Market Transition, Industrialization, and Social Mobility Trends in Post-Revolution China

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Abstract

Stratification scholars have long speculated about the influences of political institutions and economic development on intergenerational social mobility. China provides a unique opportunity to evaluate these speculations, as it has experienced rapid industrial expansion as well as the demise of socialism since its economic reform that began in 1978. Analyzing intergenerational data from six comparable, nationally representative surveys between 1996 and 2012, we uncover two countervailing social mobility trends in post-revolution China. On the one hand, there is evidence of a decline in social fluidity following China's transition from state socialism to a market economy, as the link between origin and destination in vertical social status has significantly strengthened. On the other hand, horizontal mobility between the agricultural and nonagricultural sectors has increased sharply during the country's rapid industrialization. Despite its recent decline, social fluidity in China is still much higher than that in mature capitalist societies. Moreover, cross-national comparisons reveal that a faster pace of industrialization is associated with greater horizontal mobility between the farming and nonfarming classes. Finally, mobility in China is characterized by disproportionate flows between the farming and the managerial/professional classes and between farming and self-employment—patterns that are unique products of the Chinese household registration (*hukou*) system.

INTRODUCTION

Sociologists have long sought to understand how political institutions shape social stratification. In particular, the transition from state socialism to market capitalism in China and the former Eastern Bloc countries has spurred a vast volume of research on the impacts of institutional changes on economic inequality. Prominent in this literature is Nee's (1989, 1991, 1996) market transition theory, which contends that the post-socialist transition is a process in which markets replace politics as the basic principle of resource allocation and thus predicts that human capital gradually replaces political loyalty as the main determinant of an individual's socioeconomic success. Empirical assessments of market transition theory abound. The dominant line of inquiry has revolved around the micro-level question of how economic payoffs of human capital relative to political capital have evolved over time (Bian and Logan 1996; Song and Xie 2014; Zhou 2000), differed by economic sector (Peng 1992; Rona-tas 1994; Wu and Xie 2003), or varied across regions at different stages of economic reform (Gerber 2002; Walder 2002; Xie and Hannum 1996). More recent research has also explored the implications of micro-level social determinants of income for macro-level inequality (Bandelj and Mahutga 2010; Hauser and Xie 2005; Zhou 2014), which has been growing rapidly in transitional economies (Heyns 2005; Xie and Zhou 2014).

So far, the market transition theory and its empirical assessments are almost exclusively concerned with inequalities of socioeconomic outcomes, such as income (e.g., Bian and Logan 1996), housing (e.g., Song and Xie 2014), and managerial positions (e.g., Walder, Li, and Treiman 2000), i.e., questions of intragenerational inequality. The consequences of market transition for inequality of opportunity—indicated by intergenerational social mobility—remain underexplored. In a pioneering study, Gerber and Hout (2004) report that the net association between class origins and class destinations strengthened following the collapse of communism in Russia in the 1990s, suggesting that state socialism might have been conducive to equality of opportunity in the former Soviet Union. Gerber and Hout's conclusion prompts the question of whether social fluidity declines in general with a society transitioning from state socialism to a market economy. To answer this question, we need to understand trends in intergenerational mobility in other societies that have undergone similar transitions. A prime candidate for addressing this question is China.

The question of trends in intergenerational mobility has attracted sociological attention for a much longer period than the market transition debate. In particular, a large literature in comparative stratification has been devoted to understanding the effects of economic development on intergenerational social mobility (Ganzeboom, Treiman, and Ultee 1991). Two prominent hypotheses have emerged in this literature. First, the "thesis of industrialism" predicts that the more industrialized a society is, the higher the degree of social fluidity (Treiman 1970: 221). Second, in what is known as the FJH hypothesis, Featherman, Jones, and Hauser (1975) argue that while there may be an initial effect of economic development, improvement in social mobility is limited when a society becomes sufficiently industrialized. While the bulk of empirical work in the past has been consistent with the FJH hypothesis (Erikson and Goldthorpe 1992; Grusky and Hauser 1984), more sensitive tests of trends in the form of the "Unidiff" model (Xie 1992) suggest that social fluidity has increased in many industrialized nations over the 20th century, albeit slowly (Breen and Jonsson 2007; Breen and Luijkx 2004; Vallet 2001). However, these two hypotheses have been challenged in a recent article by two economists (Long and Ferrie 2013). Using historical census data and the 1973 Occupational Changes in a Generation (OCG II) survey, Long and Ferrie find that intergenerational occupational mobility in the U.S. was much higher in the late-19th than in the mid-20th century. Considering that rapid industrialization in the U.S. took place between 1860 and 1930 (Xie and Killewald 2013), Long and Ferrie's finding contradicts both of the two hypotheses by suggesting that social fluidity in a major modern society declined over its course of industrialization. Controversial as it is, Long and Ferrie's study poses serious challenges to the two prominent hypotheses in sociology about the effect of industrialization on social mobility.

In the current literature evaluating the industrialism thesis and the FJH hypothesis, industrialization is construed as the level of industrial development at a given time point for a given society, undifferentiated for the parents' versus children's generations. In other words, industrialization is treated as a state, not a process. While this approach is reasonable for comparisons of societies undergoing industrialization at similar paces, it is inadequate if there is a substantial variation in the pace of industrialization across societies being compared. A rapid pace of industrialization, net of the industrialization level, may play a direct role in promoting

social fluidity. Indeed, a number of national studies have suggested that rapidly industrializing societies, such as Israel and Korea in the 1960s and 1970s, seem to exhibit relatively weak class boundaries, especially between agricultural and nonagricultural classes (e.g., Goldthorpe, Yaish, and Kraus 1997; Ishida, Goldthorpe, and Erikson 1991; Park 2003; Torche 2005). These pieces of evidence, however, are at best fragmentary at the present. To our knowledge, no systematic effort has been made to explore the theoretical implications of the pace of industrialization for social mobility.

China's recent history provides a unique opportunity for better understanding the impacts of market transition and rapid industrialization on intergenerational social mobility, as the country has experienced striking industrial expansion as well as the demise of socialism since its economic reform began in 1978. This article represents our effort to exploit this opportunity. Using data from six waves of comparative, nationally representative surveys from 1996 to 2012, we analyze trends in intergenerational class mobility among Chinese men and women born between 1936 and 1981. We use log-linear analysis to carefully examine patterns of class fluidity net of changes in the marginal distribution of the Chinese class structure. In particular, we model three distinct dimensions of class fluidity—status hierarchy, class immobility, and affinity—and trace them across four birth cohorts. Besides the roles of marketization and industrialization, we also pay close attention to the influences of a peculiarly Chinese social institution—the household registration (*hukou*) system—that puts agricultural workers at a structural disadvantage by preventing them from migrating to and settling down permanently in cities (Wu and Treiman 2004).

We further interpret temporal trends in social fluidity in China within an international context by comparing patterns of mobility in different Chinese cohorts with those in 12 advanced industrial countries analyzed in Erickson and Goldthorpe's (1992) project, Comparative Analysis of Social Mobility in Industrial Nations (henceforth CASMIN). Our own comparative analysis involves measuring the magnitudes of social fluidity or rigidity in post-revolution China relative to those in more developed countries. Capitalizing on temporal trends in China as well as cross-national variation, we aim to understand how patterns of intergenerational social mobility may be affected not only by the level, but also by the pace, of industrialization.

THEORETICAL AND METHODOLOGICAL ISSUES

State Socialism, Market Transition, and Class Stratification

Class theorists have long speculated about the influences of political institutions on social stratification. As both Parkin (1971) and Giddens (1973) suggest, compared with liberal capitalist societies, state socialist regimes may exhibit less class-based stratification due to the absence of private property, less differentiated reward systems, and more egalitarian social policies (see also Szelényi 1998). This argument may well have been applicable to socialist China. First, the socialist state policies carried out immediately following the founding of the People's Republic of China in 1949 eliminated virtually all forms of private property and effectively reduced the "bourgeoisie class" to a group of peddlers, shopkeepers, and self-employed artisans and handicraft workers, which according to our data altogether constituted less than 2% of the entire labor force. The abolition of inheritable property removed material obstacles to upward mobility for the poor as well as financial protections against downward mobility for the rich. Hence, the economic foundation underlying the class structure may have played a much weaker role in class reproduction in socialist China than in the West.

Second, up until the end of 1980s, most urban workers in China were employed by the state, which imposed a rigid wage grade system that deliberately suppressed income inequality, both within and between occupational classes. Thus, children of different class origins had more equal material resources for occupational attainment than would have been the case in a highly unequal society. Relatively low income inequality, moreover, reduced the economic incentives for elites to transmit their social advantages to their offspring. Class mobility, in other words, was a game of low stakes.

Finally, in the pre-reform era, especially during the Great Leap Forward (1958–1960) and the Cultural Revolution (1966–1976), the Chinese government vigorously pursued a set of egalitarian educational policies that favored the offspring of peasants, workers, and soldiers, including the abolition of tuition fees, dramatic expansions of primary and secondary education in the countryside, and an emphasis on political criteria rather than academic ability for admission to universities (Meisner 1999: 362-63). As a result, educational opportunities were greatly enhanced for socially disadvantaged groups, such as rural youth, women, and the urban poor (Hannum and Xie 1994; Zhou, Moen, and Tuma 1998). Since a good education, particularly at the post-secondary level, could lead to a managerial or professional job in the state sector, it is

reasonable to suppose that social mobility, particularly long-range upward mobility, should have been higher under Chinese state socialism than in a liberal market economy.

Since 1978, the economic reform in China has dismantled the old system of state planning and embraced markets as the guiding principle of resource allocation. What is the implication of the market-oriented reforms for intergenerational mobility? Earlier research has shown declines in class fluidity following the collapse of state socialism in Russia (Gerber and Hout 2004) and Hungary (Robert and Bukodi 2004). Given the experiences in Eastern Europe, there are good reasons to conjecture that the process of market transition may have also led to a less open class structure in China (Bian 2002). First, the emerging private sector has provided abundant opportunities for administrative elites to accumulate wealth through their political influence and social networks (Bian and Logan 1996; Rona-tas 1994). For instance, many government officials have successfully turned themselves into private entrepreneurs or become patrons of private businesses formally owned by their relatives or friends (Meisner 1999: 475-77). Since economic resources are readily inheritable, the conversion of political power into personal wealth has greatly facilitated the intergenerational reproduction of socioeconomic status, if not of occupational titles.

