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Industrialization and Social Mobility in Korea

Hyunjoon Park

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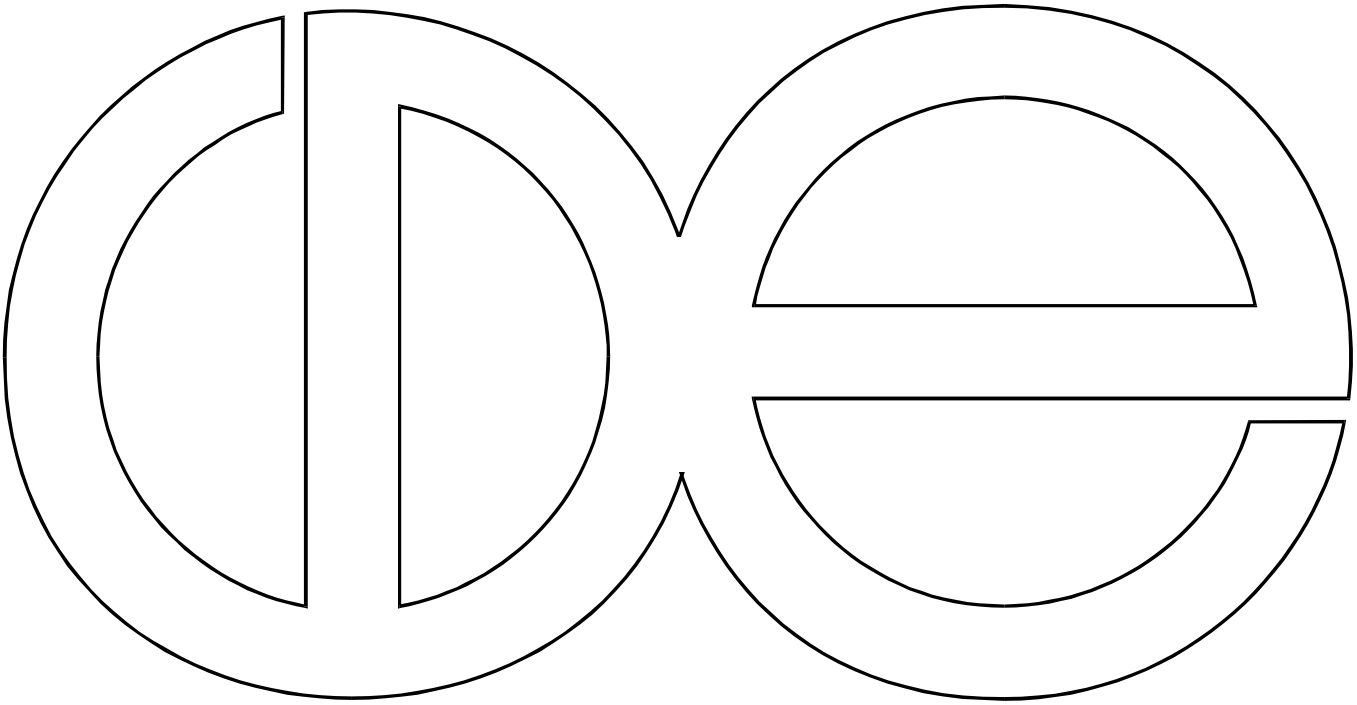

INTERGENERATIONAL SOCIAL MOBILITY AMONG KOREAN MEN IN COMPARATIVE PERSPECTIVE

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Hyunjoon Park
Department of Sociology
University of Wisconsin-Madison

* Direct all correspondence to Hyunjoon Park (email: hypark@ssc.wisc.edu), Department of Sociology, University of Wisconsin-Madison, 1180 Observatory Drive, Madison, WI 53706 (Phone: 608-262-9518, Fax: 608-262-8400).

ABSTRACT

This study intends to investigate the patterns of intergenerational mobility among Korean men and to assess the extent to which the Korean case shows distinctiveness within the framework of the core model proposed by Erikson and Goldthorpe (1992a). The greater dissimilarity between origins and destinations associated with massive movement of labor forces out of farm origins, and in the process the predominance of upward over downward mobility are distinctive features of Korea compared to England, France, and Sweden. More importantly, Korean society shows substantial deviations from the core model as four effects among original eight effects in the core more turn out to be non-significant. Finally, the analysis of the log-multiplicative layer effect model even suggests that the overall level of fluidity appears higher in Korea relative to the three European countries.

INTRODUCTION

The remarkable economic achievements of East Asia over the last few decades, known as the "East Asian Economic Miracle," have received the serious attention of the academic and policy communities who are interested in identifying the socioeconomic and political factors which have led to East Asia's success. The economies of East Asia, especially Japan, Korea, and Taiwan, are distinctive in their strikingly fast and sustained growth since the 1960s. More surprising is the fact that these countries have also been unusually successful at combining high growth rates with highly equal income distributions. The common characteristics of the countries in this region, represented by rapid and at the same time more equitable growth, have been identified as the "East Asian Model" of development (World Bank 1993).

Despite great interest in the economic systems and policies that caused the remarkable economic growth in East Asia, studies of social mobility in this area are still rare. Although Japan has often been analyzed in comparative perspective (Ishida, Goldthorpe, and Erikson 1991; Yamaguchi 1987), there has been little research which uses Korea and Taiwan as a main focus for the comparative study of social mobility (but see Chang 1998 for Korea). Given the similarities of their economic development and policies, the question of whether the countries of East Asia show common patterns of social mobility is of interest.[1] Furthermore, we may gain more insight into the consequences of the industrialization process on

social mobility by investigating the association of certain features in the East Asian model of development with specific mobility patterns.

Since most empirical evidence regarding mobility patterns in industrial societies has been derived from workers' experiences in the European cultural sphere, the East Asian nations make interesting cases for testing the European model. Summarizing empirical results obtained from the European and American experiences, mobility researchers have argued that industrial societies have similar mobility regimes once national variation in the distribution of occupations is taken into account (the FJH hypothesis; Featherman, Jones, and Hauser 1975; Erikson and Goldthorpe 1992a).[2] In fact, many comparative studies covering a variety of societies have produced empirical evidence to support the claim, showing that relative rates are not positively associated with the level of industrial development or even type of political regime (Erikson and Goldthorpe 1992a). However, there has been no serious examination of potential variation in relative rates of social mobility among East Asian nations. Correspondingly, if the fluidity patterns of social mobility in East Asia, which has experienced a relatively unique process of economic development, appear to share common properties with those found in the European nations, the argument for cross-national similarity would receive strong support. If East Asian societies do have a distinct mobility pattern, however, those empirical results could stimulate further research to determine

how previous arguments based on the experience in the European societies could be revised or elaborated.

To this end, I examine the patterns of intergenerational mobility among Korean men in comparative perspective, focusing on the question of whether there is a clear difference in their mobility experience from previous findings about social mobility in other places.

Among the East Asian countries, Korea is especially characterized by extremely rapid growth and a relatively low level of income inequality (Williamson 1993). Furthermore, remarkable educational expansion - in both quality and quantity - as well as industrial development makes Korea, along with Taiwan, embody the essential properties of the East Asian economic model (Birdsall, Ross, and Sabot 1997).

The FJH hypothesis leads us to expect similar relative mobility chances across industrial societies despite significantly different absolute mobility rates affected by national-specific socioeconomic and political contexts. The hypothesis predicts that Korean mobility rates will display no more deviation from the postulated common pattern than do other European nations.

As I will describe later, however, features of the evolving context of Korean intergenerational mobility might have caused significant variation in relative rates. In particular, the following three factors encourage us to expect greater fluidity in Korea: 1) *dramatic change in occupational structure accompanying*

upgrading of employment, which leads to high rates of social mobility and the predominance of upward over downward mobility 2) *relatively low income inequality*, which helps reduce inequality of the distribution of economic resources available between social groups and 3) *impressive educational expansion*, which extends educational opportunities to individuals of all social backgrounds and thus reduces the influence of social origins on destinations. Of course, it would be incorrect to assert that equality of income distribution was substantially higher in Korea than in some European nations and moreover that there was no significant expansion of education in the latter. However, taking into account the interactions of these three features or the synergy effects they might yield together, Korea may show greater equality of relative mobility chances.

