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Brains to the Capital: Wage Gaps
and the Regional Sorting of Skilled
Migrants in South Korea

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Brains to the Capital: Wage Gaps and the Regional Sorting of Skilled Migrants in South Korea

During the late 2010s, South Korea experienced a significant concentration of highly educated workers, particularly in Seoul. This study analyzes the selection and sorting of internal migrants in Korea during this period, applying the income maximization framework of Grogger and Hanson (2011). Leveraging detailed administrative data on inter-regional migration flows by education level, we find that migration patterns are consistent with the predictions of the income maximization model. Specifically, our results on selection indicate that migrants are positively selected on education when the skill-specific wage differential between the destination and origin is large. Furthermore, we find that the relative inflow of highly educated migrants is positively associated with the absolute wage difference between high- and low-skilled workers at the destination. Finally, this sorting of skilled workers is especially pronounced for migration flows toward Seoul, supporting the observed concentration of highly educated individuals in the capital during this period.

Keywords: Internal Migration, Self-selection, Wage differentials

JEL Classification codes: J31, J61, R23

I. Introduction

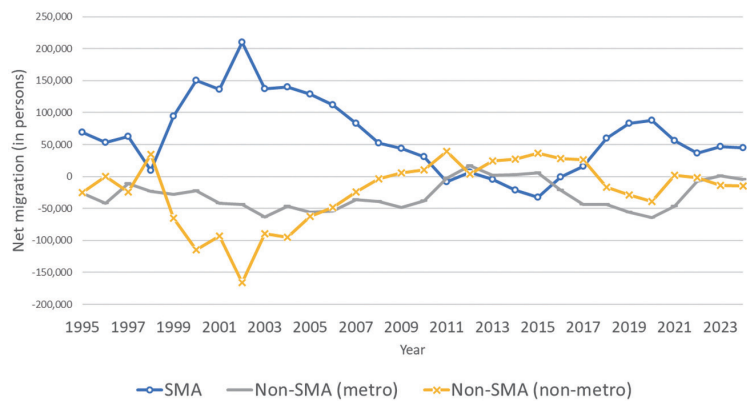
It is widely documented that agglomeration in cities is strongly associated with local economic growth. A vast body of literature establishes that cities with greater density grow faster, as density boosts productivity and innovation while improving access to goods and services (e.g., Ciccone and Hall, 1996; Glaeser and Mare, 2001; Rosenthal and Strange, 2004). However, another crucial strand of research focuses on the clustering of highly educated workers and its specific role in urban growth. For instance, Glaeser and Saiz (2003) show that cities with a higher share of human capital grow more rapidly than comparable cities with lower education levels. Similarly, Moretti (2012) argues that innovation and creativity driven by well-educated workers are key drivers of the increasing economic divergence between cities.

Since internal migration is a primary determinant of both population density and the spatial concentration of skilled workers, it is crucial to analyze the selection and sorting of migrants across cities, particularly in terms of skill levels (Borjas, 1992). While classic studies such as Borjas (1987, 1992) and Dahl (2002) argue that the relative wage gap (or the rate of return to skill) is the primary driver of skill-based migration, recent literature on international migration suggests that the absolute difference in earnings between skill levels better explains migrant selection (Grogger and Hanson, 2011). Assuming that a similar selection mechanism applies to internal mobility, we test whether internal migration flows are also better explained by absolute wage differences rather than relative wage differences.

We apply the income maximization framework proposed by Grogger and Hanson (2011) to the context of internal migration in South Korea (hereafter, Korea) over the period 2015–2020. Korea offers a unique setting due to the significant concentration of its population in a single region: the Seoul Metropolitan Area (SMA). To put this in perspective, more than 50% of the national population resides in the SMA—a trend that has intensified in recent years. As shown in Figure 1, the SMA experienced a net outflow until 2015; however, this trend reversed thereafter. In parallel, Korea is characterized by

a high frequency of internal migration. Between 2015 and 2018, the country exhibited a notably high level of internal mobility, with an average annual interregional migration rate of 4.8%, nearly twice the OECD average of 2.5%. These patterns make late-2010s Korea a particularly relevant context for examining the sorting behavior of internal migrants in advanced economies.

