Intragenerational Occupational Mobility in South Korea, 1998-2017

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이 연구는 마이크로 계급(micro-class) 접근을 활용하여 1998-2017년 기간 동안의 세대내 직업을 연구한다. 최근 연구에 따르면, 미국사회의 세대내 직업이동의 증가는 사회불평등이 세대간 사회이동에 미치는 부정적인 영향을 어느 정도 상쇄하고 있다. 한국사회의 상대적으로 강한 내부노동시장과 성별화된 노동시장 참가 패턴으로 인해, 한국의 세대내 직업이동 패턴은 미국과는 다를 것으로 예상된다. 예비적인 분석결과는 다음과 같다. 첫째, 세대내 직업이동 패턴에 큰 변화가 발견되지 않는다. 같은 기간 동안 소득불평등이 증가했음을 고려할 때, 이와 같은 결과는 불평등과 사회이동의 관계를 재고할 필요가 있음을 시사한다. 둘째, 남성의 세대내 이동은 연령이 증가함에 따라 안정화되는 반면에 여성에게서는 이러한 안정화 경향이 발견되지 않는다. 흥미롭게도, 여성의 경우에는 매크로 계급 (macro-class) 경계를 넘어서는 이동이 높게 나타나고 있다. 성별 직업분리 및 가족형성과 관련된 부담이 여성에게 집중되는 경향을이러한 성별차이의 원인으로 해석할 수 있다. 이러한 결과가 불평등, 사회이동, 성별화된 노동시장 참가 패턴에 갖는 함의를 논의한다.

주요용어: 세대내 직업이동, 불평등, 젠더, 생애과정, 노동패널

I. Motivation: Intragenerational mobility, micro-class approach, and gender perspective in South Korea

1. A missing link for the puzzle of rising inequality but ‘constant flux’ of contemporary Korea?

Since the mid-1990s, South Korea (hereafter Korea) has experienced a substantial increase in economic inequalities due to various market, institutional, and demographic

factors. Among the multiple concerns accompanied by these unprecedented socioeconomic changes, the public's anxiety about the possibility of declining social mobility has been the most notable, leading into many public and policy discourses on the relationship between rising inequality and social mobility. Since it is known that the level of social mobility is lower in countries with higher level of income inequality as the "Great Gatsby Curve" illustrates (Corak 2013; Krueger 2012), they are concerned with Korea, once known for its rapid economic growth with a relatively equal income distribution, being a country of unequal and stratified socioeconomic opportunities in the midst of rising inequality.

According to recent studies on the social mobility of Korea, however, there exist some myth and truth about Korean people's perception toward the declining social mobility for recent generations. Based on empirical findings comparing intergenerational occupational mobility by birth cohorts, Kye and Hwang (2016) show that although the chances for upward mobility substantially decreased for recent cohorts, the decline was primarily due to the fall in a 'structural' mobility not a pure or 'exchange' mobility. In other words, in spite of the rapid increase in economic inequalities for the last two decades, the net association between parent's and children's socioeconomic status did not change much once accounted for by a shift in occupational structures across different birth cohorts. The familiar story of a 'constant flux' or a 'trendless fluctuation' in the study of social mobility was confirmed once more in the context of Korea with rising inequality (Erikson and Goldthorpe 1992; Featherman, Jones and Hauser 1975; Sorokin 1959).

The puzzle is then how this seemingly contradictory phenomena is possible. Is the argument proposed by the 'Great Gatsby Curve' wrong? Or are we missing a hidden but crucial link that might connect a rising inequality and constant intergenerational social mobility? Jarvis and Song (2017) argues that the missing link could be an intragenerational social mobility, which is an individual's career mobility in the labor market. Motivated by a conventional status attainment model in the stratification research (Blau and Duncan 1967), they see that the transmission of socioeconomic status between generations is a sequential process that involves at least three steps: educational attainment, the school-to-work transition, and within-career mobility. Parent's socioeconomic status is transmitted to their children primarily through an investment in children's educational attainment, which in turn significantly affects their first job, and they reach their own socioeconomic status through within-career mobility. In this chained process, rising inequality tend to solidify the associations in the first two steps, but its effect on the final step is rather unknown but assumed, warranting further empirical

investigations. In case of the United States, a rising intragenerational occupational mobility trend has forestalled declines in intergenerational occupational mobility despite recent increases in inequality (Jarvis and Song 2017). Similar patterns may be observed in Korea given that increasing job instability since the severe economic crisis in the late 1990s was associated with reduction in inequality in occupational status (Choi 2016).

Alternatively, the trend of inequality may be disconnected with that of intergenerational and intragenerational mobility. In principle, distribution is one thing, and mobility is another (Hout 2004). Empirical evidence suggests that there is no clear trend in intergenerational occupational mobility (Kye and Hwang 2016), association between family background and educational attainment (Park 2007), and association between education and first occupation (Chang 2008). Legacies of strong labor markets also imply stable intragenerational mobility although these employment practices were certainly weakened since the economic crisis in the late 1990s (Kye 2008). We will investigate intragenerational mobility patterns in Korea for the last decades applying the recent methodological development in mobility research, a multi-level class scheme (Jonsson et al. 2009; Jarvis and Song 2017). This will contribute to understanding the relationship between inequality mobility in a different context.