My primary aim in this paper is to investigate the nature of the Korean mobility regime and to assess the extent to which the Korean case shows distinctiveness within the framework for the comparative study of social mobility proposed by Erikson and Goldthorpe (Erikson and Goldthorpe 1992a). Based on their seven-fold class schema, Erikson and Goldthorpe have specified a general pattern in industrial nations labeled as "the core model of social fluidity." The model was basically intended to capture the large common element in the fluidity patterns of European industrial nations and has been successfully applied to many other countries as a baseline for comparative analyses. In this regard, my objective - to examine the Korean pattern of social fluidity and compare it with the common

fluidity pattern that characterizes the European nations - can be accomplished by applying the core model to a Korean mobility table.

KOREAN SOCIETY

In this section, I describe three distinctive features of structural change that have evolved in Korea over the last few decades, which will help explain the societal context in which intergenerational mobility occurred. First of all, Korea, as one of the newly developed countries in East Asia, experienced dramatic social and economic changes over the period 1960-1989. In particular, there was a massive change in the industrial and occupational distribution, due to rapid and compressed industrialization. Table 1 illustrates how dramatically the structure of the labor force has changed over the period. Although the decline of agriculture in the course of industrialization appears as a general pattern across most industrial nations, the pace in Korea was exceedingly fast: the proportion of population engaged in agriculture and other primary industry declined from 80 percent in 1960 to 19 percent in 1989. This rapid decline in the agricultural labor force in Korea over a period of three decades exceeds the experience of European nations over the period of a century (Koo 1990).

TABLE 1 ABOUT HERE

The sharp decline in the number of Korean farmers reflects massive mobility of the labor force out of agriculture and the corresponding expansion of the

proportion of people employed in the secondary and tertiary sectors. The number of workers in the manual production sector increased about 10 times from 0.67 million in 1960 to 6 million in 1989. Over the same period, the percentage of people working in sales and services also expanded from 6 percent and 2 percent to 15 percent and 11 percent, respectively. Not only manual work but also white-collar occupations increased significantly; by 1990 clerical jobs and professional & administrative occupations occupied 12 percent and 8 percent of the total labor force, respectively, compared to 2.6 percent and 2.4 percent in 1960.[3]

In addition to impressively rapid industrial development, relatively equal income distribution was another important feature of the Korean economy during the period. Korea attracted considerable worldwide attention as an ideal case, combining growth and equality (Birdsall, Ross, and Sabot 1997; Ogawa, Jones, and Williamson 1993). In many comparative studies of income distribution, Korea had greater equality in its 1970s income distribution than most developing countries and levels of inequality similar to fully industrialized countries such as Japan and the United States (Chenery et al. 1974). Although there has been a debate, due in part to the quality of income data, about trends in income inequality after the 1960s, it is generally accepted that the distribution of income in Korea has remained virtually unchanged, maintaining a relatively high level of equality (Barrett and Chin 1987; World Bank 1993).[4, 5] Indeed, Japanese colonial rule during 36 years (1910-45), land reform after independence, and destruction of

wealth caused by the Korean War eroded the traditional class system and enabled Korean society to start its industrialization process with a fairly open and fluid stratification system (Koo 1985). These characteristics, along with the dramatic changes in occupational structure, reinforce the picture of Korea as highly fluid and open regarding opportunities for social mobility.

Third, Korea has achieved an extraordinary increase in levels of education along with economic growth. Although expansion of the educational system during the twentieth century occurred worldwide, the extent of educational growth in Korea was especially impressive. Secondary and even tertiary levels of education as well as the primary level have expanded dramatically. According to the 1996 OECD educational statistics, the Korean cohort aged 25-34 has the highest percentage of the population that has attained at least university level of education among OECD nations (OECD 1999). Since Korea had one of the lowest educational levels for the cohort aged 55-64, we can easily see the speed of educational development over the past few decades. In addition to the noticeable growth in quantity of education, improvements in the quality of education have been also astonishing. It is well known that Korean students have recorded the highest average scores in various international comparative tests of mathematics and science (OECD 1997). Impressed by the remarkable increase in quantity and improvement in quality of education in Korea, some human capital theorists have claimed that the increase in the number of well-educated workers in Korea played

an important role in reducing income inequality by weakening the scarcity of more-educated workers in the labor market (Birdsall, Ross, and Sabot 1997).

The above three features of structural change since the beginning of industrialization in Korea have important implications for social mobility. First, the redistribution of the working population due to dramatic shifts in the occupational structure might enforce high absolute rates of mobility. Especially, the overall tendency toward upgraded levels of employment, as demonstrated by a sharp decline in the number of people engaged in primary industry and, at the same time, a rise of white-collar employment, was likely to favor upward over downward mobility.

Second, given the important effect in industrial societies of education on social mobility, striking educational expansion along with a relatively low level of income inequality, which provides greater opportunities for the poor to invest in human capital, might encourage more equal mobility chances. According to 'the liberal theory of industrialization,' achievement rather than ascription becomes the dominant criterion for social selection as education expands, which weakens the association between social origins and destinations.[6] In other words, life chances are more likely to be determined by the number of years of education than by class of origin. Consequently, industrial societies have become more open as educational opportunity has expanded to all groups of society.

The primary goal of my analyses is to examine which characteristics of mobility patterns distinguish the Korean case from the European model. I am especially interested in whether higher fluidity would be found in Korea relative to European nations because of unique features of Korean industrialization.

DATA AND CLASS SCHEMA

The data for this study come from Social Inequality Study (SIS) conducted in 1990, one of the most influential cross-sectional surveys for the study of Korean society (Whang 1992). Designed especially for the study of the extent and perception of inequality, the survey contains important information for the analysis of mobility; respondent's occupation and his or her father's occupation when the respondent was an adolescent. The total sample size is 1974 and the ratio of males to females is about 4:1 (male 1576; female 398).[7] In order to achieve comparability with the CASMIN (Comparative Analysis of Social Mobility in Industrial Nations) project under which the core model of Erikson and Goldthorpe was developed, I restrict the analyses to 1452 economically active men aged 20 to 64 at the time of inquiry, following the standard range of age 20-64 in the CASMIN project.

To investigate patterns of intergenerational mobility, the class of destination is defined by the respondent's current occupation at the time of survey and the origin class is the father's occupation at the time when the respondent was an

adolescent. In the analyses, social mobility is examined within Erikson and Goldthorpe's seven-class schema (Erikson and Goldthorpe 1992a:38-39): I+II = service class, III = routine non-manual class, IVab = petty bourgeoisie, IVc = farmers, V+VI = skilled workers, VIIa = non-skilled workers, VIIb = agricultural workers.[8] Compared to more detailed classifications, this seven-fold version of class schema may not be adequate to reveal more subtle cross-national differences. In order to achieve a high standard of comparability for cross-national comparisons, however, the seven categories seem to be best for the Korean data.[9]

To put the Korean society in comparative perspective, I compare patterns of social fluidity in Korea with those of three core nations in the CASMIN project: England, France, and Sweden. The core model of Erikson and Goldthorpe was basically derived from the patterns of social fluidity observed in England and France. Thus, comparisons of the Korean case with these two nations that display the typical European patterns may clarify the distinctive characteristics of the former. By comparing Korea's fluidity with Sweden's, which has greater social fluidity than England or France (Erikson, Goldthorpe, and Portocarero 1982), I can assess the extent to which the Korean case reveals social openness. For this purpose, I utilize mobility tables from those three nations provided by Hauser (1984), which were constructed from data collected in the 1970s. [10, 11]

Following the now commonly accepted distinction between absolute and relative mobility rates, I first study the class distributions in these four nations. In

addition, I decompose the total mobility rates into upward and downward mobility in order to see the general direction of mobility that occurred in each society. Using Sobel, Hout, and Duncan (1985)'s approach, in particular, I investigate the estimates of origin-specific structural mobility. By considering structural mobility arising from the dissimilar distribution of origin and destination classes, I may answer the question of how the rapid and compressed process of industrialization in Korea affected the redistribution of labor force from origin to destination. Then I turn to relative rates of mobility and see if the Korean case presents any significant deviation from the core model postulated to represent general patterns of social mobility in industrial societies. In contrast to absolute rates which are affected by country-specific occupational structure, relative rates of mobility are represented by the association between origin and destination, controlling for different distributions of occupations in each nation.