Moreover, during the reform era, the Chinese government deregulated the state sector and its rigid reward system. Wage differentials increased substantially between professionals and regular workers, and among workers with differing skills (Zhou 2000). Due to the deregulation of wages as well as the expansion of the private sector, income inequality has soared in China over the past three decades (see Xie and Zhou 2014). Hence, the upper class now has both more resources and stronger motivation to pass their advantages on to their children. In addition, the populist educational policies in favor of the rural population during the Maoist era have largely been abandoned, and in their place is a more selective system of recruitment. Wu (2010) shows that during the 1990s, the effect of family background on educational attainment increased, and the rural-urban gap in the likelihood of transition to senior high school widened. Thus, for children of underprivileged families, especially those of rural origin, the prospect of long-range upward mobility may have become much slimmer than in the past. In light of these processes, we would expect that *the link between class origin and class destination has tightened during China's post-socialist transition, making it difficult for intergenerational mobility to occur along the socioeconomic hierarchy.*

Industrialism, Rapid Industrialization, and Social Mobility

One of the earliest explanations that stratification scholars have proposed to account for trends in social mobility highlights the role of industrialization. The "thesis of industrialism," in particular, states that industrial development should promote equality of opportunity because it entails a process of economic rationalization that will shift the emphasis away from ascription to achievement in the allocation of social positions (Treiman 1970; see also Blau and Duncan 1967: chapter 12). As an integral part of industrialization, the argument goes, the spread of public education and the expansion of mass communications serve to reduce the economic and cultural barriers to movement between classes, and urbanization and greater geographic mobility tend to loosen ties of kinship and thus the influence of family background on occupational attainment.

By definition, industrialization fundamentally alters the prevailing occupational structure and thus necessarily changes the distribution of social classes from the parental generation to the child generation (Duncan 1966; Sobel, Hout, and Duncan 1985). Hence, industrialization necessitates an increase in structural mobility. The focal quantity of interest in the comparative mobility literature, however, is social fluidity, i.e., relative social mobility net of overall changes in the class structure across generations (Featherman and Hauser 1978; Goodman 1969). Some national studies find upward trends in social fluidity over time (e.g., Breen 2004; Featherman and Hauser 1978; Ganzeboom, Luijkx, and Treiman 1989; Hout 1988; Wong and Hauser 1992). However, many cross-national studies (e.g., Erikson and Goldthorpe 1992; Grusky and Hauser 1984; Wong 1990) have rejected the thesis of industrialism in support of a competing hypothesis proposed by Featherman, Jones, and Hauser (1975). In what is known as the FJH hypothesis, it is argued that while there may be an initial effect of economic development on mobility, relative mobility is largely stable and cross-nationally similar once a certain level of industrialization is reached.[1]

In both the thesis of industrialism and the FJH hypothesis, the notion of industrialization is construed as the level of industrial development that is roughly applicable to both generations in a mobility regime. This is a reasonable assumption when industrialization has run its course, as is the case for advanced industrial societies such as those in contemporary Western Europe and North America. For a rapidly industrializing society such as post-revolution China, however,

[1] An antecedent of the FJH hypothesis, which did not distinguish structural mobility from social fluidity, was advanced by Lipset and Zetterberg (1959: 13).

the employment structure is likely to undergo dramatic changes from one generation to the next. Furthermore, the pace of industrialization may change greatly over time. In fact, the percentage of workers not in agriculture—a common indicator of industrialization—increased slowly in the first three decades of the People's Republic, from 16% in 1952 to 31% in 1980; but by 2011, this figure had soared to 65% (National Bureau of Statistics of China 2012). In this paper, we adopt a convenient measure of the pace of industrialization as the generation gap in the proportion of agricultural employment, as a faster pace of industrialization is associated with a larger generation gap in the proportion of agricultural employment. We will show later in this paper that the generation gap in the proportion of agricultural employment has differed greatly across cohorts in post-revolution China.

We contend that the *pace* of industrialization—net of the level of industrialization—may exert a distinct influence on occupational mobility, not only through shifts in occupational structure per se, but also through its effects on the relative chances of mobility into and out of the agricultural sector. Indeed, there is ample empirical evidence showing that the boundary between the agricultural and nonagricultural sectors tends to be particularly permeable in a rapidly industrializing society. For example, drawing on historical census data, Guest, Landale, and McCann (1989) discovered that, relative to the mid-20th century United States, barriers to entering farming were much weaker in the late-19th century U.S., when the country experienced massive industrial expansion. This is in fact the primary cause for Long and Ferrie's (2013) finding that social mobility declined in the U.S. over the first half of the 20th century (Hout and Guest 2013; Xie and Killewald 2013). In the CASMIN project, Erikson and Goldthorpe (1992) also found that, compared with Western European countries, intergenerational movement between the farming and nonfarming sectors was more prevalent in Hungary and Japan, two countries with accelerated paces of industrialization in the post-war years. There is also evidence that sectoral barriers are relatively weak in newly and rapidly industrializing countries, such as Israel (Goldthorpe et al. 1997), Korea (Park 2003), and Chile (Torche 2005). A common explanation, as alluded to by some of these authors, is that the process of industrialization tends to create a large volume of part-time farmers, or "semi-proletarians," who take jobs in the industry sector but retain ties to the land either themselves or through their families, thus effectively straddling the agricultural and industrial sectors (Erikson and Goldthorpe 1992: 153-154).

China has been on a path of rapid industrialization since the economic reform began in 1978. Hundreds of millions of rural-urban migrant workers leave their parents and children in the countryside and supplement family income through various kinds of nonfarming work. More importantly, due to the household registration system (see the next section), rural migrant workers in China are denied legal urban status and the right to permanent migration to cities. The offspring of migrant workers in China, as a result, are highly vulnerable to downward mobility, i.e., becoming peasants themselves. Therefore, we would expect that net mobility between farming and nonfarming occupations has increased during the recent years of rapid industrialization and massive rural-urban migration. In our analysis, we will also draw on cross-national data to assess the hypothesis that *a faster pace of industrialization is associated with greater exchange mobility between the agricultural and nonagricultural sectors.*

The *Hukou* System and Patterns of Class Mobility in China

In concluding the CASMIN project, Erikson and Goldthorpe (1992) argued that cross-national differences in patterns of social fluidity were largely due to country-specific historical and political circumstances rather than to generic factors such as the degree of economic development. In China, an idiosyncratic factor shaping the structure of social mobility is the household registration (*hukou*) system. Established in the 1950s, the *hukou* system requires that all households be registered in the locales of their residence for the government to tightly control population mobility, especially between rural and urban areas (Wu and Treiman 2004). Further, children inherit their parents' *hukou* status.[2]

The vast majority of rural Chinese, as a result, are tied to their home villages, with little prospect of upward mobility. For this reason, a major dimension of social inequality in China has been the divide between the rural and urban populations (Xie and Zhou 2014). Still, the government has policies that allow a rural person to acquire an urban *hukou* under special circumstances, among which the most typical is enrollment in an institution of tertiary or technical education. Given the urban population's structural advantages over the rural population, incentives through this channel of mobility for rural Chinese are very high (Chan and Zhang 1999; Wu and Treiman 2004). Since a tertiary or technical education almost surely

[2] In the case when one of the parents has an urban *hukou* while the other has a rural *hukou*, the child usually inherits the mother's *hukou* (Chan and Zhang 1999).

confers an administrative or professional job, a large proportion of those who manage to change their *hukou* status end up in relatively high-status positions. Thus we would expect that in China, those few individuals who have successfully moved out of agriculture intergenerationally will be well represented in the upper echelon of the socioeconomic hierarchy.

Interestingly, previous research also reveals that reverse mobility from the professional and managerial class to the agriculture class has also been particularly common in China (Cheng and Dai 1995; Wu and Treiman 2007). To explain this phenomenon, Cheng and Dai (1995) pointed to the policy of rustication during the Maoist era: two waves of "send-down" campaigns before and during the Cultural Revolution forced tens of millions of urban youths, especially the offspring of urban intellectuals and bureaucrats, to go to the countryside and labor in the fields. Wu and Treiman (2007) nonetheless discounted this explanation by pointing out that most urban youths who were sent down had returned to the cities by the 1980s. Instead, they suggest that the long-range downward mobility back to agriculture is also a unique product of the *hukou* system. Specifically, children of rural cadres are likely to become peasants themselves because opportunities to obtain nonagricultural work, either white collar or blue collar, are scarce in the countryside. In other words, the *hukou* system, combined with a rural occupational structure composed mostly of a vast peasantry and a small group of village cadres, has led to disproportionate amounts of exchange mobility between the agricultural and the professional/managerial classes.

The *hukou* system may have also produced a structural affinity between agriculture and self-employment. While private property ownership, as noted earlier, was officially outlawed in pre-reform China, this restriction on private property was effectively enforced mostly in urban areas, where the government had the economic power to employ all urban workers and the administrative capacity to disallow private businesses. As a result, a small number of rural Chinese were still engaged in self-employment, such as peddlers, petty shopkeepers, and self-employed artisans. Because they were mainly confined to rural areas and had rural *hukou*, their offspring, if occupationally mobile, would be more likely to enter farming than any other occupation. The affinity between these two groups may have become even stronger in the reform era. As noted by Nee (1989), although the economic reform encouraged private entrepreneurship from the beginning, it was the lower tiers of the social hierarchy who initially took advantage of the market opportunities. In rural areas, following the breakup of agricultural collectives and the

establishment of the household responsibility system, a large number of surplus laborers that were freed from the production teams began to start their own businesses. In urban areas, both party cadres and regular state workers initially had too high a stake in the existing system to plunge into the precarious private sector. As a result, the vast majority of private entrepreneurs in the early phase of the economic reform also came from marginalized social groups, particularly rural-urban migrants (Wu and Xie 2003; Wu 2006). However, because the core of the *hukou* system has been left largely intact since the market reform, the offspring of these early entrepreneurs faced little chance of entering the formal urban economy, and many ended up becoming peasants again, constituting a pattern of reverse mobility from self-employment to farming.

From the above discussion, we would expect that due to the institutional segregation of the rural and urban populations, *class mobility in China has been shaped by disproportionate flows between farming and the managerial/professional class, and between farming and self-employment*. In the analysis that follows, we incorporate these two patterns of affinity into models of class fluidity and its trends. Moreover, we use cross-national data to test whether these affinities are truly unique to contemporary China or shared by other countries as part of a general mobility regime.

Social Mobility as a Multidimensional Process

The earlier discussion suggests that trends in social fluidity in China's recent history have been influenced by two opposing social forces: on the one hand, social fluidity may have declined due to the demise of state socialism; on the other hand, social fluidity may have been facilitated by rapid industrial expansion. It seems that these two effects may have offset each other to a degree at which neither can be empirically detected. This is not necessarily the case, however, because social mobility is a multidimensional process and can be understood as such (Hout 1984; Wong 1992). It is true that intergenerational data, including those analyzed in this paper, are typically two-way cross-classifications (F_{ij}) of social origin, i.e., parental class/occupation status ($i = 1, \dots I$), by social destination, i.e., children's class/occupation status ($j = 1, \dots J$). Typically, $I = J$ if the same measurement is applied for both social origin and destination. However, because there are multiple categories in the measurement of origin and destination (i.e., $I = J > 2$), multiple latent dimensions of association between origin and destination can be exploited in such two-way tables (Goodman 1979; Hauser 1980).