2. Intragenerational mobility and multilevel class scheme

There are two conventional measures to examine social mobility: categorical forms (e.g., classes) and gradational terms (e.g., socioeconomic status or prestige scores). Both measures are utilized to understand how inequality is reproduced (intergenerational) or how social status changes along the individual life courses (intragenerational). The categorical approach assumes that social class represents the structure of inequality while the gradational perspective focuses on social hierarchies which are represented by occupational prestige scores or socioeconomic standings. Despite their different schemes (categorical vs. gradational), both approaches use occupations as a starting point to identify individual social position. However, they tend to overlook detailed occupational characteristics either by aggregating them to the small number of classes or by reducing them to numerical scores of occupational prestige (Jonsson et al. 2009; Weeden and Grusky 2005).

Recent studies point out shortcomings of these conventional approaches and suggest a micro-class approach as an alternative to detect unexplored aspects of social mobility mechanism (Weeden and Grusky 2005; Grusky and Weeden 2001; Jonsson et al. 2009). While traditional class studies consider occupation as mere technical positions in the labor

market, the micro-class perspective assumes occupation is a meaningful social group that directly decides individual life chances and social status (Jonsson et al. 2009; Weeden and Grusky 2005). For example, Jonsson and colleagues (2009) emphasize the role of occupations in social mobility. They argue that there are occupation-specific forms of human, economic, cultural and social resources and that social reproduction takes on principally a micro-class form rather than a big-class form. Weeden and Grusky (2005) also argue that big-class assumption ignores the role of occupations in the mobility process and they maintain that "occupations are better suited than big classes for the new microlevel agenda of explaining individual-level behaviors and attitudes" (Weeden and Grusky 2005: 142). While these studies did not explicitly address the role of occupation in the intragenerational mobility, we could expand their arguments that occupations shape individual experience in the labor market and formulate occupation-specific skill, knowledge, culture, and networks.

In this study, we use a multilevel class scheme to examine intragenerational social mobility in Korea. Jonsson and colleagues (2009) suggest a nested class scheme that integrates the big-class and micro-class approaches. This class scheme consists of four nested levels of occupational structure: micro-, meso-, macro-, and sectoral level. By integrating big and micro-class approaches, the multilevel class scheme allows us to understand how mobility processes differently operate at every level of occupational structure. We can examine different mobility rates at different levels of occupational aggregation and this allows us to understand the directions and the extent of intragenerational mobility at each level of occupational structure (Jonsson et al. 2009; Jarvis and Song 2017).

The multilevel class scheme provides an additional advantage. Jonsson and colleagues (2009) point out that the relative strength of micro- and macro- mobility in a given society greatly depends on institutionalized labor market practices. It depends on whether the labor market encourages individuals to accumulate occupation-specific capital or class-wide capital. This analytical framework provides us with a chance to examine how mobility trends differ at different levels of aggregation when the macro-economic trends change. It is also a useful theoretical ground to compare cross-national differences of mobility trend. In sum, we seek to draw the complete picture of intragenerational mobility in Korea by adopting the multilevel class scheme, which is particularly useful to consider different mechanisms of mobility trend at every aggregation of occupational structure and macro-economic changes in Korean society.

3. Gender and intragenerational mobility in Korea

We expect that intragenerational mobility patterns differ greatly by gender because women's economic participation rates in Korea is lower than other advanced countries with distinctive age patterns (Brinton 2001). Korean women's career trajectories are frequently disrupted by marriage and childbearing, yielding M-shape age patterns (Park and Kim 2003). Occupational segregation by gender (Kim 2015), gender gap in wage (Kim 2009), unequal division of household labor between partners (Eun 2009; Heo 2008) are responsible for women's career disruption. This means that gender equity has not been achieved in public as well as private sphere in Korea, and this country is still undergoing the first part of gender revolution (Goldscheider et al. 2015; McDonald 2000).[1)]

Because career disruption hinders accumulation of human capital that helps job stability (immobility) or short-distance move (micro-class mobility), women are more likely to make long-distance move (macro-class or sectoral mobility) than men, yielding gendered patterns of intragenerational mobility. Because gender difference in career trajectories is closely with family formation that is heavily dependent on age, age patterns of intragenerational mobility is expected to differ greatly by gender.

Ⅱ. Research questions

Based on the discussion presented above, we ask the following questions. This will contribute to understanding relationship between inequality and mobility as well as the unique features of intragenerational mobility patterns in Korea

1. How did intragenerational mobility change in South Korea between 1998 and 2015?
2. How was intragenerational mobility decomposed into different level of aggregations of occupation?
3. How did intragenerational mobility pattern differ by gender and age?