CLASS DISTRIBUTIONS AND ABSOLUTE MOBILITY RATES

Table 2 displays distributions of respondents by class of origin and destination in Korea as well as in England, France, and Sweden. This table clearly illustrates the rapid transformation of the class structure in Korea. While 65 percent of respondents in the Korean data were farmers by origin, only 19 percent remained in the farmer class by the next generation. Concurrent with this rapid decline in the number of farmers we see the rise of social classes associated with

industrialization: two white-collar groups, the service class (I+II) and non-manual workers (III), showed significant increases, from 4.8 percent and 7.3 percent respectively in origin classes to 10.3 percent and 16.2 percent in destination classes. In addition, industrial working classes continued their massive growth concurrent with the expansion of white-collar occupations. Skilled and non-skilled manual classes occupied respectively only 2 percent and 5.4 percent of the total origin class distribution, but increased to 14.7 and 18.8 percent of the distribution of destination classes.

TABLE 2 ABOUT HERE

The distribution of destination classes in Korea approaches the patterns observed in European countries. However, Korea retains some distinctive features. First, despite the remarkable increase of white and blue-collar workers, the proportion of those classes in the overall Korean class structure is still quite low compared to European societies. While the service class occupies more than 20 percent of total class destinations in the three European nations, the figure in Korea is only 10 percent. The size of the Korean manual workers also does not reach European levels.

In contrast to this, the proportion of routine non-manual workers (III) in Korea is twice that found in the three European countries. This figure is understandable when we take into account the entry into the labor market of university graduates as routine non-manual workers. The expansion of institutions of higher education

along with the influence of Confucian culture and its disdain for manual work served to increase the number of university graduates. It is well known that in East Asia, clerical work is used as a training ground by university graduates seeking a path to promotion into more prestigious managerial jobs (Ishida 1998).

Another deviation from the patterns of Western countries is the large proportion of petty bourgeoisie (IVa+b) in Korea. This class constitutes about 20 percent of total destination classes in Korea, while fewer than 10 percent of European respondents are in this class. More interestingly, the percentage of petty bourgeoisie in Korea increased slightly from 14.0 in origin to 19.4 in destination, while it declined in European societies. Small proprietors in the commercial and service sector, encouraged by the ease of making ones' own business with small capital, are a distinctive feature of the economic structure in newly developing countries.[12]

The index of dissimilarity (?) reported at the bottom of Table 2 demonstrates well the speed of transformation in class structure in Korea over the past generation. The index of dissimilarity, which shows the difference between the distributions of origin and destination classes, is 46 for the Korean distributions. This value is greater than that for any other nation in our comparative analysis (England 14, France 23, and Sweden 27) and even exceeds the highest European dissimilarity value of 37 for Hungary and 42 for the Japanese distributions reported in Erikson and Goldthorpe's (1992a) work. This strikingly high value

confirms the dramatic transition of Korean society from a society predominantly made up of farmers to an industrial society.

TABLE 3 ABOUT HERE

In order to understand the general direction toward which labor forces have moved, I decomposed the total mobility rates into vertical and non-vertical mobility rates and furthermore I dissected the vertical mobility into upward and downward mobility, following the strategy of Erikson and Goldthorpe (1992a:195).[13] From Table 3 it is evident that in Korea, upward mobility has predominated over downward. Upward mobility rates are relatively high in Korea and, in particular, Korea is distinctive in its low rates of downward mobility. Note differences in rates of downward mobility between Korea (7 percent) and three European nations (17 percent for England, and 12.5 percent for France and Sweden). Consequently, upward mobility in Korea is six times more likely than downward (upward / downward = 6), compared to only two or three times in the three European countries. In fact, the ratio of 6.0 in Korea far exceeds Poland's value of 4.5, the highest ratio among twelve nations examined in the work of Erikson and Goldthorpe (1992a). This result clearly shows the preponderance of upward over downward mobility in Korea and demonstrates the extent to which the Korean class structure has become upgraded as the economy has advanced.

STRUCTURAL MOBILITY

Structural mobility arises because the marginal distributions of origins and destinations differ. As demonstrated by the previous analysis, Korean society is unusual with respect to the high degree of discrepancy between origin and destination distributions. In order to detect more specifically how structural mobility operates within societies, making some occupations grow and others decline (Hout 1989), estimates of origin-specific structural mobility are considered. In contrast to past approaches that considered structural mobility as operating at the general societal level and thus measured a single structural mobility rate for an entire mobility table, Sobel, Hout and Duncan (1985) proposed a new approach for measuring origin-specific structural mobility. Their strategy enables us to understand how the overall discrepancy between distributions of origin and destination classes is generated by structural changes in each specific class.

TABLE 4 ABOUT HERE

Defining structural mobility as those factors that redistribute workers from origins to destinations in a way that is independent of origins (Hout 1989), Sobel, Hout and Duncan's model estimates the α_j parameters of structural mobility, which measure the extent to which structural mobility affects class j. In applying the model, the quasi-symmetry model should fit the data well (see Sobel et al.1985). Hence, I need to test the fit of quasi-symmetry model to the mobility table for each nation before I examine the α_j parameters specifically. The quasi-

symmetry model fits the data quite well for France (the log-likelihood ratio chi-square statistics $L^2 = 11.24$, the degrees of freedom df = 15; p = .73) and Sweden ($L^2 = 15.77$, df = 15; p = .40). The Korean data do not depart significantly from quasi-symmetry ($L^2 = 26.98$, df = 15; p = .03) and the fit for England ($L^2 = 49.52$, df = 15; p = .00) may also be acceptable given its large size of sample (N = 9434). Taking into account that the independence model for England shows $L^2 = 2202.00$ with 36 df, the improvement the quasi-symmetry model achieves is impressive.

Now I turn to examination of structural mobility parameters, once the fit of quasi-symmetry is revealed to be acceptable for all of four nations.[14] In Table 4, the structural mobility multipliers (in log form) log (α_j) measure the extent of structural mobility for each class j. If log (α_j) > 0, it means the growth of class j. By contrast, log (α_j) < 0 indicates the decline of class j (Hout 1989). As might be expected, the most notable feature of structural mobility in Korea is the decline of farmers and farm workers. Korea shows the greatest negative shift, -3.01, in the farm origin category (IVc), followed by Sweden (-2.85), France (-2.45), and England (-1.79). This observation affirms the dramatic redistribution of people from farm origins into other contemporary occupations that has occurred via the process of industrialization in Korea.

While Korea shows the greatest negative structural mobility multiplier for farm origin, at the same time structural mobility has its greatest positive impact on

Korean skilled workers (V+VI) and non-skilled workers (VIIa). Korea displays the highest growth in those two categories (respectively 1.73 and 1.06). Other white-collar positions benefit from structural mobility as well, though the effect is more modest (service class I+II 0.94, non-manual class III 0.82, and petty bourgeoisie IVa+b 0.12). Note, however, that the service class (I+II) in Korea shows relatively low growth compared with the class in three European nations (0.94 for Korea, 1.46-1.74 for the European nations).