Our earlier discussion suggests that market transition and industrialization affect social mobility differently, not only in the overall direction of reducing versus increasing social fluidity but also in weakening or enhancing specific flows of social mobility: While market transition reduces social fluidity by making intergenerational mobility along status hierarchy more difficult, rapid industrialization promotes social fluidity by weakening the barrier between the farming and nonfarming sectors. As we will show, these two effects can be separately modeled in a two-way mobility table via log-linear analysis.

Of course, this is not the first study to investigate trends in social mobility in China. Using data collected from six selected provinces, Cheng and Dai (1995) showed that relative chances of mobility between different class origins had been largely stable throughout China's state socialist era. More recently, drawing on data from two nationally representative surveys, Chen (2013) also found little evidence for either an upward or a downward trend in social fluidity during the reform era. Neither of these studies, however, attended to the multiple dimensions of class fluidity and changes therein; in fact, their assessments of temporal trends were both based on the Unidiff model (Xie 1992), which hinges on the strong assumption that different dimensions of class fluidity, such as status hierarchy and sectoral barrier, would change in exact proportion to one another over time. If this assumption does not hold true, it may lead researchers to overlook the theoretically important changes we discussed earlier. Our study relaxes this assumption by examining how the different dimensions of class fluidity have evolved separately over time. As we will show, recent trends in class fluidity are simultaneously characterized by a strengthened status hierarchy and a weakened sectoral barrier—a finding that has eluded previous studies that inadequately encapsulated multidimensional changes in a single indicator.

Gender and Trends in Social Mobility

Many national studies on social mobility trends have relied on male samples only (e.g., Featherman and Hauser 1978 for the United States; Goldthorpe et al. 1997 for Israel; Park 2003 for Korea; Torche 2005 for Chile), primarily because female labor force participation may have been differentially selective over time in those societies. When women's labor force participation rate is low, as was the case in many western countries, women of upper class origins are more likely to stay out of the labor force than women of lower class origins because the former are more likely to be married to husbands with high incomes (Fligstein and Wolf 1978; Hauser, Featherman, and Hogan 1977). In the past four decades in western countries such as the U.S.,

women's labor force participation has significantly increased, along with their educational attainment, commitment to career jobs, and financial contributions to families (Bianchi, Robinson, and Milke 2006; Blau, Brinton, and Grusky 2006; DiPrete and Buchmann 2013). If women's non-participation in the labor market is selective, it is evident that the strength of this selection has changed over the period when women's labor force participation has significantly increased. Hence, it would be difficult to disentangle real changes in social fluidity among women from changes in the selectivity of their labor force participation. As a result, it is difficult to compare trends in intergenerational mobility for men with those for women.

However, leaving women out of analysis is a convenience, but not a solution. Ideally, we would want to track trends in intergenerational mobility for both men and women, as all relevant theories on trends in intergenerational social mobility, as we discussed earlier, are equally applicable for both men and women. We thus expect similar trends by gender. For the present study, if trends in class fluidity in China differed significantly between men and women, it would severely undermine our theoretical interpretation of the findings at the societal level. Fortunately, the problem of selectivity for women's labor force participation is relatively minor for post-revolution China, where female labor force participation has been consistently high compared with other societies (Bauer et al. 1992). In the United States, for example, the labor force participation rate among women at ages 25–54 increased from 45% in 1965 to 75% in 2005, whereas the same indicator for China stayed around 85% throughout this period (Bauer et al. 1992; International Labour Organization 2014; Mosisa and Hipple 2006). Therefore, in the following analysis, we report results for both men and women and discuss gender differences when they appear.

DATA AND MEASURES

Data for this study come from six nationally representative sample surveys: the 1996 survey of Life Histories and Social Change in Contemporary China (henceforth LHSCCC 1996) and five waves of Chinese General Social Survey (henceforth CGSS) conducted in 2005, 2006, 2008, 2010, and 2012. These surveys are highly comparable from design to implementation (Bian and Li 2012; Treiman and Walder 1998). First, all these surveys employed a standard multistage sampling design under which one adult was randomly selected from each sampled household. Moreover, in both LHSCCC 1996 and CGSS, the fieldwork was implemented by the same organization: the Department of Sociology at Renmin University of China. In this study, the six samples were pooled to form a single data file by extracting information on gender, age, current job, the father's job at the time when the respondent was 14 (18 for CGSS 2006) years

old, and sampling weights. To track trends over cohorts from the repeated cross-sectional data, we assume that a typical worker would hold a steady job that is likely to last for lifetime. This assumption is likely to hold true for earlier cohorts but is more problematic for recent cohorts. Earlier research shows that intragenerational job mobility in post-reform China is high mostly among young workers, relatively low by international standards, and largely between jobs with similar characteristics (i.e., within the same class) (Whyte and Parish 1985; Zhou, Tuma, and Moen 1997). To be conservative, we construct our measure of social destination from one's job at the age of 30 or older. Operationally, we restrict the sample to respondents who were actively in the labor force and between ages 31 and 64 at the time of the survey. In doing so, we aim to minimize life cycle effects that may confound observed trends across cohorts. We also exclude respondents who were born before 1936 because our analytical focus is on the post-revolution period of the People's Republic of China.[3] After the elimination of a small fraction of cases with missing variables (less than 10%), our final sample consists of 16,045 men and 15,763 women.

To facilitate international comparisons, we adopt the widely used EGP class scheme to measure social origin and destination (Erikson, Goldthorpe, and Portocarero 1979). Specifically, we code occupations into a six-category version of the EGP scheme: the service class (I+II), routine non-manual workers (III), the petty bourgeoisie (IVa+b), skilled manual workers (V+VI), unskilled manual workers (VIIa), and farmers and agricultural laborers (IVc+VIIb). Table 1 shows its relationship with the original 10-category version proposed by Erikson et al. (1979). In fact, the only difference between our six-category version and the seven-category version adopted in the CASMIN project and most subsequent comparative studies is that self-employed farmers and agricultural laborers are combined in our classification. The distinction between these two groups is largely irrelevant in China because private ownership of land is strictly prohibited in both the socialist and post-socialist periods. Even in a fully capitalist society, it is sometimes difficult to distinguish between the two groups, given that children of self-employed farmers who work on their family farms are often classified as agricultural laborers before they inherit the land (Ishida et al. 1991). In our comparative analysis, we collapse all 7×7 tables used in the CASMIN project into their 6×6 versions.[4]

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[3] For a person born before 1936, his/her social origin—defined by the father's occupation when he/she was 14—would be situated in an entirely different political regime.

[4] We also ran a global test of the four aggregations by fitting the independence model to the full 10×10 table and the collapsed 6×6 table, respectively (Goodman 1981). Although statistically significant, the difference in G^2 covers only 13.7% of the total row-column association (623/4563=13.7%). In other words, more than 85% of the association between social origin and destination is conveyed by the six-class version of the EGP scheme.

Table 1: The EGP Class Scheme: Origin Version and the Six-Category Version

Original Version	Six-category Version
I. Large proprietors, higher professionals and managers, II. Lower professionals and managers	I+II. The service class
III. Routine non-manual workers	III. Routine non-manual workers
IVa. Small proprietors with employees IVb. Small proprietors without employees	IVab. The petty bourgeoisie
V. Lower grade technicians and manual supervisors VI. Skilled manual workers	V+VI. Skilled manual workers
VIIa. Unskilled and semiskilled manual workers	VIIa. Unskilled manual workers
IVc. Self-employed farmers VIIb. Agricultural laborers	IVc+VIIb. Farmers and farm laborers

According to our sample restriction criteria, our data consist of individuals who were born between 1936 and 1981. To examine temporal trends, we divide them into four birth cohorts: 1936–1951, 1952–1961, 1962–1971, and 1972–1981. These four birth cohorts roughly correspond to four cohorts who entered the labor force—around 18 years of age—during the 1960s, 1970s, 1980s, and 1990s, respectively. Although the market transition in China started as early as 1978, it was highly incremental and did not gather much momentum until 1992, when Deng Xiaoping made his famous southern tour. Thus, we may label the third cohort (1962–1971) as the "early reform cohort" and the fourth as the "late reform cohort." With the six-class measure of social origin and destination and the definition of four cohorts, the analytical sample can be organized as a 6×6×4 contingency table. Tables A1 and A2 show the tabular data for men and women, respectively. Note that all cell counts are adjusted according to sampling weights.

METHODS AND ANALYSIS PLAN

In this study, we model multiple dimensions of class fluidity in intergenerational mobility tables, including status hierarchy, class immobility, and affinity, and allow them to evolve independently across cohorts. To achieve this goal, we first consider the "core model of social fluidity" advocated by Erikson and Goldthorpe (1987, 1992). Initially derived to fit data from England and France, the core model purports to depict a common pattern of class fluidity among

all advanced industrial societies. It uses eight "design matrices" to characterize four types of effects—hierarchy, inheritance, sector, and affinity—that enhance or reduce mobility between specific classes. In particular, the hierarchy effects gauge the impact of status distances on the degree of mobility. The larger the hierarchy effects, the greater the level of vertical stratification. The inheritance effects capture the tendency of immobility and its variation across different classes. The sector effects reflect the difficulty of moving between the agricultural and nonagricultural sectors. Finally, the affinity effects are used to capture disproportionate amounts of movement between specific classes that cannot be explained by the effects of hierarchy, inheritance, and sector. However, the core model was originally formulated to fit the 7×7 mobility tables that separate out self-employed farmers from agricultural laborers. To adapt the core model to the six-class version of the EGP scheme, we convert the eight 7×7 design matrices to 6×6 matrices by removing the row and the column representing self-employed farmers, a category that does not formally exist in China. In this adaptation of the core model, the sector effect becomes redundant because it corresponds exactly to the inverse of the inheritance effect for the farming class.