Figure 1. Migration flow



Notes: SMA includes LZs located in Seoul, Gyeonggi, and Incheon. Non-SMA (metro) represents LZs in large urban metropolitan areas (excluding SMA). Non-SMA (non-metro) represents LZs in non-metropolitan regions (in provinces).

We find that the selection and sorting patterns of internal migration in Korea align closely with the income maximization framework. Specifically, the absolute difference in earnings between destination and source regions is strongly associated with the relative skill ratio of migrants, indicating positive selection. Moreover, the relative inflow of highly educated individuals—compared to their less-educated counterparts—is positively correlated with the absolute skill premium (the wage gap between high- and low-skilled workers) in destination regions, suggesting systematic sorting by skill. These findings imply that internal migrants in Korea are positively selected on education and tend to sort into regions with larger absolute wage differentials, even though such skill-related earnings gaps within a country are significantly smaller than those observed across countries.

Analyzing internal migration allows us to investigate important heterogeneity based on worker and regional characteristics, leveraging detailed administrative data. We find that the income maximization framework performs well regardless of workers' age or gender, suggesting that internal mobility is primarily driven by spatial wage differentials rather than demographic characteristics. However, we also uncover significant regional heterogeneity: the positive association between regional skill premiums and the sorting of highly educated workers is especially pronounced in the SMA, the largest local economy in Korea. In other words, the tendency to relocate to higher-wage areas is amplified when the destination is the capital region. While our analysis does not establish causality, this pattern aligns well with the observed concentration of human capital in the SMA during our study period.

Our findings contribute to the migration literature by examining the selection and sorting behavior of internal migrants. Previous studies on international migration present varying perspectives on migrant selectivity, ranging from frameworks based on returns to skills (e.g., Borjas, 1987; Abramitzky et al., 2012) to those emphasizing absolute income levels (e.g., Grogger and Hanson, 2011; Ortega and Peri, 2012). By focusing on internal migration, where migration costs and policy barriers are arguably lower, our findings provide empirical evidence consistent with the absolute income hypothesis. We demonstrate that absolute wage gaps effectively explain migration patterns, suggesting that the income maximization framework remains robust even when earnings differentials are relatively small, as observed within a single country.

Finally, analyzing the sorting of highly educated workers has important implications for the literature on agglomeration economies, as local skill composition is a key predictor of regional economic growth (Glaeser, 1994; Glaeser et al., 1995; Simon, 1998; Black and Henderson, 1999). If internal migrants—particularly the highly educated—sort into cities with larger absolute skill-based wage gaps, this can exacerbate regional disparities. The concentration of skilled workers boosts local productivity (Moretti, 2004; 2012)

and can endogenously increase local amenities (Diamond, 2016). While a large inflow of high-skill workers may exert downward pressure on wages through increased supply, the accompanying rise in productivity tends to dominate, ultimately leading to higher average wages and regional economic gains. Consequently, inequality among workers may rise beyond what is implied by wage differentials alone. Our findings of positive sorting into high-wage regions align with those of Moretti (2012) and Diamond (2016), providing micro-evidence for the mechanisms underlying the recent agglomeration of human capital in the SMA.

The remainder of this paper is organized as follows: Section 2 introduces the income maximization model and the estimating equations. Section 3 describes the data sources and presents summary statistics. Section 4 presents the empirical results on the selection and sorting of internal migrants in Korea. Section 5 concludes the paper.

II. Theory and Empirical Specification

1. Grogger and Hanson (2011) Model

To analyze the selection and sorting of internal migrants across regions in South Korea, we apply the theoretical framework developed by Grogger and Hanson (2011) to model migration decisions of individuals, and derive the estimating equations. In this model, individuals choose their locations to maximize expected utility, which depends on earnings potential and migration costs. We classify workers into two skill groups (j), either high-education (H) or low-education (L).

Let the wage for worker i from source-LZ s in destination-LZ h is determined by $W_{ish}^H = \exp(W_h^L + \delta_h^H D_{is}^H)$ and where $\exp(W_h^L)$ is the wage for low-education workers and δ_h^H is the return to high-education. Next, let the cost of migrating from s to h is approximated by $C_{ish}^H = f_{sh} + g_{sh}^L D_i^L + g_{sh}^H D_i^H$. We assume that there are two components of costs: a fixed monetary cost of moving from s to h , f_{sh} , and a component that varies by skill, g_{sh}^j (which may

be positive or negative). The cost of migration is affected by the geographic distance between the source and the destination and by other factors that depends on the skill levels of migrants.