The second panel in Table 4 reports the estimates of the structural mobility multiplier when only non-farm origins and destinations are taken into account, excluding agricultural classes. As seen so far, massive movement out of agriculture was a main factor driving social mobility in Korea. In order to see how structural mobility varies from nation to nation if farm workers are removed, I have carried out one further analysis reestimating the structural mobility multipliers for newly constructed 5*5 mobility tables, dropping out the classes of farmers (IVc) and agricultural laborers (VIIb) from the original seven-class classification. In this case, the Quasi-Symmetry model fits the data very well for all of four nations; $L^2 = 10.53$, df = 6, p = .10 for Korea; $L^2 = 9.18$, df = 6, p = .16 for England; $L^2 = 2.24$, df = 6, p = .90 for France; and $L^2 = 4.22$, df = 15, p = .65 for Sweden.

First of all, it is common across all nations that for most categories the values of structural mobility multipliers become much smaller once farm workers are

excluded. Now the categories of service class (I+II) and routine non-manual workers (III) show quite moderate growth in three European nations compared with those in the original seven-class classification (for the service class, estimates are reduced from 1.46 to 0.88 in England, from 1.54 to 0.81 in France, and from 1.74 to 0.91 in Sweden). Moreover, structural mobility coefficients show a negative shift for manual workers (V+VI and VIIa) except for the category of skilled workers in France, compared with positive estimates in the seven-class classification.

Korea also shows a similar change of reduction in the size of coefficients; the structural mobility coefficient declines from a positive shift of 0.94 to a negative shift of -0.04 for the service class (I+II) and from 1.73 to 0.82 for skilled workers (V+VI). It is surprising to find that there is no substantial growth in white-collar occupations (the service class and routine non-manual workers) when only non-farm classes are considered, which implies that in Korea the redistribution of the labor force away from agriculture was a major cause which enabled the expansion of those white-collar occupations.

On the other hand, the second panel of Table 4 suggests the same conclusion as the first panel in respect to cross-national variation in structural mobility. In both panels of the table, it is evident that Korean coefficients for the service class (I+II) are significantly smaller than those in three European nations, whereas coefficients for manual workers (V+VI and VIIa) are larger. This result illustrates

that Korea shows substantially lower growth in the service class (I+II) than the three European nations but higher growth in manual working classes (V+VI and VIIa) regardless of whether movements out of farm origins are taken into account.

The estimates of origin-specific structural mobility found in Table 4 are good reflections of the process of rapid and compressed industrialization in Korea. Structural mobility redistributed the work force from farm origin into industrial classes including the service class, non-manual class, and manual classes. It most negatively affected farmers and contributed to the large extent to the expansion of manual working classes. Although movement out of farming on a massive scale is the largest component of structural mobility in Korea, the expansion of manual workers is not entirely attributable to this redistribution of labor force. We have already illustrated high growth in this category even when we consider only non-farm classes. In short, Korea stands out for its redistribution due to structural mobility, characterized as greatest reductions in the farmer class combined with significant growth in manual workers and moderate growth in the service class.

RELATIVE MOBILITY RATES

In mobility analyses, relative mobility rates are typically represented by odds ratios which show the relative chances that individuals born into two different categories of origin will find a place in one rather than another of two different categories of destination. Expressing the net association between origin and

destination, and freed from the influence of different marginal distributions, relative rates are considered to indicate the level of social openness or the degree of equality of opportunity. The central question to be addressed in this section is how different the Korean experience of class mobility is from those of the European nations with respect to relative mobility or social fluidity, aside from the evidence of Korea's distinct absolute mobility rates.

My first analytical strategy is to apply the core model of social fluidity developed by Erikson and Goldthorpe (1992a) to the Korean mobility table to see to what extent the patterns of mobility in Korea deviate from the core model postulated to represent general patterns of social fluidity in industrial societies. Erikson and Goldthorpe have developed the model as an explicit alternative to social hierarchical approaches in the analysis of social mobility. It is not vertical movement on some social scale but, rather, mobility understood in terms of relational changes that is the focus of the model. In this respect they have designed the model to capture four types of social mobility or immobility, which cannot be adequately explained by a single vertical dimension. These are two "hierarchy" effects, three "inheritance" effects, a "sector" effect and two "affinity" effects. Among the hierarchy effects, the matrix HI1 captures the barriers to mobility crossing hierarchical boundary and HI2 pertains specifically to long-range mobility from the lowest position in the hierarchical division to the highest or vice versa.[15] The inheritance effect (IN1) is designed to measure the

general propensity for immobility across all classes alike. The greater likelihood of immobility of the service class (I+II), petty bourgeoisie (IVa+b) and farmers (IVc) contrasted with the other classes is captured by IN2. The last inheritance effect, IN3, emphasizes the high propensity for immobility of farmers (IVc). The sector effect (SE) represents the barrier to mobility between agricultural and non-agricultural sectors. Finally the affinity effects derive from particular linkages or discontinuities between classes. By considering the difficulty of movement between the service class (I+II) and farm laborers (VIIb), the first affinity effect AF1 represents negative affinity between them. In contrast, AF2 seeks to cover instances where mobility between classes is observed more frequently than otherwise (see design matrices in Appendix).[16]

TABLE 5 ABOUT HERE

Table 5 shows the results of fitting the core model to the Korean mobility data. The independence model (Model 1) assumes that there is no association between classes of origin and destination, which as expected yields very poor fit (36 df, $L^2 = 279.38$; p=.00). I then apply the core model to the Korean mobility table with fixed parameters. In other words, Model 2 postulates that the Korean case has the estimated parameters of the original core model which Erikson and Goldthorpe obtained by using the European data.[17] Even though the model significantly improves upon the independence model, it is still not satisfactory (36 df, $L^2 = 96.81$; p = .00). Finally I relax the assumption that Korea has parameters

estimated by Erikson and Goldthorpe and allow effects to vary so as to be specific to the Korean case. Model 3 with freely estimated parameters provides a substantial improvement in fit compared with previous models and even produces an acceptable fit by the conventional statistical standard (28 df, $L^2 = 41.21$; $p = .05$). For those nations where the core model with nation-specific parameters fails to yield a satisfactory fit, in fact, Erikson and Goldthorpe (1992a) introduce small changes to the original design matrices of the effects to improve the goodness of fit. For the Korean case, in which the model does fit well by conventional statistical criteria, however, we don't have to modify the original design matrices of the effects at all in order to obtain an acceptable fit.[18]

The fact that the core model with parameters estimated separately for the Korean mobility table fits the data very well implies that there might be some significant variation in the Korean mobility regime in terms of the size of the effect parameters. To explore this possibility, I closely examine parameter estimates obtained from the core model applied to the Korean mobility table (Model 3) in comparison with parameters estimated under the original version of the core model by Erikson and Goldthorpe (1992a). Table 6, which shows that for the Korean case four estimates are not significant, indicates that the Korean pattern is much simpler than the pattern of social fluidity of the core model in that it does not require four of the eight effects in the core model.[19]

TABLE 6 ABOUT HERE

The third row in Table 6 reports the effect parameters estimated by refitting the model dropping out four non-significant terms - HI1, IN2, IN3 and AF1. Based on these estimates, I address some interesting features in relative mobility rates the Korean case display. One of the major findings is that the effect HI1 that captures the barriers to mobility across any different level of hierarchy fails to reach significance, while the hierarchy effect HI2 that pertains specifically to long-range mobility is significant. The finding suggests that in Korea substantial barriers to long-range mobility between the highest hierarchical positions and the lowest exist, even though it is not too difficult to move to a nearby class. However, note that in the original core model the propensity for long-range mobility between the service class (which occupies the highest position of the hierarchical division) and non-skilled workers (the lowest position) is not only measured by HI2, pertaining to long-range mobility, but by the sum of two hierarchy terms HI1 and HI2 (HI1 + HI2). In Korea the HI1 + HI2 = -0.57, the same as the value of HI2 alone, because HI1 is non-significant, compared with the core model's value of HI1 + HI2 = -0.64. In other words, despite the lower value of HI2 in Korea than in the core model, there is a greater propensity for long-range mobility between the service class and non-skilled workers, expressed by the sum of the terms HI1 and HI2.