The core model of social fluidity, however, has been criticized for a number of its drawbacks (see Hout and Hauser 1992). For instance, it uses only two crossing parameters to represent status differences among seven classes, thus inadequately representing the fine gradations along the socioeconomic hierarchy. Moreover, the affinity effects seem to be deliberately chosen to fit the English and French data and may not reflect historical and political circumstances in other countries. For these reasons, we adopt a hybrid model that uses a linear-by-linear specification to characterize the status hierarchy, six diagonal terms to identify class-specific immobility, and four Chinese-specific affinity parameters to capture disproportionate flows between farmers and the service class and between farmers and the petty bourgeoisie. The model can be expressed by equation (1).

$$\log F_{ij} = \mu + \mu_i^R + \mu_j^C + \theta X_i^R X_j^C + \delta_i D_{ij} + \sum_{p=1}^{4} \alpha_p Z_{ij}^p \qquad (1)$$

Here, the first three terms are used to saturate the row and column marginal distributions, and the parameters θ, δ_i, and α_p represent the effects of hierarchy ($X_i^R X_j^C$), immobility (D_{ij}), and affinity (Z_{ij}^p), respectively. In the linear-by-linear specification, the row scores X_i^R and columns scores X_j^C can either be externally derived or internally estimated. In the latter case, the model is an

extension of the RC (II) model (Goodman 1979). Were the affinity parameters absent, equation (1) would correspond to a quasi-linear-by-linear model or quasi-RC (II) model.

In the following analysis, we first select a model that best captures the general patterns of class fluidity in China. We then examine trends in fluidity by allowing specific parameters of the selected model to vary across cohorts. In both steps, we use the Bayesian Information Criterion (BIC) to compare the fit of alternative models (Raftery 1995). The model with the lowest BIC is preferred. Furthermore, we put China in a comparative perspective by examining cross-national variations in different dimensions of class fluidity. Finally, we conduct two sets of sensitivity analyses to test whether the observed trends across cohorts are contaminated by age or period effects.

RESULTS

Trends in Class Structure and Absolute Mobility Rates

Given China's vast social and economic transformation over the past few decades, it is instructive to examine trends in class structure and absolute mobility rates before moving on to the analysis of class fluidity. Figure 1 shows the changes in the marginal distribution of class destinations across the four birth cohorts. Several trends are worth noting. First, although women were more likely to be engaged in farming than men, the proportion of agricultural employment declined sharply for both sexes. Industrialization gained more momentum in recent decades, as reflected in the steeper slope of decline from the third to the last cohort than in earlier successive cohorts. Second, for both men and women, the proportion of petty bourgeoisie rose steadily, reflecting the gradual expansion of markets since the late 1970s as well as the fact that younger cohorts were more likely to work in non-state sectors than older cohorts. Finally, the proportion of the service class increased considerably from the third cohort to the last cohort, reflecting the latest technological changes and rapid growth in managerial and professional jobs.

Figure 2 shows trends in absolute mobility rates, with rates of upward mobility, downward mobility, and immobility represented respectively by squares, circles, and triangles. Here we treat the six classes as ordered in the sequence as they appear in Table 1. Thus, the rate of upward/downward mobility corresponds to the proportion of workers who were in a higher/lower class position than their fathers, and the rate of immobility corresponds to the proportion of workers who were in the same class as their fathers. We can see that from the

second cohort on, the rate of upward mobility increased substantially for both men and women. Yet the rise in upward mobility came from a decline in class immobility rather than in downward mobility. In fact, rates of downward mobility have been fairly stable over time, ranging from 10% to 15% for both sexes. Given the rapid decline in farming, as shown in Figure 1, we may infer that both rising upward mobility rates and declining class immobility rates resulted mainly from industrialization, which moved a large proportion of the peasantry into the industrial sector. To test this conjecture, we excluded the farm sector from the mobility tables and recalculated the three rates for the 5×5 sub-tables. The results, represented in dashed lines, confirm our conjecture. When the farm sector is excluded, both the rise in upward mobility and the decline in class immobility disappear, and all three rates exhibit no more than trendless fluctuations. Indeed, the nonagricultural labor force is about equally divided into the three groups of upwardly mobile, downwardly mobile, and immobile in each cohort for both men and women.

Figure 1: Trends in Distribution of Class Destinations across the Four Cohorts

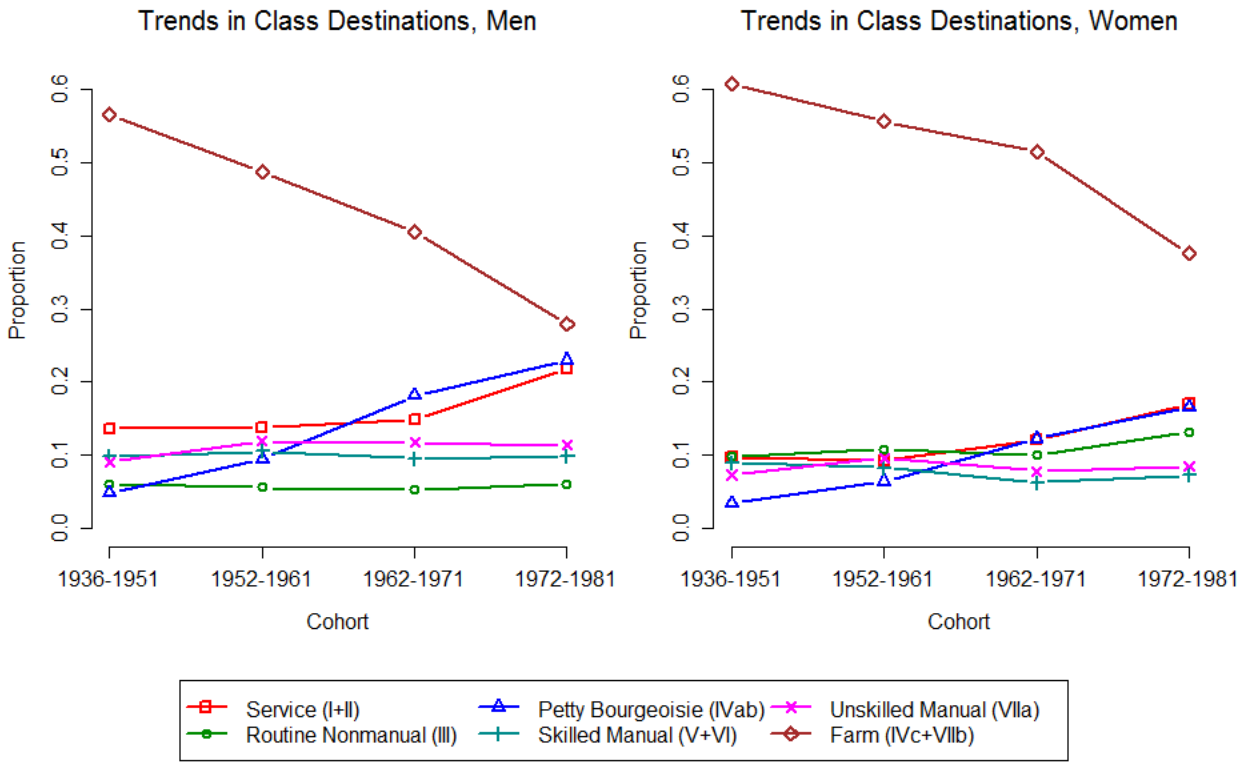
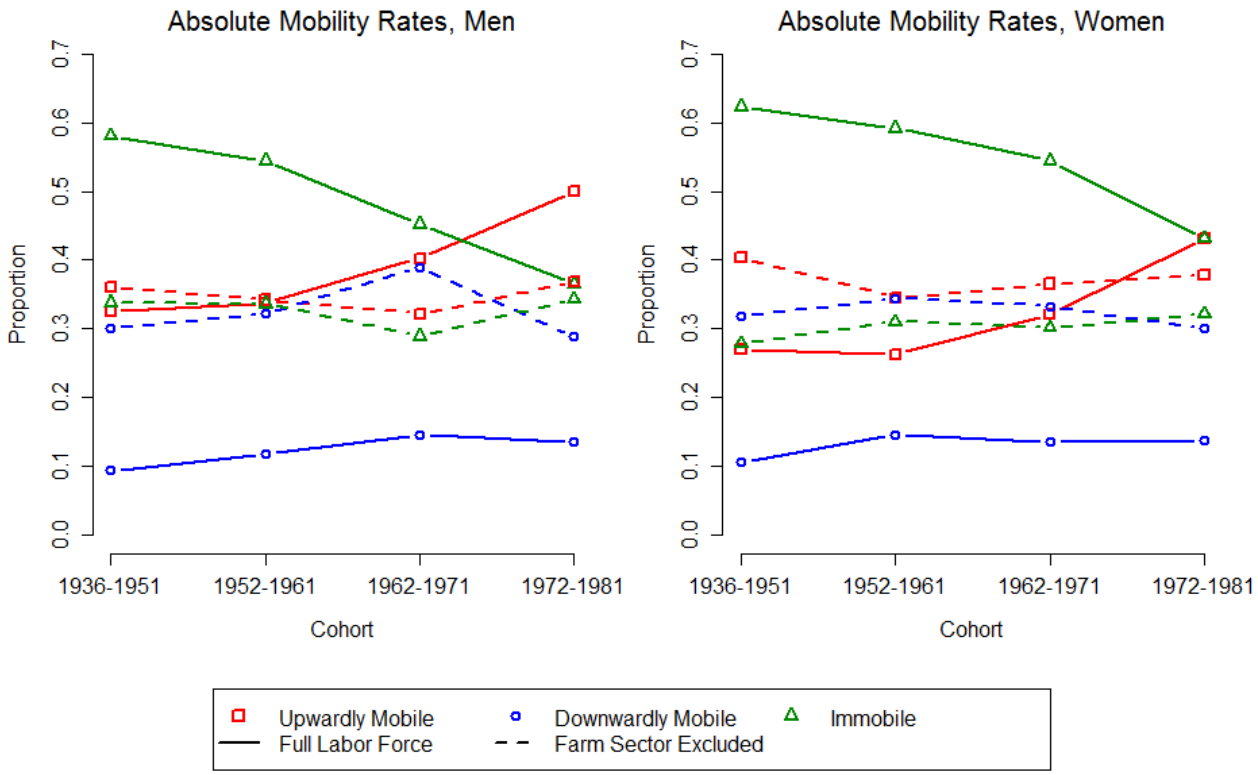


Figure 2: Trends in Absolute Mobility Rates across the Four Cohorts



Patterns of Class Fluidity

We now use log-linear analysis to assess the net effects of origin on destination, i.e., class fluidity. In the first step, we select a model that best depicts general patterns of fluidity in all cohorts. In other words, the parameters representing origin-destination association are assumed to be constant across cohorts. The goodness-of-fit statistics for competing models are reported in the upper panel of Table 2. Let us first consider two baseline models. First, the conditional independence model (model 1) saturates the two-way marginal distributions of origin-by-cohort and destination-by-cohort, but it stipulates that origins and destinations are independent within each cohort. The large G^2 and BIC lead us to simply reject this naive model. The model of constant social fluidity (model 2) specifies that the degree of class fluidity is invariant across cohorts but otherwise does not constrain the form of association between origin and destination. It greatly improves the fit to the data, capturing all but about 3% of the origin-destination association (measured by G^2) for both men and women. However, by saturating the row-column interaction, the model of constant social fluidity does not explicitly "model" patterns of intergenerational transmission. Yet we use it a benchmark against which more restricted models of cohort-invariant association are evaluated.

