287***	0.0061	0.0673*	0.0365
Post School Experience	0.0039	0.0062	0.0256**	0.0103
Experience Squared	-0.0002	0.0001	-0.0004**	0.0002
Years of Migration	0.0110***	0.0029	0.0060*	0.0040
Married	-0.1735***	0.0576	-0.1739**	0.0707
Good Health	0.0814*	0.0422	0.0373	0.0576
Occupation (Professional/Technician=1)				
Producer/Transporter/ Operators	-0.2676***	0.0683	-0.1881**	0.0779
Service Worker	-0.3277***	0.0559	-0.2717***	0.0667
Ownership Form of Employer (Government Agency=1)				
State-Owned Enterprise	0.2683***	0.1018	0.2621**	0.1169
Private Enterprise	0.2523***	0.0906	0.3164***	0.1052
Small Business	0.1705**	0.0815	0.2273**	0.0954
Others	0.3082***	0.1046	0.4778***	0.1356
Industry (Manufacturing Industry=1)				
Construction Industry	0.2625**	0.1053	0.3737***	0.1291
Transportation/Communication	-0.1474	0.1736	-0.0940	0.1875
Wholesale/Retail/Catering	-0.0879	0.0652	-0.0506	0.0745
Social Service	-0.1427**	0.0647	-0.1083	0.0728
Others	-0.1083	0.0703	-0.0347	0.0806
City	Controlled	Controlled	Controlled	Controlled
Constant	1.2822***	0.1557	0.3093	0.4315
Number of Observations	2032		0.1826	
F($\beta=0$)	25.20		20.22	
Adj R-squared	0.2568		0.1659	
Instrument Validity for IV Estimates				

Instrument Relevance	
Standard Mandarin	
F-test of including instruments (P-val)	0.0000
First Stage Incremental Effect on Adj.R ²	0.0016
First Stage F-statistic (Stock & Yogo test)	20.56***
Years of schooling	
F-test of including instrument (P-val)	0.0000
First Stage Incremental Effect on Adj.R ²	0.0018
First Stage F-statistic (Stock & Yogo test)	54.87*
Instrument Exogeneity	
Sargan test (P-val)	0.2395

Notes: ***(**)(*) denotes statistical significance at 1%(5%)(10%). Years of schooling is instrumented with mother's years of schooling. Standard Mandarin is instrumented with number of children living in the host city and having at least one primary school child in the host city.

Table 5: Determinants of Hourly Wages for Males: OLS and IV Estimates

	OLS		IV	
	Coefficient	Standard Error	Coefficient	Standard Error
Standard Mandarin	0.0411	0.0277	0.3417	0.2984
Years of Schooling	0.0249***	0.0056	0.0963**	0.0480
Post School Experience	-0.0109**	0.0051	0.0060	0.0087
Experience Squared	0.0000	0.0001	-0.0001	0.0001
Years of Migration	0.0123***	0.0022	0.0103***	0.0028
Married	0.1291***	0.0484	0.0572	0.0750
Good Health	0.1120***	0.0396	0.0795*	0.0501
Occupation (Professional/Technician=1)				
Producer/Transporter/ Operators				
Equipment				
Service Worker	-0.3431***	0.0564	-0.2641***	0.0711
	-0.4194***	0.0507	-0.3159***	0.0719
Ownership Form of Employer				
(Government Agency=1)				
State-Owned Enterprise	0.3309***	0.0900	0.3937***	0.1045
Private Enterprise	0.3861***	0.0811	0.4113***	0.0957
Small Business	0.2185***	0.0741	0.2703***	0.0887
Others	0.3225***	0.0954	0.4324***	0.1126
Industry (Manufacturing Industry=1)				
Construction Industry	0.1045	0.0660	0.1660**	0.0788
Transportation/Communication	0.1182*	0.0708	0.1371*	0.0801
Wholesale/Retail/Catering	-0.1682***	0.0551	-0.1037*	0.0642
Social Service	-0.2415***	0.0550	-0.1866***	0.0619
Others	-0.0669	0.0579	-0.0059	0.0788
City	Controlled	Controlled	Controlled	Controlled
Constant	1.5161***	0.1409	0.3002	0.5253

Number of Observations	2612	2368
F($\beta=0$)	40.42***	32.20***
Adj R-squared	0.3045	0.2172
Instrument Validity for IV Estimates		
Instrument Relevance		
Standard Mandarin		
F-test of including instruments (P-val)		0.0000
First Stage Incremental Effect on Adj.R ²		0.0010
First Stage F-statistic (Stock & Yogo test)		24.45***
Years of schooling		
F-test of including instrument (P-val)		0.0000
First Stage Incremental Effect on Adj.R ²		0.0009
First Stage F-statistic (Stock & Yogo test)		95.80***
Instrument Exogeneity		
Sargan test (P-val)		0.1751

Notes: ***(**)(*) denotes statistical significance at 1%(5%)(10%). Years of schooling is instrumented with mother's years of schooling. Standard Mandarin is instrumented with number of children living in the host city and having at least one primary school child in the host city.