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1) The first part of gender revolution refers to achievement of gender equity in public sphere (e.g., labor market), weakening a traditional family due to rising labor participation among married women. The second part refers to the achievement of gender equity in private sphere because of men's more involvement in family life (Goldscheider et al. 2015: 209-211). Given the lack of gender equity in labor market combined with strong gender segregation in household production in Korea, we interpret that Korea is still in the process of the first part of gender revolution.

Ⅲ. Methods and data

1. Gross mobility

In this study, we apply Jarvis and Song (2017)'s method with modifications. They construct 2-year micro-class mobility tables using the Panel Study of Income Dynamic (PSID) (1969 – 2011). The multilevel class scheme (Jonsson et al. 2009; Jarvis and Song 2017) has four hierarchical dimensions: 75 micro-classes, 10 meso-classes, 5 macro-classes (professional-managerial, proprietros, routine nonmanual, non-farm manual, and primary), and 2 sectors (nonmanual vs. manual). Each level is nested within higher levels. This nested structure is used to examine intragenerational class mobility. Following Jarvis and Song (2017), we decompose gross mobility into 4 components (Jarvis and Song 2017: 581)

$1 = P(Y^{Micro} = 0)$	*1. Micro-Class Immobility*
$+P(Y^{Micro} = 1, Y^{Meso} = 0, Y^{Macro} = 0, Y^{Sector} = 0)$	*2. Net Micro-Class Mobility*
$+P(Y^{Micro} = 1, Y^{Meso} = 1, Y^{Macro} = 0, Y^{Sector} = 0)$	*3. Net Meso-Class Mobility*
$+P(Y^{Micro} = 1, Y^{Meso} = 1, Y^{Macro} = 1, Y^{Sector} = 0)$	*4. Net Macro-Class Mobility*
$+P(Y^{Micro} = 1, Y^{Meso} = 1, Y^{Macro} = 1, Y^{Sector} = 1)$	*5. Net Manual/NM Mobility*

Within 2-year period, individuals can stay in the same micro-class (1. micro-class immobility), change micro-class but remain in the same meso-class (2. net micro-class mobility), change meso-class but not macro-class (3. net meso-class mobility), etc. By decomposing 2-year mobility into 4 dimensions, we can see patterns of gross mobility.

2. Exchange mobility

We also examine exchange mobility by fitting topological log-linear models (Jarvis and Song 2017: 583). Equation (1) presents a baseline model to assess exchange mobility, and we add additional dimensions to this. For equation (1) and following models, we estimate the models separately by gender. Although gross mobility is informative, this is affected by cyclical fluctuations in occupational structure. For example, if a micro-class shrank enormously and lost many individuals to other classes within 2-years, this would increase the overall micro-, meso-, macro-, and sectoral mobility. However, this is not related with increasing exchange mobility. To detect differences in exchange mobility, we need to control for this structural change. The second and third parameters in equation (1)

capture this structural change. The remaining parameters in equation (1) capture exchange mobility, or the association between origin and destination in a simple way. The δmicroij captures degree of micro-class immobility. The δmesoij, δmacroij , and δ sectorij capture net meso-, macro-, and sectoral immobility respectively. If individuals' destination is independent of their micro-class origin, all δmicroijs are equal to 0. Other association parameters have a similar interpretation. This model is helpful to evaluate the relative importance of each level. For example, if big class scheme is not relevant at all to explain intragenerational mobility patterns, δmacroijs are close to 0 after controlling for δmicroijs and δmesoijs. Hence, by fitting this multi-level topological model, we can see how micro-class mobility model works well.

$$\ln(F_{ij}) = \mu + \mu_i + \mu_j + \delta^{micro}_{ij} + \delta^{meso}_{ij} + \delta^{macro}_{ij} + \delta^{sector}_{ij} \quad (1)$$

(where *i*=origin, and *j*=destination).

Based on the theoretical discussion presented in previous section, we elaborate equation (1) to see differences across periods and age groups. Equation (2) allows immobility parameters to fully vary by periods. These parameters tell us how the multi-level structure of exchange mobility changed over time. If intragenerational exchange mobility increased over time as in the U.S. (Jarvis and Song 2017), the γs in equation (2) will become more negative over time. In practice, we impose a restriction on γs. The γs are restricted to be homogeneous in each level and period. This means that immobility parameters (δs) vary by origins (or destinations) but the size of changes in immobility parameters is homogeneous regardless of occupations. In other words, the changes in exchange mobility are assumed to be the same across occupations. We estimate this simple model for two reasons. Frist, it is challenging to fit the fully interactive models using our data although the sample size is fairly large. Second, the γs in this specification are much more interpretable than the full model. Each period has one parameter for immobility in each level.

$$\begin{aligned}\ln(F_{ijt}) &= \mu + \mu_i + \mu_j + \mu_t + \mu_{it} + \mu_{jt} \\ &+ \delta^{micro}_{ij} + \delta^{meso}_{ij} + \delta^{macro}_{ij} + \delta^{sector}_{ij} \\ &+ \gamma^{micro}_{ijt} + \gamma^{meso}_{ijt} + \gamma^{macro}_{ijt} + \gamma^{sector}_{ijt} \end{aligned} \quad (2)$$

(where *i*=origin, *j*=destination, and *t*=period).