Table 2: Goodness-of-Fit Statistics for Competing Models of Social Fluidity

		Men			Women		
	df	G^2	*p*	BIC	G^2	*p*	BIC
Models for Patterns of Fluidity							
1. Conditional Independence	100	3901.7	0.00	2933.4	4930.5	0.00	3964.0
2. Constant Social Fluidity	75	110.8	0.00	-615.5	144.3	0.00	-580.6
3. Core Model	93	385.0	0.00	-515.5	588.8	0.00	-310.0
4. Core Model with Chinese Affinity Parameters	91	211.5	0.00	-669.7	252.4	0.00	-627.2
5. Quasi-RC (II)	85	158.8	0.00	-664.3	201.5	0.00	-620.0
6. Quasi-RC (II) +Chinese Affinity Parameters	81	128.8	0.00	-655.6	149.7	0.00	-633.2
7. Quasi-RC (II) with Equality Constraints	89	196.2	0.00	-665.6	308.8	0.00	-551.4
8. Quasi-RC (II) with Equality Constraints + Chinese Affinity Parameters	85	133.4	0.00	-689.7	187.3	0.00	-634.2
9. Quasi-Linear-by-Linear	93	408.0	0.00	-492.6	587.4	0.00	-311.5
10. Quasi-Linear-by-Linear +Chinese Affinity Parameters (Preferred model)	89	144.5	0.00	-717.3	211.2	0.00	-649.1
Models for Trends across Cohorts							
11. Model 10 with All Parameters Varying with Cohort	56	67.4	0.14	-474.9	114.5	0.00	-426.8
12. Model 10 + Cohort-varying Farm Immobility + SES*Cohort 4 (Preferred model)	85	98.2	0.16	-724.9	165.0	0.00	-656.6
Model 12 vs. Model 11	31	31.2	0.46		50.5	0.015	
13. Model 10 with Unidiff Association by Cohort	86	114.0	0.02	-718.8	183.3	0.00	-647.9
Layer Effects		$\phi_1 = 1; \phi_2 = 1.33;$ $\phi_3 = 1.17; \phi_4 = 1.08;$			$\phi_1 = 1; \phi_2 = 1.10;$ $\phi_1 = 0.96; \phi_2 = 0.85;$		

Note: The core model is adjusted to the six-class EGP scheme. The linear-by-linear association model uses the medium ISEI within each origin and destination class as the corresponding row or column score. The Chinese affinity parameters are used to capture disproportionate flows between farmers (IVc+VIIb) and the service class (I+II) and between farmers (IVc+VIIb) and the petty bourgeoisie (IVab).

The core model of social fluidity (model 3) fits the data reasonably well, explaining most of the origin-destination association with only seven parameters (G^2=385 for men; 588.8 for women). But in terms of the BIC, it compares unfavorably with the model of constant social fluidity. As noted earlier, one of the drawbacks of the core model is that the affinity terms were based on peculiarities of specific Western societies, especially England and France. We next modify the core model to suit the Chinese case by replacing the original affinity terms with the four affinity terms that represent the closeness between farmers and the service class and between farmers and the petty bourgeoisie in China. The adapted core model (model 4) fits the data much better than model 3, using two more affinity parameters but explaining a much larger proportion of the origin-destination association (G^2=211.5 for men; 252.4 for women). It is also preferable to the model of constant social fluidity according to the BIC.

Models 5–10 are different variants of the hybrid model characterized by equation (1). First, the quasi-RC model (model 5) combines the linear-by-linear specification with six diagonal terms representing the class-specific tendencies of immobility. It also uses eight parameters to estimate the row scores and column scores directly from the data. The BIC suggests that the quasi-RC model (BIC=-664.3 for men; -620 for women) should be favored over the original core model (BIC=-515.5 for men; -310 for women) but not over the adapted core model (BIC=-669.7 for men; -627.2 for women). The quasi-RC model, however, may also be adapted by the incorporation of the Chinese-specific affinity effects. The resultant model (model 6) outperforms the adapted core model for women but not for men. Models 7–8 constitute the counterparts of models 5–6 in which equality constraints are imposed between the row scores and column scores such that $X_i^R = X_i^C$ for each i. In other words, they stipulate that the relative distances between the six classes are common to origin and destination. According to the BIC, the adapted quasi-RC model with equality constraints (model 8) is preferable to all previous models for both men and women (BIC=-689.7 for men; -634.2 for women). In models 9–10, the row scores and column scores were derived from external sources rather than estimated from the mobility data. Specifically, for each origin class and destination class, we constructed a measure of socioeconomic status (SES) using the sample medium of the International Socioeconomic Index (ISEI, see Ganzeboom and Treiman 1996). The numbers are shown in Table 3. We can see that for both men and women, farmers and farm laborers (IVc+VIIb) exhibit the lowest socioeconomic status, and the service class (I+II) stands much higher than the other groups.

Using the SES as the row and column scores, the quasi-linear-by-linear model (model 9) consumes fewer degrees of freedom than the quasi-RC model, but it fits the data much worse. However, when we augment the quasi-linear-by-linear model with the four Chinese affinity parameters (model 10), the model fits the data remarkably well, exhibiting the lowest BIC among all models for both men and women (BIC=-717.3 for men; -649.1 for women). We thus consider model 10 as the model that best characterizes a general pattern of class fluidity in China.

Table 3: Medium ISEI and Fitted Scores from Model 8 for Origin and Destination Classes

	I+II	III	IVab	V+VI	VIIa	IVc+VIIb
Men						
ISEI, Origin	66	45	33	34	29	23
ISEI, Destination	65	43	34	34	30	23
Fitted Score	0.56	0.33	0.06	-0.10	-0.52	0.01
Women						
ISEI, Origin	66	45	34	34	29	23
ISEI, Destination	59	43	37	34	29	23
Fitted Score	0.40	0.47	0.47	-0.13	-0.48	-0.32

Besides the statistical criterion, we prefer model 10 to model 8 because the row scores and column scores can be more easily interpreted in the former. The fitted scores from model 8 are also reported in Table 3. They do not accord well with the medium ISEI in ranking the six classes. In particular, the estimated position of farming is much higher than the actual socioeconomic standing of farmers and farm laborers in China. For men, farming is placed even higher than skilled manual work. Such an unusual scoring of EGP classes, we believe, is primarily a result of the *hukou* system, which has presented the Chinese peasantry barriers to ordinary channels of upward mobility along the status hierarchy, and, in a peculiar way, pulled them closer than most blue collar workers to the class of the petty bourgeoisie and the service class.

Table 4: Parameters Estimates and Fit Statistics for Model 10 and Model 12

	Men		Women	
	Model 10	Model 12	Model 10	Model 12
Hierarchy				
SES/100	8.36*** (1.49)	7.71*** (1.50)	11.45*** (1.47)	10.47*** (1.49)
SES/100 * Cohort 4		4.17*** (1.13)		6.44*** (1.43)
Immobility				
Service (I+II)	-0.21 (0.15)	-0.23 (0.15)	-0.07 (0.12)	-0.10 (0.12)
Routine Non-manual (III)	0.25* (0.11)	0.25* (0.11)	0.28*** (0.08)	0.29*** (0.08)
Petty Bourgeoisie (IVab)	1.28*** (0.12)	1.28*** (0.12)	0.91*** (0.15)	0.92*** (0.15)
Skilled Manual (V+VI)	0.67*** (0.07)	0.67*** (0.07)	0.38*** (0.08)	0.38*** (0.08)
Unskilled Manual (VIIa)	0.23** (0.08)	0.23** (0.08)	0.13 (0.09)	0.13 (0.09)
Farm (IVc+VIIb)	2.56*** (0.07)		2.72*** (0.07)	
Farm, Cohort 1		2.21*** (0.12)		2.82*** (0.13)
Farm, Cohort 2		2.93*** (0.11)		3.03*** (0.10)
Farm, Cohort 3		2.63*** (0.10)		2.68*** (0.09)
Farm, Cohort 4		2.06*** (0.15)		2.01*** (0.14)
Affinity				
Service to Farm	0.97*** (0.11)	0.96*** (0.12)	1.27*** (0.11)	1.25*** (0.11)
Farm to Service	0.44*** (0.09)	0.44*** (0.09)	0.22** (0.08)	0.22** (0.08)
Petty Bourgeoisie to Farm	0.77*** (0.17)	0.71*** (0.17)	0.99*** (0.15)	0.90*** (0.15)
Farm to Petty Bourgeoisie	0.82*** (0.06)	0.81*** (0.06)	0.94*** (0.07)	0.91*** (0.07)
G^2	144.5	98.2	211.2	165.0
Df	89	85	89	85

Note: †p<.1, *p<.05, **p<.01, ***p<.001 (two-tailed tests). Numbers in parentheses are standard errors.

The parameter estimates from model 10 are shown in the first and third columns of Table 4, respectively for men and women. We draw several observations from the estimates. First, we find that the effect of status hierarchy is greater for women than for men, which echoes earlier research showing a stronger association between class origin and class destination for women than for men in China (Chen 2013; Cheng and Dai 1995). Second, consistent with patterns in many other countries, farmers and farm laborers exhibit the strongest tendency of immobility, followed by the class of the petty bourgeoisie. By contrast, the diagonal effect is negative and not statistically significant for the service class, suggesting that the managerial and professional elite in China do not have an additional tendency towards immobility after the effects of status hierarchy are taken into account. Finally, all four affinity parameters are positive and highly significant, affirming the affinity between farmers and the service class and between farmers and the petty bourgeoisie in intergenerational mobility. It is noteworthy, moreover, that the effect of affinitive mobility from the farming class to the service class is greater for men than for women, whereas the reverse—affinitive mobility from the service class to the farming class—appears larger for women than for men. This is likely a result of the entrenched patriarchal mentality in rural China that has caused widespread gender disparities in parental investment and thus in occupational mobility (Hannum, Kong, and Zhang 2009; Hannum 2005).