The form of utility function in Grogger and Hanson (2011) is a linear-utility model¹⁾ where the utility migrating from s to h is a linear function of the difference between wages and migration costs:

$$U_{ish}^j = \alpha(W_{ih}^j - C_{ish}^j) + \varepsilon_{ish}^j \quad (1)$$

where $\alpha > 0$ and ε_{ish}^j is an unobserved idiosyncratic term. This equation can be viewed as a first-order approximation to some general utility function, with the marginal utility of income given by α . One of the “destinations” is the source region itself, for which migration costs are zero.

If individuals choose locations to maximize their utility and assuming that ε_{ish}^j follows an i.i.d. extreme value distribution, the log odds of migrating to destination (h) versus staying in the source (s) for skill group j will be as follows (McFadden 1972):

$$\ln\left(\frac{E_{sh}^j}{E_s^j}\right) = \alpha(W_h^j - W_s^j) - \alpha f_{sh} - \alpha g_{sh}^j \quad (2)$$

where E_{sh}^j is the population share of skill group j in s that migrates to h , E_s^j is the population share of group j in s that remains in s . This equation measures the scale of migration that depends on the level difference in skill-specific wages between source and destination and migration costs (scale equation).

Take the difference of this scale equation between high- and low-education individuals, we can derive the selection equation as follows:

1) According to Grogger and Hanson (2011), international migration responds to absolute rewards to skill, which is consistent with linear utility.

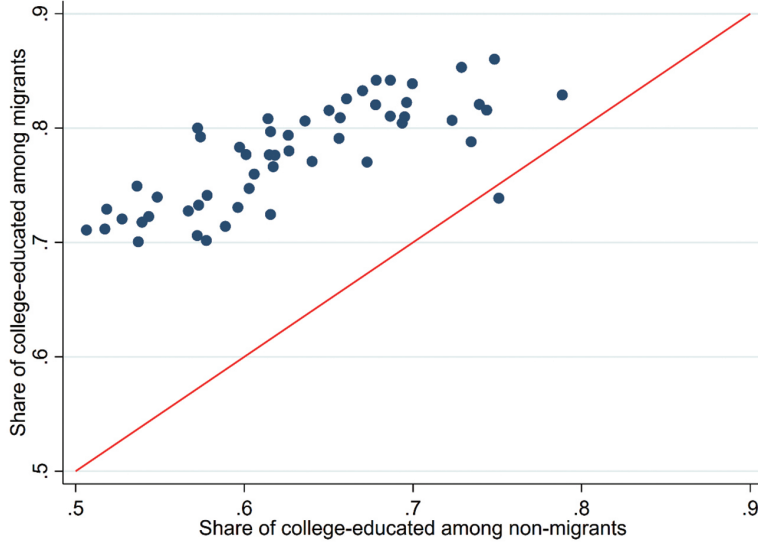
$$\ln\left(\frac{E_{sh}^H}{E_{sh}^L}\right) - \ln\left(\frac{E_s^H}{E_s^L}\right) = \alpha[(W_h^H - W_s^H - g_{sh}^H) - (W_h^L - W_s^L - g_{sh}^L)] \quad (3)$$

The first term in the dependent variable represents the log skill ratio in terms of migrant flows (the log ratio of high-education workers relative to the low-education workers who migrate from s to h).²⁾ The second term in the dependent variable is the log skill ratio for non-migrants in source s . Therefore, the dependent variable essentially captures the difference in skill mix between emigrants (from s to h) and non-migrants in the source s . The sign of this dependent variable would tell us whether migrants are positively or negatively selected: if it is positive (negative), they are positively (negatively) selected. Since $\alpha > 0$ in our model, migrants should be positively selected if the wage difference between the source and destination, net of skill-varying costs, is greater for high-education workers.

Our data explains that internal migrants in Korea during the period 2015-2020 are positively selected in terms of education. In Figure 2, we plot the log odds of having emigrated for the college-educated against that for the non-college-educated by source region. Nearly all regions are above the 45-degree line, indicating positive selection. This is consistent with the fact that education is a strong predictor of migration (Malamud and Wozniak, 2012). Interestingly, only one region, SMA, is located lower the 45-degree line. It indicates that highly educated individuals are less likely migrate from SMA. This fact suggests that the significant concentration of population in SMA during our period of analysis is also accompanied by the strong sorting of skilled workers in that region (SMA).