Second, the inheritance effect IN1 -- intended to capture the general immobility effect of all classes -- is the only one of the three inheritance effects that reaches

significance. The effect IN2, which presents the greater likelihood of immobility of the service class (I+II), petty bourgeoisie (IVa+b) and farmers (IVc), and another effect, IN3, that emphasizes the high propensity for immobility of farmers (IVc), are non-significant. The simultaneous non-significance of IN2 and IN3 implies a great deviation of the Korean pattern from the core model. It means that in Korea there is no distinct difference in the level of immobility across all seven classes, which furthermore leads to sharp contrast with the core pattern in the degree of inheritance of each class. Because the term IN1 is relatively strong, despite the non-significance of effects IN2 and IN3, the propensity of immobility for the classes for which immobility is covered by only IN1 – those of routine non-manual workers (III), skilled manual (V+VI), non-skilled manual workers (VIIa), and agricultural laborers (VIIb) is higher in Korea than in the core model. Thus, the propensity for immobility among these classes is about twice what it would be in the absence of this effect ($e^{0.74} = 2.10$), compared with only one-and-a-half times under the core model ($e^{0.43} = 1.54$). By contrast, Korea presents a lower tendency toward immobility in the service class (I+II) and petty bourgeoisie (IVa+b) because the non-significance of the term IN2, referring to immobility in the service class, petty bourgeoisie and farmers alike, makes the sum of two immobility effects (IN1+IN2) lower in Korea than in the core model. For example, the propensity for immobility of the Korean service class and petty bourgeoisie is only twice as high as it would be in the absence of effect

($e^{IN1+IN2=0.74+0.00} = 2.10$), whereas the corresponding propensity is roughly three-and-a-half time under the core model ($e^{IN1+IN2=0.43+0.81=1.24} = 3.46$). Likewise for the farmers, where the term IN3, which specifically represents the higher tendency for immobility of farmers, as well as IN1 and IN2 apply, class immobility is only about two times what it would have been in the absence of those immobility effects in Korea, compared with more than seven times under the core model ($e^{0.74} = 2.10$ and $e^{1.98} = 7.24$ respectively).[20]

Third, according to Table 6, Korea displays a weaker sector effect (SE), which refers to the extent of mobility between agricultural and non-agricultural sectors. While the propensity for mobility between sectors is about a third ($e^{-1.03} = 0.36$) of mobility within sector for the core model, the figure increases to about a half ($e^{-0.79} = 0.45$) for the Korean case. In other words, the probability of cross-sectoral mobility is apparently higher in Korea. The weak sector effect would seem to reflect the characteristics of industrialization in Korea. As explained earlier, the Korean case is especially distinctive in the extent of movements out of farming into other occupations in non-agricultural sectors.

Finally, the non-significance of the AF1 term implies that in Korea there are no specific barriers to mobility between the service class and agricultural workers when other effects relevant to such movement are controlled.[21] Consequently, the propensity for mobility between these two classes, indicated by the sum of the four relevant effects, HI1, HI2, SE, and AF1, is about one-fourth of

what it would be in the absence of those terms in Korea ($e^{HI1+HI2+SE+AF1} = e^{0.00-0.57-0.79=0.00=-1.36} = 0.26$), whereas under the core model, the sum of the effects is only one-tenth what it would be in their absence ($e^{HI1+HI2+SE+AF1} = e^{-0.22-0.42-1.03-0.77=-2.44} = 0.09$). Taken together with the finding of a greater tendency for mobility between the service class and non-skilled workers, the result implies that in Korea long-range mobility pertaining to movements between the most desirable position (the service class) and the least desirable ones (non-skilled workers and agricultural workers) occurred more frequently than under the core model.

In sum, although the core model fits the Korean data satisfactorily, the Korean pattern is found to be much simpler in that four matrices, HI1, IN2, IN3, and AF1, fail to be significant. This is strong evidence for the deviation of the Korean society from the core model, given that there was no case which displayed this number of non-significant effects among the European nations to which Erikson and Goldthorpe applied the model. In particular, the overall impression emerging from the above analyses is that Korea appears to be a society with relatively high levels of fluidity. Although it is true that modestly higher propensities for immobility are found within the Korean routine non-manual class, skilled and non-skilled working classes, and farm laborers, this does not alter the conclusion pointing to high Korean social fluidity. The propensity for class immobility within the service class and small proprietors is significantly lower in Korea and the

difference in the degree of farmers' inheritance between Korea and our three European nations is especially impressive. Furthermore, long-range movements between the lowest position in the hierarchical division and the highest one occur more frequently in Korea than under the core model. In Korea, a weaker barrier to intergenerational mobility between agricultural and non-agricultural classes is another indicator of high levels of societal openness.

COMPARISONS OF RELATIVE MOBILITY RATES

To assess more conclusively the extent to which Korea shows greater social fluidity, I conduct a more parsimonious comparison in order to illustrate cross-national variations in the origin-destination association that indicate social fluidity. Here I fit a set of models for three-way tables with class of origin, destination class, and nations. By comparing the goodness of fit of the model that assumes the common pattern of mobility across countries and the model that allows the level of fluidity to vary across nations, I address the issue of Korean societal openness. First I apply the model of common social fluidity and then fit the log-multiplicative layer effect model (Xie 1992), also called the "uniform difference" model (Erikson and Goldthorpe 1992a) to mobility tables for England, France, Sweden, and Korea.

TABLE 7 ABOUT HERE

Model 1 in Table 7 is the conditional independence model, which functions as a

baseline model. The model that postulates no association between classes of origin and destination given nations yields a very poor fit ($L^2 = 5146.53$ with 144 df). The model of common social fluidity, Model 2 in Table 7, states that across four mobility tables the strength of the origin-destination association, which represents the overall level of fluidity, is the same. It provides a significant improvement upon Model 1, reducing L^2 to 203.02 with 108 degrees of freedom.

I then turn to the log-multiplicative layer effect model to test whether the model that allows varying association between origin and destination across nations produces a substantially better fit than the model of common fluidity. The log-multiplicative layer effect model posits that the extent of association between origin and destination in the *k*th table is estimated by the log-multiplicative product of the overall association parameter common to all tables and a *k*th table-specific deviation parameter.[22] The greater the value of table-specific deviation parameter (ϕ_k), the greater the strength of association between origin and destination, which also implies less fluidity of social mobility. Thus, by comparing the parameter (ϕ_k) across nations, we can assess the levels of social fluidity.

The last row of Table 7, which reports the results of the log-multiplicative layer effect model (Model 3), reveals that this model fits the data significantly better than the common social fluidity model (Model 2). Model 3 reduces L^2 by about 54 points using only three more degrees of freedom, from 203.02 in Model 2 to

149.08 in Model 3. The more negative BIC statistic of Model 3 in comparison to Model 2 (-878 vs.-854)[23] also confirms the conclusion that the log-multiplicative layer effect model is a better fit than the common social fluidity model, which suggests significant differences in the level of origin-destination association across our four nations.

Since model comparisons have shown that our four nations differ in the strength of the overall origin-destination association, it is interesting to examine cross-national differences in the extent of social fluidity by comparing country-specific deviation parameters (ϕ_k) estimated under the log-multiplicative layer effect model (Model 3).[24] As stated earlier, a larger parameter indicates a stronger association between origin and destination, and a lower fluidity of social mobility. The estimates of the deviation parameters in Table 7 reveal that Korea shows a weaker origin-destination association than even Sweden, which is considered to have more equal relative rates of class mobility than the other two countries, England and France (Erikson, Goldthorpe, and Portocaro 1982). These findings imply a greater overall fluidity in Korea, confirming our previous conclusion based on examination of estimated parameters.