Trends in Class Fluidity

On the basis of model 10, we now model trends in class fluidity across cohorts. The goodness-of-fit statistics for competing models are shown in the lower panel of Table 2. First, we allow all parameters for origin-destination association—including effects of hierarchy, immobility, and affinity—to vary freely across cohorts, resulting in model 11. Although it fits the data much worse than model 10 according to the BIC, model 11 is useful in two respects. First, it serves as a benchmark against which more parsimonious models can be evaluated. Second, model 11 is equivalent to model 10 applied to the four cohorts separately. Thus we may detect important trends in class fluidity by comparing the parameter estimates across cohorts (shown in Table A3). By doing so, we found that for both sexes, the effect of status hierarchy is considerably higher for the last cohort than for previous cohorts, which confirms our hypothesis that the link between origin and destination in socioeconomic status has tightened during the reform period. Second, we discovered significant variations from cohort to cohort in the effect of farm immobility. Specifically, immobility among farmers and farm laborers rose from the first

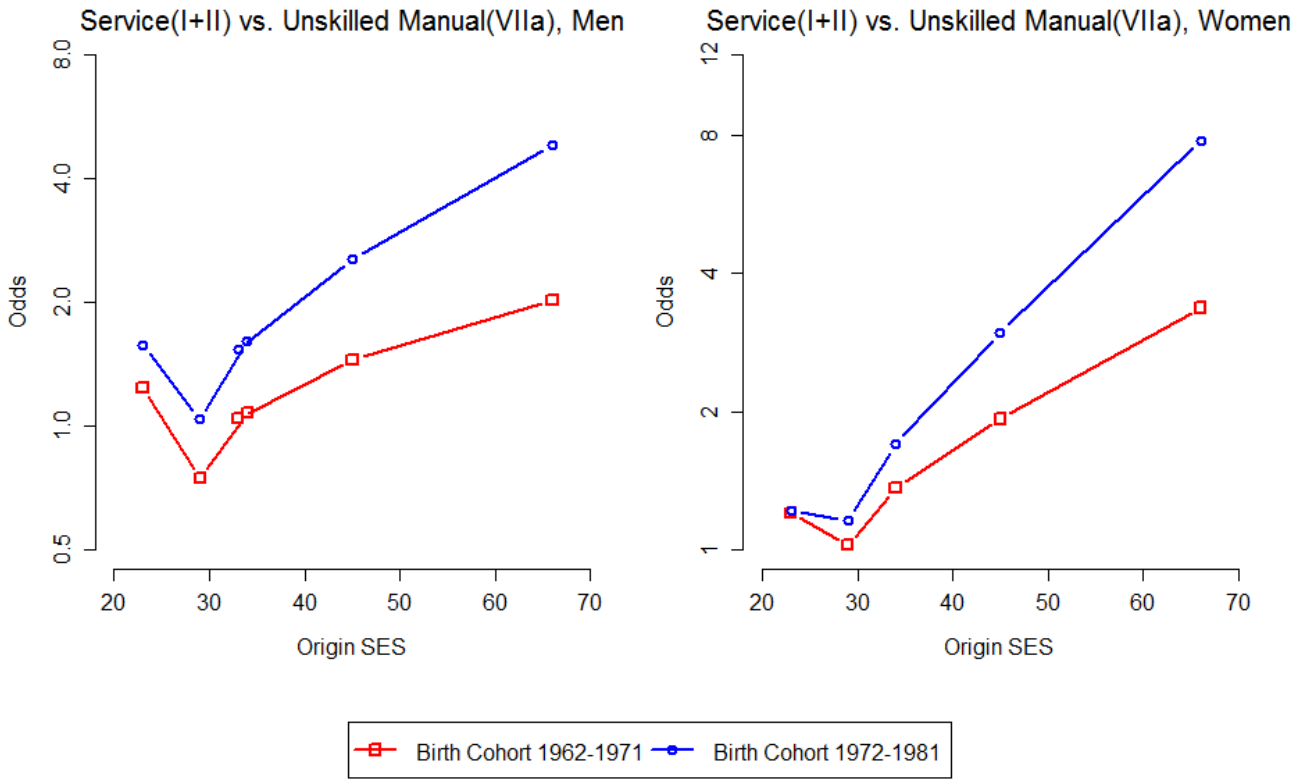
cohort to the second, and steadily declined thereafter. By contrast, neither the affinity effects nor the immobility effects for other classes exhibits noticeable trends beyond trendless fluctuations. Based on these observations, we now relax model 10 by allowing only the immobility effect for the farming class to be cohort-specific, and the effect of SES to differ between the first three cohorts and the last. The resultant model (model 12) fits the data extremely well, exhibiting a lower BIC than models 10 and 11 for both men and women. Moreover, for either sex, when compared with model 11, model 12 cannot be rejected at the 0.01 level according to the likelihood ratio test.

Finally, let us consider a Unidiff model (Erikson and Goldthorpe 1992; Xie 1992) where the structure of origin-destination association is the same as that specified in model 10. Under this model, the effects of hierarchy, immobility, and affinity are allowed to change in proportion to one another across cohorts (model 13). Compared with model 10, the Unidiff model fits the data fairly well, accounting for a sizeable portion of G^2 using only three degrees of freedom (ΔG^2=30.5 for men, 27.9 for women). However, the BIC suggests that it is less favorable than model 12. The last row of Table 2 reports the cohort-specific layer effects estimated under the Unidiff model, where a normalization constraint is applied such that the layer effect for the first cohort equals 1. We can see that for both men and women, the layer effect rises from cohort 1 to cohort 2 and falls thereafter, implying an inverted U-shaped trend in the overall origin-destination association. This trend, it should be noted, perfectly mirrors the inverted U-shaped trend in the effect of farming class immobility revealed by model 11, suggesting that the estimated layer effects of the Unidiff model may be predominantly driven by the trends in agricultural inheritance. In fact, when the farm-farm diagonal cells are blocked from the data, the Unidiff model does not yield significant variations by cohort (not shown). Hence, we prefer model 12 to the Unidiff model not only because it is more probable according to Bayesian statistics but also because it enables us to disentangle two distinct trends in class fluidity that may be masked under a catch-all strength measure of origin-destination association.

We present the parameter estimates of model 12 in the second and fourth columns of Table 4, for men and women respectively. On one hand, the interaction term between SES and cohort 4 indicates that the role of status hierarchy in class fluidity has significantly strengthened during the reform period: for both sexes, the estimated coefficient of SES is more than 50% larger for the late reform cohort (1972–1981) than for the previous three cohorts. To illustrate the tightening of the origin-destination link along the socioeconomic dimension, Figure 3 plots the

relationship between origin SES and the expected odds of entering the service class relative to the unskilled manual class under model 12 for the early reform cohort (1962–1971, shown in squares) and the late reform cohort (1972–1981, shown in circles). For both men and women, the circled line is consistently above the squared line, meaning that across the board, the odds of becoming a professional or manager relative to an unskilled manual worker increased from the third cohort to the last cohort. This overall shift reflects the rising proportion of service class jobs from the third to the last cohort as shown in Figure 1. More importantly, for both sexes, the circled line exhibits a steeper slope than the squared line, suggesting an increase in the effect of origin SES on occupational attainment from the early reform period (around the 1980s) to the late reform period (since the 1990s). Therefore, we find strong support for our hypothesis that the link between origin and destination, especially along the socioeconomic dimension, has strengthened during China's transition from state socialism to a market economy. In addition, it should be noted that the boost in the odds at the very low end of origin SES in Figure 3 results from the affinity effect between the farming and the service classes estimated under model 12.

Figure 3: Expected Odds on Service (I+II) Relative to Unskilled Manual Work (VIIa) under Model 12



On the other hand, model 12 allows the diagonal effect for the farming class to vary from cohort to cohort. Echoing results from the cohort-specific analyses (model 11), Table 4 shows that class immobility among farmers and farm laborers declined sharply from the second cohort to the last cohort. That is, the sectoral barrier between farming and nonfarming occupations has become increasingly weaker over the past three decades. Given that industrialization and rural-urban migration have sped up in China during the same period, this finding accords with our hypothesis that exchange mobility between the agricultural and nonagricultural sectors tends to be higher in a rapidly industrializing society than under more stable economic conditions. It would be premature, however, to draw a causal inference based on temporal association in a single country. In the next subsection, we use cross-national data to examine more systematically the relationship between the pace of industrialization and the strength of the sectoral barrier to intergenerational mobility.

We also find a relatively low level of farm immobility for the first cohort (1936–1951). Detailed analyses of class-specific rates of outflow revealed that this is due to a particularly high rate of entry into agriculture from other classes in the first cohort (not shown). We think that this unusual flow of workers from nonfarming origin to farming destination is attributable to several historical episodes during the early years of the People's Republic of China. First, the rural collectivization in the mid-1950s eliminated a vibrant commercial economy in the Chinese countryside, and, as a result, tens of millions of petty traders and self-employed craftsmen were transformed into land-bound peasants. Second, in the late 1950s, the campaign of the Great Leap Forward created an upsurge in rural industrial employment, especially in small-scale factories producing agricultural implements, fertilizers, and other consumer goods. However, since these factories were mostly inefficient and short-lived, many rural industrial workers were dismissed and turned back to farming in the early 1960s. In addition, due to the establishment of the *hukou* system in 1958, a large volume of rural-urban migrant workers were forcibly sent back to their home villages in the late 1950s and early 1960s. A combination of these processes may have introduced substantial *intragenerational* mobility into agriculture from the 1950s to the early 1960s. Considering that the members of the first cohort were born between 1936 and 1951 and that their class origins are defined as their fathers' occupations when they were 14 years old, their relatively high rate of entry into agriculture is likely a result of the high intragenerational mobility into farming experienced by their fathers.

China in Comparative Perspective

The above analyses have shown that trends in class fluidity in China are characterized by (1) a strengthened status hierarchy, (2) a weakened barrier between the agricultural and nonagricultural sectors, and (3) relatively stable levels of affinity between farmers and the service class and between farmers and the petty bourgeoisie. We now put these trends in a broader context by comparing China with the 12 countries covered by the CASMIN project: Australia, England, France, West Germany, Hungary, Ireland, Japan, Northern Ireland, Poland, Scotland, Sweden, and the United States. It should be noted that mobility tables for these countries were all constructed from cross-sectional surveys in the 1970s. To compare the strengths of status hierarchy and class immobility in these countries with their trends in China, we fit a quasi-linear-by-linear model (model 9 in Table 2) for each of the 12 countries and of the four Chinese cohorts. In this model, the medium ISEI reported in Table 3 are used as the row and column scores for all tables. The estimated effects of status hierarchy and farm immobility are shown in the first two columns of Table 5. We note that while the effect of socioeconomic status in China has greatly strengthened in recent cohorts, it is still much weaker than those in most CASMIN countries. In England, for instance, the estimated coefficient of hierarchy is about 20, about twice as large as that for Chinese men in the late reform cohort. The only country with a low socioeconomic effect comparable to China is Poland, where the Communist regime made a sustained effort to promote long-range social mobility in the post-war years (Erikson and Goldthorpe 1992: 160).[5] Thus, despite the sweeping market reforms and growing income inequality over the past 30 years, China today remains far more fluid along the socioeconomic dimension than most mature capitalist countries.