To see the differences in exchange mobility across age groups, we estimate equation

(3). Ideally, we may fit the model include three-way interactions among immobility, age, and period. This would tell us how age patterns of exchange mobility changed over time. Given the limited sample size, it is impossible to get reliable estimates for this model. Instead, we pool the data and see how exchange mobility depends on age. Similar to the analysis by periods, we restrict interaction between age and immobility (γs) to be homogeneous in each level and age group.

$$\ln(F_{ija}) = \mu + \mu_i + \mu_j + \mu_a + \mu_{ia} + \mu_{ja} + \delta^{micro}_{ij} + \delta^{meso}_{ij} + \delta^{macro}_{ij} + \delta^{sector}_{ij} + \gamma^{micro}_{ija} + \gamma^{meso}_{ija} + \gamma^{macro}_{ija} + \gamma^{sector}_{ija} \quad (3)$$

(where *i*=origin, *j*=destination, and *a*=age group).

Gender- and age-specific analysis of intragenerational mobility is challenging given women's low economic participation and frequent career disruptions in Korea. Our analysis excludes observations who did not hold a job either in origin or destination because we cannot classify their occupations. Hence, people with stable career trajectories are likely to be overrepresented in our sample. Given more frequent career disruptions among women, this selection issue is more problematic for women. In terms of age group, women in fertile age groups (e.g., 30s) would be more selective than other age groups. Because the analysis of women is greatly susceptible to such selection and we cannot address this issue appropriately at this stage, we need to be cautious in interpreting gender differences in age patterns of exchange based on parameters estimated.

3. Data

We use the Korean Labor and Income Panel Study (KLIPS, 1998-2015) to estimate intragenerational mobility. The KLIPS is an annual panel study of Korean population. The KLIPS was initially a representative sample of urban population excluding Jeju island, but it expanded the coverage into the entire nation in 2009. Using the occupation information, we estimate 2-year intragenerational class mobility rates among those who were aged 20-64 in the starting year. We classify the time into 3 periods; 1998-2003, 2004-2009, 2009-2013. This classification roughly reflects economic cycles in Korea: economic crisis during the late-90s, subsequent recovery, and stagnation after the global financial crisis. We restrict the sample to men and women aged 20 - 64. The resulting sample size is equal to 76,362 person-years clustered in 11,624 individuals. While Jarvis and Song (2017)

use 75 categories of micro-class, we are using 61 micro-classes for men and 60 micro-classes for women because no one occupied other occupations either in origin or destination during the observation period.

IV. Results

1. Gross mobility

Table 1 shows the decomposition of gross mobility rates for men and women. We observe that there is no clear trend in 2-year mobility rates. Micro-class immobility was slightly higher than 80 percent for all periods. Women's immobility rates were slightly lower than men's, but the difference was not substantial. Mobility rates were much lower in Korea than in the U.S. in which immobility rates were around 60 percent since the mid-1990s. This suggests that the intragenerational mobility in Korea were less important

Table 1 Decomposition of gross mobility rates (%)

	Men			
Level of mobility	1998-2003	2004-2008	2009-2013	Total (1998-2013)
Immobility	82.5	84.9	84.4	83.9
Net micro mobility	1.8	1.8	2.2	2.0
Net meso mobility	3.8	3.3	3.2	3.4
Net macro mobility	4.7	3.7	3.7	4.0
Net sectoral mobility	7.2	6.2	6.5	6.7
Total	100.0	100.0	100.0	100.0
N	15,650	14,535	17,360	47,545

	Women			
Level of mobility	1998-2003	2004-2008	2009-2013	Total (1998-2013)
Immobility	81.0	83.4	84.2	82.9
Net micro mobility	3.7	3.6	3.5	3.6
Net meso mobility	3.4	3.1	2.7	3.0
Net macro mobility	4.7	4.1	4.3	4.4
Net sectoral mobility	7.2	5.8	5.3	6.1
Total	100.0	100.0	100.0	100.0
N	9,247	8,697	10,873	28,817

for the status attainment process than in the U.S. In addition, long-distant moves were fairly frequent. Net macro or net sectoral mobility rates were higher than net micro mobility rates for both men and women. The similar pattern was observed in the U.S., and increasing net sectoral mobility primarily increased intragenerational mobility in the U.S (Jarvis and Song 2017). The Korean case is, however, different from the U.S. because net micro class mobility stays in very low level (2-3 percent). Taken together, Korean workers tended to remain in the same occupations, but they ended up with very different occupations than previous ones once leaving.