SUMMARY AND DISCUSSION

I have examined the Korean mobility regime in comparative perspective, utilizing the core model of Erikson and Goldthorpe as a reference for comparison. First,

Korea displayed distinctive features in class distribution and upward mobility, which are quite different from those seen in the European countries of England, France, and Sweden. Dramatic change in occupational structure reflecting the rapid and compressed process of industrialization led to striking dissimilarity between distributions of origin and destination classes. In this process of change, upward mobility significantly predominates over downward. In particular, the extent of upward mobility expressed by the ratio of upward over downward mobility exceeds even the highest levels among European nations. As the analysis of structural mobility rates shows, these findings reflect the remarkable rate of decline of agricultural classes and corresponding expansion of industrial classes.

Korea has distinctive relative mobility rates as well. Applied to the Korean mobility table with freely estimated parameters, the core model yields a satisfactory fit, which would suggest that the model captures well the patterns of fluidity within the Korean class structure. In considering the effect parameters estimated from the model, however, it is obvious that Korea shows substantial deviations: the non-significance of four effects, HI1, IN2, IN3, and AF1, among eight parameters in the core model suggest that the Korean case varies from the European pattern postulated by the core model. The implication of this non-significance is that in Korea the barriers to between-sector movements and long-range mobility between the highest positions in the hierarchy and the lowest ones are substantially weaker than under the core model. In addition, the service class

(I+II), petty bourgeoisie (IVa+b), and farmers (IVc) in Korea have lower propensities for immobility than their counterparts in our European societies. Finally, comparisons of the deviation parameters (ϕ_k) estimated under the log-multiplicative layer effect model confirm the conclusion that the overall level of fluidity appears higher in Korea.

Since previous mobility studies have so far documented substantial cross-national commonality in relative mobility rates, the Korean case provides an interesting stimulus for further research. Korea does display distinctive variation in relative mobility rates as well as absolute rates. More importantly, it does show greater social fluidity or greater equality in relative mobility chances, and weaker associations between class origins and destinations. Even if the empirical evidence revealed from analyses of Korean society is not enough to refute the argument for cross-national commonality in relative rates of intergenerational mobility, it at least requires an explanation of why Korea is distinctive, and in particular, why the level of fluidity in Korea is higher than in other European societies. As Goldthorpe (1999) proposes, the theory of cross-national invariance in relative rates should attempt to explain the conditions under which the tendency toward invariance may not be prevalent in order to extend its relevance.[25]

Many comparative studies of mobility have demonstrated that the level of economic development or industrialization is not positively related to the degree of societal openness (Erikson and Goldthorpe 1992a; Wong 1996). In a sense, my

results are consistent with prior results because the greater equality in mobility chances in Korea cannot be explained by the higher performance of its economy. We must find other major factors to account for possible cross-national differences in relative mobility rates.

Earlier, I described three features of structural change which occurred in Korea over the last generation: strikingly fast transformation of the occupational structure corresponding to changes which occurred over one century in European societies, relative equality of income distribution across classes, and remarkable educational expansion. It should be noted that I am not claiming that those factors have caused greater openness in Korea. It would be erroneous to hold that the degree of income inequality was significantly higher in our three European nations than in Korea. In addition, some studies conclude that an increase in educational equality per se does not provide greater social fluidity (Goldthorpe 1999). With this caution, I simply propose examining closely how those factors interacted with each other or with other potential forces in Korea, thus resulting in a high degree of equality in relative mobility chances.

In this regard, comparative research incorporating Japan and Taiwan as well as Korea, which have experienced relatively similar processes of economic development, would open new insights into cross-national differences in the level of social fluidity. Generally, these three East Asian nations share three characteristics - dramatic change in occupational structure, relative low inequality

of income distributions, and impressive educational expansion - cited as potentially favorable to greater fluidity of social mobility in Korea. In fact, some empirical studies have discovered that the degree of openness in Japan is substantially greater than elsewhere (Yamaguchi 1987; Wong 1990). Consequently, close investigations of mobility patterns in this area may determine how characteristics of the East Asian model of economic development are associated with high degree of social fluidity. That is, intensive comparative analyses across three East Asian countries may give us a more systematic understanding of the conditions under which relative rates show greater equality.

APPENDIX

MATRICES FOR THE CORE MODEL OF FLUIDITY

HI1

1	2	2	2	2	2	2
2	1	1	1	1	2	2
2	1	1	1	1	2	2
2	2	2	2	2	1	1
2	1	1	1	1	2	2
2	2	2	2	2	1	1
2	2	2	2	2	1	1

HI2

1	1	1	1	1	2	2
1	1	1	1	1	1	1
1	1	1	1	1	1	1
2	1	1	1	1	1	1
1	1	1	1	1	1	1
2	1	1	1	1	1	1
2	1	1	1	1	1	1

IN1

2	1	1	1	1	1	1
1	2	1	1	1	1	1
1	1	2	1	1	1	1
1	1	1	2	1	1	1
1	1	1	1	2	1	1
1	1	1	1	1	2	1
1	1	1	1	1	1	2

IN2

2	1	1	1	1	1	1
1	1	1	1	1	1	1
1	1	2	1	1	1	1
1	1	1	2	1	1	1
1	1	1	1	1	1	1
1	1	1	1	1	1	1
1	1	1	1	1	1	1

IN3

1	1	1	1	1	1	1
1	1	1	1	1	1	1
1	1	1	1	1	1	1
1	1	1	2	1	1	1
1	1	1	1	1	1	1
1	1	1	1	1	1	1
1	1	1	1	1	1	1

SE

1	1	1	2	1	1	2
1	1	1	2	1	1	2
1	1	1	2	1	1	2
2	2	2	1	2	2	1
1	1	1	2	1	1	2
1	1	1	2	1	1	2
2	2	2	1	2	2	1

AF1

1	1	1	1	1	1	2
1	1	1	1	1	1	1
1	1	1	1	1	1	1
1	1	1	1	1	1	1

AF2

1	2	2	1	1	1	1
2	1	1	1	1	1	1
2	1	1	2	1	1	1
1	1	2	1	1	2	1

1 1 1 1 1 1 1 1 1 1 1 1 1 2 1
1 1 1 1 1 1 1 1 1 1 1 1 2 1 1
2 1 1 1 1 1 1 1 1 1 1 1 1 2 1

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NOTES

1. Of course, differences among three East Asian countries that the "East-Asian Model" label masks should not be ignored. For example, there has been a noticeable difference between Korea and Taiwan in policy for the agricultural sector. In addition, conglomerate business groups (Chaebol) played a major role for industrial development in Korea, while small business led the Taiwanese economic growth (Koo 1987). Consequently, it would be another interesting topic to explore diversity in mobility patterns among East Asian societies.

2. Mobility analyses traditionally distinguish between absolute and relative mobility rates. The former usually refers to total rates, inflow rates, and outflow rates expressed by percentage, while the latter means the difference in the likelihood of finding a place in one rather than another of two different categories of destination between individuals born into two different origin categories. In a very influential study, Featherman, Jones, and Hauser (1975) claimed that relative rates of intergenerational mobility display a substantial degree of similarity across industrial societies, even though absolutes rates vary as a reflection of nation-specific marginal distribution of occupations.

3. The simultaneous expansion of blue and white-collar workers is one of the representative characteristics of Korean late industrialization. That is, Korean industrialization is characterized as a combined process of the nineteenth-century

European industrialization pattern (increase in manual workers), and the twentieth-century pattern (increase in white-collar occupations) (Koo 1990).