Further, farm immobility is lower for China's most recent cohort than in all the other countries, suggesting that the barrier between the agricultural and nonagricultural sectors is exceptionally weak in today's China. Moreover, the two countries that come closest to China are Hungary and Japan, both of which experienced rapid industrial expansion in the 1950s and 1960s, the period right before the CASMIN data were collected. At the other extreme, the highest effect of farming class immobility is found in England, a country that had long completed industrialization before the twentieth century. These observations accord well with our hypothesis that the boundary between agriculture and other sectors tends to be more permeable in rapidly industrializing countries than in advanced industrial societies.

[5] Note that for all CASMIN countries, the data were collected in the 1970s. Class mobility in Poland may have changed significantly after the fall of communism in 1989.

Table 5: Cross-national Comparisons in Hierarchy, Farm Immobility, and Affinities

	Quasi-linear-by-linear Model (without Affinity Parameters)		Log Odds Ratios for 2×2 Subtables (Empirical Bayes Estimates)	
	Hierarchy	Farm Immobility	(Service, Farm)	(Petty Bourgeoisie, Farm)
China: Cohort 1	2.61	1.81		
China: Cohort 2	0.62	2.52	2.52	2.57
China: Cohort 3	5.51	1.97		
China: Cohort 4	10.35	1.40		
Australia	21.36	1.94	3.61	2.90
England	20.47	2.99	4.65	3.75
France	21.95	2.70	5.59	3.97
West Germany	23.04	2.58	4.80	4.49
Hungary	24.47	1.66	4.39	3.48
Ireland	17.04	2.79	4.72	3.90
Japan	15.43	1.75	3.17	3.33
Northern Ireland	16.91	3.04	4.66	3.54
Poland	10.13	2.38	4.89	3.47
Scotland	19.49	3.21	4.63	3.67
Sweden	23.94	1.85	4.38	3.01
USA	19.18	1.99	3.87	2.38

Note: Results in this table are for men only. The quasi-linear-by-linear model uses the medium ISEI presented in Table 3 as the row and column scores for all tables.

To visualize this relationship, we plot in Figure 4 the degree of farm immobility against the pace of industrialization among the 12 CASMIN countries as well as the four Chinese cohorts. Here, the effects of farm immobility are exactly the numbers shown in the second column of Table 5, and the pace of industrialization is measured by the difference between the proportion of farming class origins and the proportion of farming class destinations in each

table.[6] We can clearly see a negative relationship between the two: The quicker the pace of industrialization, the weaker the barrier between the agricultural and nonagricultural sectors. Hence, cross-national comparisons strongly suggest that the weakening of the sectoral barrier in China over the recent cohorts is a product of rapid industrialization and the concomitant rural-urban migration.

Figure 4: Degree of Farm Immobility versus Pace of Industrialization among 16 Mobility Tables

Finally, we compare China with the 12 CASMIN countries in terms of the affinity between farmers and the service class and between farmers and the petty bourgeoisie, with the logarithm of odds ratios for two 2×2 sub-tables extracted from the original data: the 2×2 tables containing farmers and the service class only and the 2×2 tables containing farmers and the petty

[6] This difference is not an optimal measure of generational change in the share of agricultural employment because it does not take into account differential fertility and mortality between farming and nonfarming populations. It nonetheless is a reasonable proxy for the pace of industrialization and should serve our purpose of cross-national comparisons well.

bourgeoisie only. The log odds ratio gauges the relative degree of immobility versus affinity. In other words, the smaller the log odds ratio, the greater the relative strength of affinity. Because directly calculated log odds ratios often suffer from large sampling errors, we adopt their empirical Bayes estimates (Zhou 2015), which can effectively improve estimation precision and the accuracy of ranking among tables. The results are reported in the last two columns of Table 5. For each 2×2 table, China exhibits the lowest log odds ratio among all countries except the United States, in which the log odds ratio between farmers and the petty bourgeoisie is lower than in China. The two patterns of affinity, therefore, are in large measure distinctively Chinese phenomena. As discussed earlier, they are unique products of the Chinese household registration system, which has unintentionally yet significantly distorted the channel of intergenerational mobility into and out of peasantry.

Sensitivity Analysis

In our examination of trends in class mobility, we divided the sample into four birth cohorts and interpreted cohort differences as resulting from forces of market transition and rapid industrialization over the past three decades in China. The observed trends by cohort, however, could also be driven by age or period effects. On the one hand, since our survey data span only 16 years (1996–2012), cohort and age are strongly correlated in our cumulative sample. That is, later cohorts are likely younger than earlier cohorts. Although our analysis included only workers who were at least 31 years old, further life cycle effects might still have exerted an influence. On the other hand, cohort is associated with survey period because more recent surveys are more likely to cover later cohorts than earlier cohorts. Thus the observed differences by cohort could also be contaminated by short-term period trends from 1996 to 2012.

Recognizing the intractability of separating out the effects of age, period, and cohort simultaneously, we carried out two sensitivity checks by controlling for age and period separately. First, given that three of the six surveys—LHSCCC 1996, CGSS 2006, and CGSS 2008—also collected information on the respondent's first job, we restricted our sample to these three data sets, recoded class destination as the respondent's first job, and reran model 12 for the corresponding data. Since different workers take up their first jobs within a relatively short age range, potential life cycle effects that may contaminate cohort differences are minimized if not eliminated. The results are reported in the first two columns of Table 6.

Table 6: Parameters Estimates and Fit Statistics for Model 12 under Alternative Specifications

	First Job		2010+2012 Data Only	
	Men	Women	Men	Women
Hierarchy				
SES	12.21***	11.62***	8.94**	16.50***
	(2.73)	(2.38)	(2.92)	(2.36)
SES*Cohort 4	2.69†	4.70**	5.55*	5.41*
	(1.63)	(1.69)	(2.17)	(2.59)
Immobility				
Service (I+II)	-0.65*	-0.33	-0.18	-0.13
	(0.31)	(0.24)	(0.21)	(0.15)
Routine Non-manual (III)	0.81***	0.96***	0.23	0.10
	(0.19)	(0.14)	(0.19)	(0.13)
Petty Bourgeoisie (IVab)	1.73***	1.68***	1.27***	0.78***
	(0.25)	(0.27)	(0.16)	(0.19)
Skilled Manual (V+VI)	0.58***	0.12	0.61***	0.10
	(0.11)	(0.12)	(0.13)	(0.15)
Unskilled Manual (VIIa)	0.25*	0.01	0.32*	0.09
	(0.12)	(0.13)	(0.13)	(0.16)
Farm, Cohort 1	2.11***	2.86***		
	(0.15)	(0.17)		
Farm, Cohort 2	2.30***	2.83***	2.78***	3.00***
	(0.14)	(0.14)	(0.17)	(0.16)
Farm, Cohort 3	2.59***	2.83***	2.36***	2.27***
	(0.13)	(0.13)	(0.16)	(0.14)
Farm, Cohort 4	2.27***	2.26***	1.89***	2.16***
	(0.19)	(0.18)	(0.20)	(0.19)
Affinity				
Service to Farm	0.67***	1.03***	0.68***	1.20***
	(0.17)	(0.16)	(0.18)	(0.16)
Farm to Service	1.21***	0.65***	0.03	0.01
	(0.16)	(0.15)	(0.13)	(0.13)
Petty Bourgeoisie to Farm	0.45*	0.36	0.92***	1.18***
	(0.23)	(0.25)	(0.25)	(0.20)
Farm to Petty Bourgeoisie	0.83***	1.07***	0.71***	0.93***
	(0.16)	(0.15)	(0.09)	(0.10)
G^2	137.4	162.1	53.1	127.5
Df	85	85	61	61

Note: †p<.1, *p<.05, **p<.01, ***p<.001 (two-tailed tests). Numbers in parentheses are standard errors. Data source: LHSCCC 1996, CGSS 2006, CGSS 2008 for left panel; CGSS 2010, CGSS 2012 for right panel.

All patterns and trends using data on the first job are consistent with our main results on the current job shown earlier in Table 4, except that the effect of farming class immobility seems not to decline until the last cohort. Considering that the third cohort (1962–1971) mostly entered the labor market in the 1980s, we may infer that the weakening of the sectoral barrier did not start until the 1990s.

Second, to control for period effects, we applied model 12 to data from CGSS 2010 and CGSS 2012 only. Since only a few respondents in the first cohort (1936–1951) were covered in the 2010 and 2012 surveys, we restricted the analysis to the later three cohorts. The results are shown in the last two columns of Table 6. We can see that most coefficients are statistically significant and in the expected direction. One exception is that the effect of affinity for movement from farm to the service class is very small and not significantly different from zero, suggesting that this uniquely Chinese channel of long-range upward mobility may have been closed off during the most recent years. Overall, the results from these two sensitivity analyses are highly consistent with our main findings. We therefore stand by our cohort-based explanations for trends in social fluidity.

CONCLUSION

In this study, we adopt a cohort perspective to examine trends in social mobility in the People's Republic of China. Absolute rates of mobility, especially of upward mobility, have grown substantially from the cohort born in the 1950s to that born in the 1970s. This growth, however, has been entirely driven by the force of industrialization—that is, the placement of an increasingly larger share of children of farming origin into nonfarming occupations. Trends in social fluidity, however, are much less clear-cut, confounded by two contradicting forces. On the one hand, the influence of status hierarchy on class transmission has significantly heightened during China's transition to a market economy, as reflected by a large increase (more than 50%) in the origin-destination association in socioeconomic status from the early reform cohort to the late reform cohort. On the other hand, the degree of immobility among farmers and farm laborers has declined sharply over the recent cohorts, suggesting that the boundary between the agricultural and nonagricultural sectors has become more permeable during China's rapid industrialization since the 1980s and especially in the 1990s. Characterized by a strengthened status hierarchy and a weakened sectoral barrier, the recent trends in class fluidity in China defy a unidirectional portrayal.

To shed more light on the institutional and economic determinants of social fluidity, we have placed the trends in China in an international context by comparing the four Chinese cohorts with cross-sections of the 12 advanced industrial countries covered in the CASMIN project. Three findings have emerged. First, the link between origin and destination in socioeconomic standing was exceptionally weak under Chinese state socialism. As a result, despite a consolidation of the status hierarchy during the reform period, the influence of origin SES on class attainment is still far weaker in today's China than in mature capitalist countries. Second, cross-national comparisons reveal a strong negative relationship between the pace of industrialization and the strength of the sectoral barrier between farming and nonfarming occupations. Thus, the weakening of the sectoral barrier in China is in all likelihood a result of rapid industrialization and the massive rural-urban migration that has been occurring since the 1980s. Finally, the two patterns of affinity—disproportionate flows between farmers and the service class and between farmers and the petty bourgeoisie—are in large measure distinctively Chinese phenomena, consonant with our *hukou*-based accounts of patterns of mobility into and out of peasantry.