<Figure 1> shows age patterns of micro-class immobility by sex. From this graph, we can see a clear gender difference in the age patterns of micro-class immobility. Men's micro-class immobility increased as they aged with cyclical fluctuation, suggesting that men's career trajectories were stabilized as they became older. This is not the case for women. Women's micro-class immobility tended to increase as they aged, but women's age gradient was much flatter than men's. This clear gender difference is in sharp

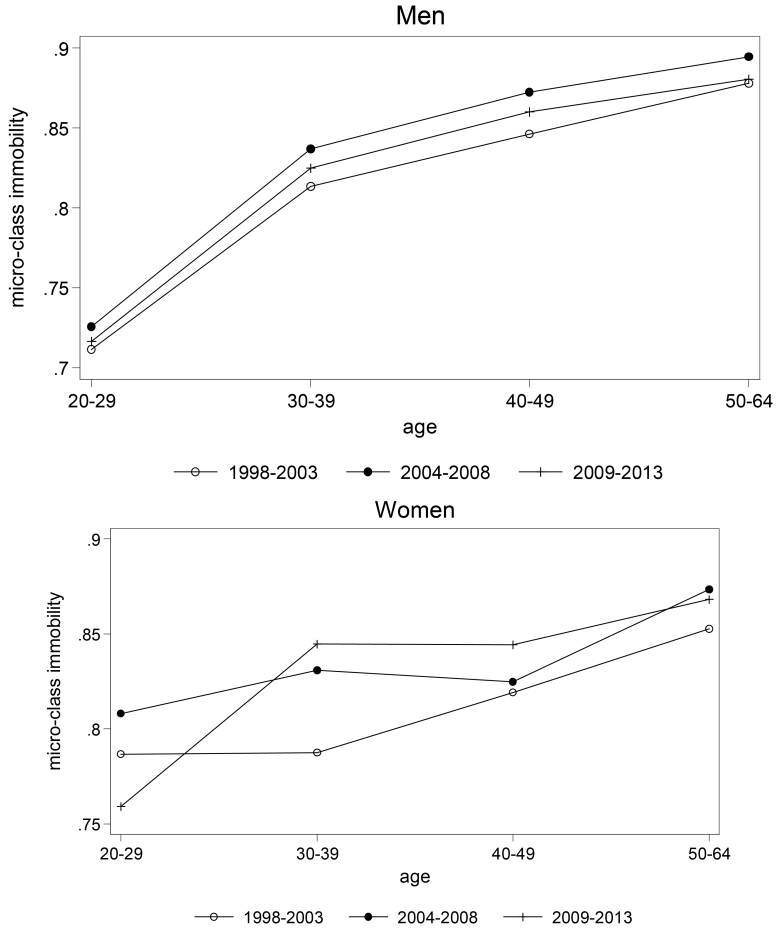

Figure 1. Micro-class immobility by age and sex, 1998-2015

contrast with no sex difference in overall mobility patterns reported in Table 1. This gender difference is clearly related with M-shape patterns of women's economic participation. Women's career disruption related with family formation should be responsible for this sex difference.

<Figure 2> shows age patterns of net micro-class, meso-class, macro-class, and sectoral mobility. Again, we can observe clear gender difference. For men, all net mobility decreased as they aged. For women, we cannot see such age patterns. In particular, women's sectoral mobility remained noticeably high during the 30s and 40s. This clearly shows that women's career disruption around family formation forced them to choose occupations unrelated with their skills and increased non-manual to manual job mobility.

From the analysis of gross mobility, we can reach the following tentative conclusions. First, we cannot find evidence that intragenerational mobility countervail increasing inequality in Korea, given no trend in intragenerational mobility during the observation period. This is different from the U.S. case. Second, there is a clear gender difference in age patterns of intragenerational mobility by gender. Whereas men's mobility (both short- and long-distance) decreased as they aged, no clear age patterns were observed for women. This illustrates strong gender segregation in the Korean labor markets and women's frequent career disruption.