4. The trend in the Gini index, a rough indicator of income inequality, is not linear in Korea. According to a report, the coefficient that had declined slightly from 0.34 of 1965 to 0.33 of 1970 increased substantially between 1970 and 1975 (0.39). After that, the Gini index remained constant, showing 0.389 in 1980 (Koo 1985). Another study also reports that there has been no linear trend in the Gini coefficient; it was 0.34 in 1965, 0.39 in 1976, and 0.36 in 1982 (see Table 1-5 in Leipziger, Dollar, Shorrocks, and Song 1992). Here it should be remembered that over the period, the Gini index in Korea mostly remained in the 0.3-0.4 range, which indicates relatively low level of income inequality by international standards (Barrett and Chin 1987).

5. As in many societies, wealth distribution in Korea is more unequal than income distribution. In particular, concentration of wealth through land and real estate holdings is a major factor leading to wealth inequality (Leipziger et al., 1992). Thus, it should be noted that relatively equal income distribution in Korea may not reflect well economic inequality associated with more unequal distribution of wealth.

6. See Erikson and Goldthorpe (1992a: 3-9) for a short introduction to the basic arguments of ‘the liberal theory of industrialization’ regarding the patterns of social mobility in industrial societies.

7. The SIS was a national survey excluding Cheju Island, designed and administered by several social scientists with the support of the Korean Social Science Association. It sampled only males and females who were economically active at the time of survey. The data were gathered by interviewing individuals chosen by multistage sampling technique. See Whang (1992), the final report of the survey, for details of the sampling procedures.

8. I thank Sang-su Chang who kindly helped construct the seven-class classification of origins and destinations and even provided me the mobility table of the weighted cases. Following his suggestion, instead of the actual cases I use the weighted cases by gender, education, and occupation based on the 1988 Korean census of population. This weighted mobility table was originally analyzed by Chang (1998). The intergenerational mobility table used in this study can be obtained from the author upon request.

9. Pointing out the limitation of the classification schema used by Erikson and Goldthorpe, Hout and Hauser (1992) favored more refined classification to capture detailed patterns of social mobility. In response to such a criticism, Erikson and Goldthorpe (1992a) defended their seven-category version by arguing that more detailed classifications could not achieve a satisfactory standard of cross-national comparability, which should be achievable at only the level of the seven-class schema. Given the relatively small size of cases (1,452) and lack of more detailed information on occupational conditions in the Korean data, the

seven-category version of the class schema seems to be best for the high quality of cross-national comparability in the same line with Erikson and Goldthrope.

10. The three mobility tables were originally analyzed by Erikson, Goldthorpe, and Portocarero (1982), and Hauser (1984) reanalyzed the data. There are only minor differences between the mobility tables for England, France, and Sweden reproduced by Hauser and the original tables used by Erikson, Goldthorpe, and Portocarero. See Hauser (1984) for more details of data for England, France, and Sweden.

11. It seems problematic to compare the Korean case of 1990 with three European nations of the 1970s. It may not cause a serious problem, however, considering that most comparative research dealing with the more recent data of a society has the core model derived from the European data of the 1970s as a reference. For example, within the core model framework Goldthorpe, Yaish, and Kraus (1997) investigate the Israeli patterns of mobility using data collected in 1991-1992.

12. It is interesting to find similar patterns of class distributions for the Japanese case. In their analysis of the Japanese mobility pattern, Erikson and Goldthorpe showed larger proportions of non-manual workers and working proprietors in Japan than in any of European nations they examined. The question of how these features in class distributions are associated with the late industrialism would be interesting, but it is beyond the scope of this study.

13. Erikson and Goldthorpe divide the seven classes into three groups based on their positions in the hierarchical division: the service class (I+II) forms the highest position; non-skilled workers (VIIa) and farm laborers (VIIb) occupy the lowest hierarchical division. The intermediate position is covered by remaining classes, those of routine non-manual workers (III), petty bourgeoisie (IVa+b), and skilled workers (V+VI). Farmers constitute the lowest division as a class of origin but the intermediate as a class of destination. In this context, consequently, among total mobility the vertical mobility refers to any movements crossing different levels of hierarchical division. Non-vertical mobility means movements between classes on same levels in the hierarchical division. For vertical mobility, movement toward higher positions is considered upward mobility and downward movement into lower classes is regarded as downward mobility. For details, see Erikson and Goldthorpe (1992a: ch.6).

14. I thank Raymond Sin-Kwok Wong for his helpful advice on computer programming for estimating structural mobility.

15. Despite their emphasis that social mobility should be understood in relational terms among social classes rather than on a vertical scale of social hierarchy, Erikson and Goldthorpe also recognize hierarchical aspects of their class schema. According to their relative advantages they offer as classes of origin and their relative accessibility they offer as classes of destination, seven classes of Erikson and Goldthorpe's class schema are classified as three different groups in

terms of their positions in the hierarchical division (Erikson and Goldthorpe 1992a: 123-25). The specific position of each class in the hierarchical division is explained in note 13. In the end, the matrix HI1 captures the barriers to movements across any different level of the hierarchy. On the other hand, the second matrix HI2 pertains to long-range mobility, crossing two steps, from the lowest of the three divisions to the highest or vice versa.

16. The core model of social fluidity can be written as follows;

$$\text{Log } F_{ij} = \lambda + \lambda_i^{O} + \lambda_j^{D} + \lambda_{a(i,j)}^{HI1} + \lambda_{b(i,j)}^{HI2} + \lambda_{c(i,j)}^{IN1} + \lambda_{d(i,j)}^{IN2} + \lambda_{e(i,j)}^{IN3} + \lambda_{f(i,j)}^{SE} + \lambda_{g(i,j)}^{AF1} + \lambda_{h(i,j)}^{AF2}$$

where F_{ij} is the expected frequency in cell ij of mobility table, λ is a scale factor, λ_i^{O} and λ_j^{D} are respectively the main effects of origin and destination, while the remaining eight terms from $\lambda_{a(ij)}^{HI1}$ to $\lambda_{h(ij)}^{AF2}$ represent the effects set out above.

17. That is, the model constrains the Korean case to have the following estimates of effects; HI1 = -0.22, HI2 = -0.42, IN1 = 0.43, IN2 = 0.81, IN3 = 0.96, SE = -1.03, AF1 = -0.77 AF2 = 0.46

18. Despite an acceptable fit of the core model with nation-specific parameters for the Korean data, Chang (1998) introduced some changes to the original design matrices, following the strategy that Erikson and Goldthorpe adopted for countries of poor fit. His modifications to the core model changed the originally non-significant AF1 effect to be significant and strong as much as in the core model, and thus ultimately led him to conclude that the Korean mobility pattern

was not significantly different from the core model. Even though we used the same data, Chang's claim stands in contrast to my conclusion which emphasizes distinctiveness of Korean society, based on the model without introducing arbitrary modification of original matrices.

19. I thank a reviewer for suggesting me to emphasize clear deviations the Korean case displays in regard of parameter estimates.

20. In fact, the additive odds for farmers' inheritance are the sum of four effect terms in the core model. As well as three immobility effects–those of IN1, IN2, and IN3–the HI1 term, capturing the barriers to movement across any level of the hierarchy, applies to the propensity for immobility of the farmer class. Thus, the additive odds for immobility of Korean farmers are 2.10 ($e^{HI1+IN1+IN2+IN3=0.00+0.74+0.00+0.00}=2.10$) the same as the odds for the term IN1, because the term HI1, IN2, and IN3 are revealed to be non-significant. On the other hand, the corresponding odds under the core model are 7.24 ($e^{HI1+IN1+IN2+IN3=-0.22+0.43+0.81+0.96=1.98}=7.24$).

21. In the core model, two hierarchy matrices HI1 and HI2, one sector SE, and one negative affinity AF1 are applied to a mobility between the service class and agricultural workers. In Korea, the term AF1 is not significant when other three terms are controlled.