This study contributes to two strands of literature in social stratification. First, it provides new insights into the ways in which institutional transition shapes intergenerational mobility. While Gerber and Hout (2004) have demonstrated a decline in the overall degree of class fluidity following the collapse of communism in Russia, the present study emphasizes that the impact of market transition on social mobility is primarily through a fortification of the status hierarchy. In China as well as other post-socialist countries, the emergence of markets provided abundant opportunities for the old elites to convert their political power into physical capital, thus making socioeconomic status far more inheritable than before. Meanwhile, a more market-driven reward system spurred a sharp increase in income inequality, thereby equipping upper-class families with more resources and incentives to pass their economic advantages on to their offspring. The abolition of egalitarian educational policies, moreover, severely limited the channel of upward mobility for children of socioeconomically disadvantaged families. A combination of these processes may well explain the consolidation of status hierarchy and its influence on social fluidity.

However, we have also shown that China's experience has markedly differed from that of Russia due to a counterbalancing effect of rapid industrialization. In understanding the dual forces of market transition and industrialization in China, our study offers a new perspective for

assessing the influence of industrialization on social stratification. In contrast to the thesis of industrialism and the FJH hypothesis, this perspective highlights the pace of industrialization—rather than the level of industrialization—as a crucial force shaping social fluidity, especially the degree of relative mobility between the agricultural and nonagricultural classes. Cross-national evidence strongly supports our conjecture that the sectoral barrier tends to be weaker during periods of rapid industrialization than under more stable economic conditions. Indeed, a common feature shared by most, if not all, rapidly industrializing societies is the prevalence of part-time farmers who take advantage of opportunities for industrial employment yet retain their ties to the land. By straddling the agricultural and industrial sectors, these part-time farmers effectively weaken the role of the sectoral boundary in intergenerational class transmission. This unique linkage between rapid industrialization and inter-sectoral mobility has profound implications for comparative stratification research, as the literature has only recently begun to go beyond the developed world to study newly industrialized countries in Asia and Latin America (Ishida 2008; Torche 2014).

The above two contributions further illustrate that social mobility is a process of multiple dimensions and should be analyzed as such. Status hierarchy shapes the class destinations of those who move out of their class origins, class immobility reflects a degree of social closure that affects the likelihood of mobility per se, and the sectoral barrier gauges the extent to which macroeconomic structure constrains the specific flows of manpower. Although the multidimensionality of occupational mobility has long been recognized among stratification scholars (e.g., Erikson and Goldthorpe 1987; Hout 1984; Wong 1992), it has received scant attention in theoretical formulations that aim to explain temporal trends or spatial variations. Indeed, almost all existing macro-sociological explanations for variations in social fluidity across time and space—including hypotheses regarding industrialization, educational expansion, political ideology, economic inequality, and cultural exceptionalism—implicitly treated social fluidity as a unidimensional construct, and, as a result, so did most empirical assessments of these hypotheses. If, as this study suggests, different dimensions of the mobility process are driven by different societal forces, researchers would want to study dimension-specific patterns of spatial-temporal variation in social mobility. A unidimensional approach would be theoretically incomplete and analytically inadequate. We believe that future research on comparative mobility will benefit from a fuller appreciation of a multi-dimensional approach.

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Table A1: Weighted Counts for Origin by Destination by Cohort, Men 31-64 Years Old

	Destination						
Origin	I+II	III	IVab	V+VI	VIIa	IVc+VIIb	Total N
Born 1936-1951							
I+II	63	25	11	28	17	50	194
III	32	22	5	20	18	25	121
IVab	10	2	12	6	8	8	46
V+VI	43	19	5	55	29	40	192
VIIa	30	15	9	35	35	17	141
IVc+VIIb	268	113	117	176	191	1714	2580
Total N	445	196	160	321	298	1854	3275
Born 1952-1961							
I+II	132	31	38	55	61	70	388
III	72	36	28	41	44	24	245
IVab	9	7	28	12	14	14	84
V+VI	75	40	38	131	80	27	391
VIIa	58	40	33	59	97	19	306
IVc+VIIb	307	111	281	200	268	2156	3323
Total N	655	265	445	499	564	2310	4738
Born 1962-1971							
I+II	174	60	107	83	83	80	586
III	84	38	64	37	50	35	307
IVab	16	5	44	12	20	15	114
V+VI	102	46	65	127	106	42	489
VIIa	62	20	55	59	79	23	298
IVc+VIIb	401	123	684	219	319	2079	3825
Total N	840	293	1019	538	658	2273	5619
Born 1972-1981							
I+II	138	26	41	26	32	27	290
III	58	12	33	12	19	9	144
IVab	24	5	58	8	15	16	124
V+VI	45	17	39	52	32	12	197
VIIa	39	22	36	27	31	18	173
IVc+VIIb	221	66	348	113	145	592	1485
Total N	525	148	555	237	274	674	2413

Table A2: Weighted Counts for Origin by Destination by Cohort, Women 31-64 Years Old

	Destination						
Origin	I+II	III	IVab	V+VI	VIIa	IVc+VIIb	Total N
Born 1936-1951							
I+II	49	29	7	20	18	49	171
III	28	37	2	21	20	16	123
IVab	6	13	2	10	8	9	47
V+VI	34	44	5	36	28	17	165
VIIa	25	21	5	22	17	12	101
IVc+VIIb	99	101	63	113	91	1408	1877
Total N	242	245	84	222	182	1511	2485
Born 1952-1961							
I+II	113	94	41	53	49	105	455
III	52	89	20	31	35	33	260
IVab	8	18	12	9	7	24	78
V+VI	59	83	19	88	80	36	366
VIIa	52	55	12	63	76	23	280
IVc+VIIb	125	136	177	120	174	2220	2952
Total N	409	476	281	364	422	2441	4391
Born 1962-1971							
I+II	215	115	80	51	58	128	647
III	84	76	58	32	26	47	324
IVab	12	14	28	7	11	26	98
V+VI	88	104	61	94	85	48	480
VIIa	63	64	42	44	63	48	324
IVc+VIIb	276	234	478	154	235	2839	4216
Total N	739	607	747	382	477	3137	6089
Born 1972-1981							
I+II	150	69	46	17	22	34	339
III	52	47	37	17	13	23	189
IVab	25	17	35	13	9	19	119
V+VI	54	59	25	29	19	27	212
VIIa	33	35	21	10	19	19	137
IVc+VIIb	161	141	300	118	156	928	1803
Total N	475	368	464	203	239	1050	2799

Table A3: Cohort-Specific Results for the Quasi-Linear-by-Linear Model with Chinese Affinity Parameters

	Men					Women				
	All Birth Cohorts	1936-1951	1952-1961	1962-1971	1972-1981	All Birth Cohorts	1936-1951	1952-1961	1962-1971	1972-1981
Hierarchy										
SES	8.36***	7.02†	6.61*	8.11***	13.48***	11.45***	5.81	11.32***	11.08***	17.20***
	(1.49)	(3.70)	(2.80)	(2.45)	(3.45)	(1.47)	(4.20)	(2.73)	(2.39)	(3.33)
Immobility										
Service (I+II)	-0.21	-0.16	0.08	-0.41	-0.39	-0.07	0.29	-0.25	0.01	-0.31
	(0.15)	(0.39)	(0.29)	(0.25)	(0.35)	(0.12)	(0.36)	(0.23)	(0.19)	(0.25)
Routine Non-manual (III)	0.25*	0.46†	0.26	0.30	-0.14	0.28***	0.32	0.52***	0.10	0.26
	(0.11)	(0.26)	(0.20)	(0.19)	(0.32)	(0.08)	(0.22)	(0.15)	(0.14)	(0.19)
Petty Bourgeoisie (IVab)	1.28***	1.88***	1.43***	1.07***	1.24***	0.91***	0.20	1.07**	1.05***	0.80***
	(0.12)	(0.39)	(0.26)	(0.21)	(0.22)	(0.15)	(0.76)	(0.35)	(0.25)	(0.23)
Skilled Manual (V+VI)	0.67***	0.55**	0.73***	0.61***	0.82***	0.38***	0.02	0.38**	0.57***	0.22
	(0.07)	(0.18)	(0.13)	(0.12)	(0.19)	(0.08)	(0.21)	(0.14)	(0.13)	(0.22)
Unskilled Manual (VIIa)	0.23**	0.35†	0.31*	0.23	-0.10	0.13	-0.12	0.23	0.13	-0.04
	(0.08)	(0.21)	(0.14)	(0.14)	(0.22)	(0.09)	(0.28)	(0.15)	(0.15)	(0.26)
Farm (IVc+VIIb)	2.56***	2.07***	3.12***	2.59***	2.05***	2.72***	3.11***	3.18***	2.64***	1.70***
	(0.07)	(0.16)	(0.14)	(0.13)	(0.20)	(0.07)	(0.19)	(0.13)	(0.11)	(0.16)
Affinity										
Service to Farm	0.97***	0.76**	1.36***	0.75***	1.02***	1.27***	1.57***	1.48***	1.18***	0.77**
	(0.11)	(0.27)	(0.22)	(0.19)	(0.30)	(0.11)	(0.31)	(0.21)	(0.18)	(0.28)
Farm to Service	0.44***	0.33	0.45**	0.47**	0.46*	0.22**	0.08	0.25	0.33*	0.07
	(0.09)	(0.21)	(0.16)	(0.15)	(0.20)	(0.08)	(0.22)	(0.16)	(0.13)	(0.18)
Petty Bourgeoisie to Farm	0.77***	0.12	1.12***	0.60†	0.91**	0.99***	0.50	1.38***	1.12***	0.39
	(0.17)	(0.42)	(0.33)	(0.31)	(0.34)	(0.15)	(0.41)	(0.28)	(0.26)	(0.29)
Farm to Petty Bourgeoisie	0.82***	0.79***	0.78***	0.92***	0.68***	0.94***	1.22***	1.21***	0.89***	0.65***
	(0.06)	(0.22)	(0.12)	(0.09)	(0.13)	(0.07)	(0.28)	(0.14)	(0.10)	(0.13)
G^2	144.5	20.1	11.6	26.2	9.5	211.2	10.6	39.8	27.4	36.7
df	89	14	14	14	14	89	14	14	14	14

Note: †p<.1, *p<.05, **p<.01, ***p<.001 (two-tailed tests). Numbers in parentheses are standard errors.