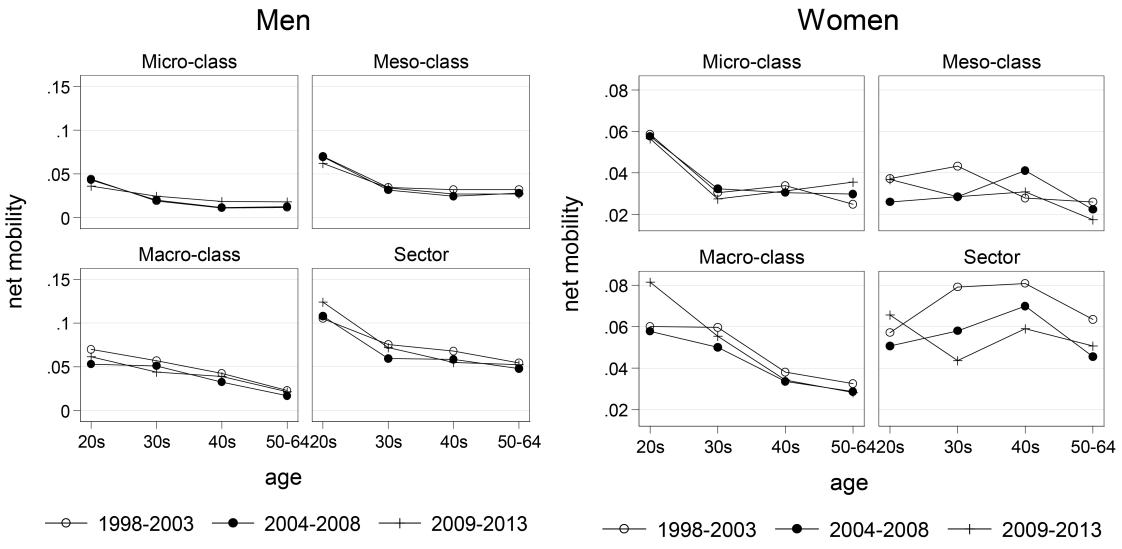

Figure 2. Net mobility by age and sex, 1998-2015

2. Exchange mobility: Overall gender difference

Table 2 presents fit statistics from the log-linear analysis for exchange mobility shown in equation 1. Association parameters are added sequentially. Using BIC as a criterion to evaluate model, we can conclude that all immobility parameters have a significant explanatory power for both men and women. However, we can see interesting gender difference in this analysis in terms of index of dissimilarity index (Δ). For men, inclusion of micro-class immobility reduced Δ substantially. However, adding net meso-class, macro-class, and sectoral immobility parameters does not reduce Δ substantially. By contrast, adding net meso-class immobility reduced Δ from 11.7 to 5.0 percent for women. This suggests that women tended to make a longer-distance move than men after controlling for the marginal distribution of origin and destination. This should be related with difference age patterns of mobility shown in <Figure 1> and <Figure 2>, warranting more careful examination of exchange mobility.

Table 2 Log-linear model fit statistics

		Men	
Level of mobility	residual df	BIC	Δ
M1: Marginal parameters only	3,600	191,920	74.1
M2: M1 + micro-class immobility	3,540	-31,545	5.0
M3: M2 + meso-class immobility	3,533	-31,906	4.7
M4: M3 + macro-class immobility	3,531	-32,141	4.7
M5: M4 + sectoral immobility	**3,530**	**-32,152**	**4.7**

		Women	
Level of mobility	residual df	BIC	Δ
M1: Marginal parameters only	3,481	102,201	76.6
M2: M1 + micro-class immobility	3,423	-23,528	11.7
M3: M2 + meso-class immobility	3,416	-31,085	5.0
M4: M3 + macro-class immobility	3,414	-31,284	4.9
M5: M4 + sectoral immobility	**3,413**	**-31,306**	**4.9**

3. Exchange mobility: Changing gender differences

Table 3 shows goodness-of-fit statistics for the analyses that include period and immobility interactions. Model 1 includes no period and immobility interactions, and Model 2 through Model 5 include these interactions sequentially. In general, inclusion of period and immobility interactions do not reduce Δ substantially, implying that exchange mobility patterns remain stable during the observation period. We can find interesting gender difference. Whereas the model with all period and immobility interactions is the best-fitting model for men (Model 5), the model with only micro-class and immobility interactions fit the data best for women (Model 2). For men, all class boundaries changed over time. Class cohesion for the all levels changed over time. By contrast, class boundary beyond the micro-class level did not change over time for women. This means that the patterns of women's long-distance movements remained stable.

Table 3 Log-linear model fit statistics, year & immobility interaction

	Men		
Level of mobility	residual df	BIC	Δ
M1: Marginal parameters + all diagonal parameters	10,849	-107,886	7.0
M2: M1 + year & micro-class immobility interaction	10,847	-107,922	6.8
M3: M2 + year & meso-class immobility interaction	10,845	-107,918	6.8
M4: M3 + year & macro-class immobility interaction	10,843	-107,924	6.8
M5: M4 + year & sectoral immobility interaction	**10,841**	**-107,934**	**6.8**
	Women		
Level of mobility	residual df	BIC	Δ
M1: Marginal parameters + all diagonal parameters	10,491	-102,057	7.2
M2: M1 + year & micro-class immobility interaction	**10,489**	**-102,075**	**7.0**
M3: M2 + year & meso-class immobility interaction	10,487	-102,054	7.0
M4: M3 + year & macro-class immobility interaction	10,485	-102,056	7.0
M5: M4 + year & sectoral immobility interaction	10,483	-102,037	7.0

Table 4 presents immobility and period interactions parameter estimates from Model 2 and Model 5. Estimates for Model 2 captures the changes of overall occupational mobility crossing micro-class boundaries. All coefficients are positive and significant, suggesting that occupational mobility was the highest during the period of 1998-2003. The difference

between later two periods (2004-2008 and 2009-2013) is insignificant for both men and women. This should reflect the extreme job instability after the economic crisis occurring in 1997 (Choi 2016; Kye 2008).