22. For more detailed explanation of the log-multiplicative layer effect model, see Xie (1992).

23. As an alternative way to model comparison with large samples, the BIC statistic is calculated as:

$$BIC = L^2 - df*\log N,$$

where L^2 is the log-likelihood ratio statistic, df is the degrees of freedom, and N is the number of samples. In general, the model with the more negative BIC statistic is preferred (Raftery 1995).

24. Following Xie (1992), the ϕ parameters are normalized so that $S\phi_k^2=1$.

25. After outlining a theory of social mobility to account for temporal constancy and cross-national commonality in relative rates of intergenerational mobility, Goldthorpe (1999) proposes to extend the theory so as to specify the conditions under which some significant variation from this dominant tendency toward invariance can occur. In particular, he attempts to deal with instances which show greater social fluidity.

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TABLE 1. Occupational Structure in Korea, 1960-1989

Year	Total	Pro & Admin	Clerical	Sales	Service	Agricul	Production
1989 (17,511,000)	100.0	8.3	12.4	14.7	10.7	19.3	34.5
1985 (14,935,000)	100.0	7.3	11.5	15.4	10.9	24.6	30.3
1980 (13,706,000)	100.0	5.3	9.2	14.5	7.9	33.9	29.1
1975 (11,830,000)	100.0	3.5	6.3	12.9	7.2	46.0	24.1
1970 (9,745,000)	100.0	4.7	5.9	12.3	6.5	50.3	20.3
1965 (8,522,000)	100.0	2.8	4.0	11.9	6.5	58.5	16.3
1960 (8,521,000)	100.0	2.4	2.6	6.3	1.9	78.9	7.9

Note: Total percentage in each year may not be 100 because of rounding errors.
Prof & Admin= professional, Technical, Administrative and Managerial Workers
Agricul=Agricultural and other Primary Workers

Source: *Korea Statistical Yearbook* (1961)
Annual Report on the Economically Active Population Survey (1973, 1985, 1991)

TABLE 2. Distributions of Classes of Origin and Destination

	Korea	England	France	Sweden
Origin				
I+II	4.8	13.2	12.1	10.6
III	7.3	7.4	8.2	3.5
IVa+b	14.0	9.6	14.5	11.2
IVc	65.2	4.5	25.9	25.9
V+VI	2.0	39.0	18.2	23.6
VIIa	5.4	22.8	14.6	19.9
VIIb	1.3	3.6	6.5	5.3
Destination				
I+II	10.3	25.1	22.3	24.5
III	16.2	9.2	9.8	7.8
IVa+b	19.4	7.8	9.8	7.9
IVc	19.4	1.6	10.7	5.3
V+VI	14.7	32.8	23.3	30.1
VIIa	18.8	21.9	20.8	22.5
VIIb	1.0	1.6	3.3	2.0
Cases	1452	9434	4769	2094
Dissimilarity[a]	46.0	13.8	23.1	27.2

Note: Percentages may not sum to 100 because of rounding errors.
I+II = Service class; III = Routine non-manual workers; IVa+b = Petty bourgeoisie; IVc = Farmers; V+VI = Skilled workers; VIIa = Non-skilled workers; VIIb = Agricultural laborers
[a] Dissimilarity between origins and destinations

Table 3. Cross-National Comparisons of Absolute Mobility Rates

	Total[a]	Vertical[b]	Non - Vertical[c]	Vertical / Non - Vertical[d]	Up[e]	Down[f]	Up / Down[g]
England	64.5	49.7	14.7	3.38	32.3	17.4	1.86
France	65.1	44.5	20.6	2.16	32.0	12.5	2.56
Sweden	72.7	54.1	18.6	2.91	41.6	12.5	3.33
Korea	70.8	49.1	21.7	2.26	42.1	7.0	6.01

Note: Due to rounding errors, total mobility rate may not be exactly same as the sum of vertical mobility and non-vertical mobility.
[a] Total Mobility rate is the percentage of cases located at cells off the main diagonal of the mobility table.
[b] Vertical mobility refers to any movements crossing different levels of hierarchical division among total mobility.
[c] Non-vertical mobility means movements between classes on the same levels in the hierchical division among total mobility
[d] Ratio of vertical mobility to non-vertical mobility
[e] Among vertical mobility, movement toward higher positions is upward mobility
[f] Among vertical mobility, movement into lower positions is downward mobility
[g] Ratio of upward mobility to downward mobility

TABLE 4. Estimates of Structural Mobility Multipliers, Log (a_j)

	Class I+II	III	IVa+b	IVc	V+VI	VIIa	VIIb
All Origins and Destinations							
England	1.46	0.79	0.24	-1.79	0.20	0.28	-1.18
France	1.54	0.77	-0.08	-2.45	0.82	0.66	-1.23
Sweden	1.74	1.46	-0.01	-2.85	0.67	0.32	-1.33
Korea	0.94	0.82	0.12	-3.01	1.73	1.06	-1.65
Non-farm Origins and Destinations							
England	0.88	0.20	-0.34	-	-0.40	-0.34	-
France	0.81	0.03	-0.79	-	0.07	-0.12	-
Sweden	0.91	0.62	-0.82	-	-0.17	-0.54	-
Korea	-0.04	-0.01	-0.95	-	0.82	0.18	-

Note: Estimates are from Sobel, Hout, and Duncan (1985)'s quasi-symmetry model. See text for further explanation of the model.
I+II = Service class; III = Routine non-manual workers; IVa+b = Petty bourgeoisie; IVc = Farmers; V+VI = Skilled workers; VIIa = Non-skilled workers; VIIb = Agricultural laborers

TABLE 5. Fit of the Core Model to the Korean Mobility Table

Model	L^2	d.f.	p	rL^{2a}	I.D.[b]
1. Independence	279.40	36	0.00	0.00	14.81
2. Fixed parameters from the core model	96.81	36	0.00	65.35	7.38
3. Freely estimated parameters	41.21	28	0.05	85.25	4.04

[a] rL^2 indicates the percentage of L^2 reduced by a more complex model from a baseline model.
[b] I.D. is the index of dissimilarity, which indicates the proportion of cases mis-classified.

TABLE 6. Estimated Parameters of the Korean Mobility Table and of the Core Model

	HI1	HI2	IN1	IN2	IN3	SE	AF1	AF2
(1)								
Korea-1[a]	-0.03*	-0.52	0.66	0.13*	0.06*	-0.75	-1.95*	0.24
	(0.09)	(0.19)	(0.16)	(0.23)	(0.55)	(0.26)	(1.78)	(0.11)
Korea-2[b]	–	-0.57	0.74	–	–	-0.79	–	0.23
		(0.18)	(0.11)			(0.14)		(0.10)
(2) Core	-0.22	-0.42	0.43	0.81	0.96	-1.03	-0.77	0.46

Note: Values in parenthese are standard errors. Standard errors are not available for estimates from the core model.
* non-significant estimate at the 5 percent level
a Estimates obtained from the model with freely estimated parameters (Model 3 in Table 5).
b Estimates obtained by refitting Model 3 in Table 5, dropping out four non-significant effects.

Table 7. Fit of Models of Mobility Tables in England, France, Sweden, and Korea

Model	L^2	d.f.	BIC	ϕ_1 (Eng)	ϕ_2 (Fra)	ϕ_3 (Swe)	ϕ_4 (Kor)
1. Conditional Independence	5146.53	144	3738	—	—	—	—
2. Common Social Fluidity	203.02	108	-854	—	—	—	—
3. Log-Multiplicative Layer Effect	149.08	105	-878	.570	.586	.433	.381

Note: The ϕ_k parameters are normalized so that $\sum \phi_k^2=1$.
Eng: England Fra: France Swe: Sweden Kor: Korea

Center for Demography and Ecology
University of Wisconsin
1180 Observatory Drive Rm. 4412
Madison, WI 53706-1393
U.S.A.
608/262-2182
FAX 608/262-8400
comments to: hypark@ssc.wisc.edu
requests to: cdepubs@ssc.wisc.edu