Table 4 Interaction between year and immobility

	Male			Female		
Variables			Model 2			
Year-microclass	b	s.e.	exp(b)	b	s.e.	exp(b)
year 2004-micro	0.220	0.032	1.246	0.171	0.040	1.186
year 2009-micro	0.190	0.030	1.209	0.230	0.038	1.259
Variables			Model 5			
Year-microclass	b	s.e.	exp(b)	b	s.e.	exp(b)
year 2004-micro	-0.005	0.087	0.995	0.169	0.082	1.184
year 2009-micro	-0.132	0.080	0.876	0.264	0.079	1.302
Year-mesoclass						
year 2004-meso	0.002	0.104	1.002	-0.340	0.118	0.712
year 2009-meso	0.178	0.098	1.195	-0.307	0.114	0.736
Year-macroclass						
year 2004-macro	0.494	0.080	1.639	0.477	0.110	1.612
year 2009-macro	0.435	0.076	1.545	0.301	0.105	1.352
Year-sector						
year 2004-sector	-0.300	0.070	0.741	-0.088	0.091	0.916
year 2009-sector	-0.338	0.067	0.713	0.047	0.086	1.048

Estimates for Model 5 in Table 4 show how each class boundary changed over time. Net association between origins and destinations changed to some extent, which is in contrast with the patterns of gross mobility that shows no substantial change (Table 1). For men, micro-class and net meso-class immobility did not change significantly. While net macro-class increased, net sectoral immobility decreased compared with the period of 1998-2003. The odds of remaining in the same macro-class upon leaving meso-class in the later two periods are more than 50 percent higher than those in the period of 1998-2003. Although we cannot identify the process in detail, this reflects huge turbulence in labor markets after the economic crisis. Many people lost their job and had difficulty in finding a job well-fitting for their skill, ending up with jobs crossing their macro class. This turbulence fade away, strengthening the macro-class boundaries later. Interestingly, net sectoral immobility decreased after the crisis. This means that divide

between nonmanual and manual sector was the strongest during the first period (1998-2003) while macro-class boundaries were weak. The exchange mobility patterns are comparable with gross mobility presented in Table 1 except for net sectoral mobility. Net sectoral mobility was the highest for the first period, but boundaries between nonmanual and manual sector became weaker after controlling for the structural change. This suggests that the highest net sectoral mobility in the first period reflected the structural changes rather than weak association between origin and destination in sectoral level.

The patterns for women are distinct from the men's. Micro-class immobility became stronger over time, net meso-class immobility became weaker, net macro-class immobility was the lowest for the first period, and no change in net sectoral mobility was observed. Increasing micro-class immobility for women is in sharp contrast with men's patterns. In terms of gross mobility, women's net micro mobility is higher than men but this remained fairly constant. However, we can see that the boundaries of micro-class became stronger, meaning that micro-class mobility among women was the highest in the first period after controlling for structural changes. These frequent movements across micro-class boundaries among women suggests that job protection was weaker for women than men during the economic crisis.

4. Exchange mobility: Gender difference in age patterns

Table 5 shows the goodness-of-fit statistics for the analyses that include age and immobility interactions. Model 1 includes no age and immobility interactions, and Model 2 through Model 5 include these interactions sequentially. In general, inclusion of age and immobility interactions do not reduce Δ substantially except for micro-class immobility, implying that exchange mobility patterns other than micro-class mobility remain stable during the observation period. We can find an interesting gender difference. Whereas the model with all age and immobility interactions is the best-fitting model for men (Model 5), the model with micro-class and net meso-class immobility interactions fit the data best for women (Model 3). For men, all class boundaries changed over time. Class cohesion for the all levels changed over time. By contrast, class boundary beyond meso-class did not change over time for women. This means that the patterns of women's long-distance movements remained stable.

Table 5 Log-linear model fit statistics, age & immobility interaction

	Men		
Level of mobility	residual df	BIC	Δ
M1: Marginal parameters + all diagonal parameters	14,509	-144,990	8.7
M2: M1 + age & micro-class immobility interaction	14,506	-145,512	7.9
M3: M2 + age & meso-class immobility interaction	14,503	-145,492	7.9
M4: M3 + age & macro-class immobility interaction	14,500	-145,536	7.9
M5: M4 + age & sectoral immobility interaction	**14,497**	**-145,571**	**7.9**

	Women		
Level of mobility	residual df	BIC	Δ
M1: Marginal parameters + all diagonal parameters	14,031	-136,845	9.3
M2: M1 + age & micro-class immobility interaction	14,028	-137,173	8.2
M3: M2 + age & meso-class immobility interaction	**14,025**	**-137,180**	**8.1**
M4: M3 + age & macro-class immobility interaction	14,022	-137,170	8.1
M5: M4 + age & sectoral immobility interaction	14,019	-137,176	8.1

Table 6 presents immobility and age interactions parameter estimates from Model 2 and Model 5. Estimates for Model 2 capture age patterns of overall occupational mobility crossing micro-class boundaries. We can see that interactions with higher age groups are larger, suggesting that occupational mobility became less frequent over the life course. This increasing stability over the life course is similar for men and women. The similar mobility patterns between men and women suggest that gender differences in occupational structure is responsible for slightly higher gross mobility among women (Table 1).

Age patterns of intragenerational mobility vary upon the levels, and the patterns of immobility in each level differ by gender (Model 5). For men, micro class immobility was the lowest among the 20s, and became higher until the 40s. Net meso-class immobility did not depend on age much, and net macro-class increased as people aged. Finally, net sectoral immobility decreased as people aged. For women, micro class mobility was the lowest among the 20s and remained constant after this age. Net meso-class immobility was the lowest among the 30s, and there was no significant difference among the other age groups. The age pattern of net macro-class immobility was similar to micro-class

Table 6 Interaction between age and immobility

	Male			Female		
Variables			Model 2			
Age-microclass	b	s.e.	exp(b)	b	s.e.	exp(b)
age30-micro	0.550	0.039	1.733	0.434	0.049	1.543
age40-micro	0.803	0.042	2.232	0.717	0.051	2.048
age50-micro	1.047	0.046	2.850	1.076	0.058	2.933
Variables			Model 5			
Age-microclass	b	s.e.	exp(b)	b	s.e.	exp(b)
age30-micro	0.444	0.092	1.558	0.634	0.095	1.886
age40-micro	0.853	0.103	2.347	0.629	0.097	1.876
age50-micro	0.749	0.108	2.114	0.671	0.111	1.957
Age-mesoclass						
age30-meso	-0.103	0.110	0.902	-0.671	0.145	0.511
age40-meso	-0.282	0.122	0.754	-0.257	0.146	0.774
age50-meso	-0.187	0.127	0.829	0.122	0.166	1.130
Age-macroclass						
age30-macro	0.487	0.080	1.628	0.623	0.129	1.865
age40-macro	0.512	0.088	1.669	0.739	0.135	2.094
age50-macro	1.198	0.104	3.314	0.735	0.157	2.085
Age-sector						
age30-sector	-0.321	0.078	0.726	-0.261	0.105	0.771
age40-sector	-0.342	0.083	0.710	-0.585	0.106	0.557
age50-sector	-0.788	0.098	0.455	-0.553	0.120	0.575

immobility. Finally, net sectoral immobility was lower among the 40s and 50s.

Comparison between Model 2 and Model 5 tells us interesting gender difference in age patterns of intragenerational mobility. Whereas general patterns of occupational mobility was similar for men and women (Model 2), the distance of movement differs by gender. First, age-gradient in micro-class immobility is stronger for men than women, suggesting that women are more likely to change their micro-class more frequently than men as they age. This means that women have a difficulty in accumulating occupation-specific skills that have crucial life course implications. This gender difference also suggests that women's class cohesion is weaker than men, according to the perspective emphasizing the importance of detailed occupation or micro-class in class reproduction (Weeden and Grusky 2005). The gendered pattern of micro-class immobility should reflect frequent career disruptions among women related with family formation. Second, the age pattern

of net macro-class immobility is similar to that of micro-class immobility. While age-gradient of men' net macro micro-class immobility is strong and monotonic, women's age-gradient is not clear. Combined with the patterns of micro-class immobility, this suggests that women are likely to make longer-distance moves upon leaving their occupation as well as to change their job more frequently than men. This shows consequences of career disruption associated with family formation among women. Women's job stability was lower than men', and women were more likely to end up with jobs unrelated to their previous jobs.

V. Summary

Examining intragenerational mobility can serve to solving puzzle of social mobility in Korea: rising inequality, rising concerns of decreasing social fluidity, but stable or trendless intergenerational occupation mobility. We find the following patterns, which have interesting implications. First, we find that intragenerational occupational mobility exhibits a stable or fluctuating trend during the period of rising inequality, leading us to reconsidering the "Great Gatsby Curve" hypothesis in the Korean context. Whereas rising intragenerational mobility helps explain seemingly inconsistent trends of rising inequality and stable intergenerational mobility in the U.S. (Jarvis and Song 2017), our analysis of the Korean data does not reach the similar conclusion. However, inequality is one thing, and mobility is another. Increasing mobility does not necessarily strengthen intergenerational association (Hout 2004). In this sense, the relationship between inequality and mobility is an empirical question. Here, we see no clear trend in intragenerational mobility in Korea, showing the disjuncture between the two trends of inequality and mobility. How can we interpret such a different pattern? Several institutional factors including employment practices should be responsible for this difference, and it will be necessary to develop a more sensible framework to understand the phenomenon.

Second, we find a very interesting contrast between men and women in age patterns of intragenerational mobility. Whereas men's mobility patterns were stabilized as they became older, we do not find such age patterns among women. This should be related with strong occupational segregation by gender and women's burden associated with family formation.

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