2) Grogger and Hanson (2011) uses in terms of the “stock” (rather than “flow”) of individuals from s that choose to reside in h , because it is hard to obtain the flow data in international migration.

Figure 2. Selection of migrants



Notes: This Figure plots the share of college-educated migrants against the share of college-educated non-migrants by source regions.

This selection equation can also be transformed into sorting equation by rearranging terms that vary only by source region to yield:

$$\ln\left(\frac{E_{sh}^H}{E_{sh}^L}\right) = \alpha[(W_h^H - W_h^L) - (g_{sh}^H - g_{sh}^L)] + \tau_s \quad (4)$$

where $\tau_s = \ln(E_s^H/E_s^L) - \alpha(W_s^H - W_s^L)$. By doing so, we can easily examine how migrants sort themselves across destinations. Specifically, this equation suggests that migrants from a specific source s will sort themselves across destinations based on the skill rewards offered in each destination h . If the net rewards to skill are greater in destination h than in destination k , then destination h should attract high-education migrants from source s compared to destination k . In other words, destination regions with larger wage differences related to skill should attract more educated people.

2. Estimating Equations

From these model equations that characterize the scale, selection, and sorting of internal migrants, we derive the following three estimating equations which can be used to test for income maximization. The empirical version of the scale, selection, and sorting equations are:

$$\ln\left(\frac{\hat{E}_{sh}^j}{\hat{E}_s^j}\right) = \alpha(W_h^j - W_s^j) + \chi_{sh}\gamma + I(j = H) \cdot d_{sh}\gamma^H + \Phi X_h + u_{sh} \quad (5)$$

$$\ln\left(\frac{\hat{E}_{sh}^H}{\hat{E}_{sh}^L}\right) - \ln\left(\frac{\hat{E}_s^H}{\hat{E}_s^L}\right) = \alpha[(W_h^H - W_s^H) - (W_h^L - W_s^L)] + d_{sh}\gamma + \Phi X_h + u_{sh} \quad (6)$$

$$\ln\left(\frac{\hat{E}_{sh}^H}{\hat{E}_{sh}^L}\right) = \alpha[(W_h^H - W_h^L)] + d_{sh}\gamma + \Phi X_h + \tau_s + u_{sh} \quad (7)$$

where the terms with hats (\hat{E}) are the actual numbers of migrants and non-migrants in our internal migration data for skill level ($j = H, L$), d_{sh} is the distance between the source and destination, $I(j = H)$ is the indicator function representing college educated workers, and u_{sh} is the error term. The key hypothesis is that $\alpha > 0$ as in our theoretical model. If the models are properly specified, the three equations should yield similar estimates of α .

From the scale, selection, and sorting equations in the theoretical model, in our empirical specifications, we also include some important regional characteristics at the destination level (X_h). Those observable characteristics include local amenities such as educational infrastructure and housing prices, as well as variables that are intended to control for local economic policy. We will introduce these variables in detail in the next section.

III. Data and Internal Migration

In this section, we introduce the source of data we use in estimating the scale, selection, and sorting of internal migrants in South Korea. We also present summary statistics and interesting patterns of internal migration across regions during this period.

1. Data

The geographical unit of our analysis is 56 Living Zones (LZs) within South Korea. This LZ, as defined by Statistics Korea, is a geographical area that reflects the daily living and commuting patterns of residents based on economic activity. This concept is similar to the concept of Commuting Zones in the U.S. (Autor and Dorn, 2013). Because multiple cities are grouped into each LZ, migration across LZs likely captures differences in labor market conditions, such as wage differences, rather than differences in local amenities. Our analysis analyzes the internal migration across LZs, mainly for the period between 2015 and 2020 during which the significant sorting of population to SMA took place. We also run the same analysis for the period between 2010 and 2015 to examine if there exist heterogeneous patterns.

Estimating the scale, selection, and sorting equations requires the bilateral migration flows between LZs as well as the stocks of non-migrants in each LZ. In order to obtain such flows and stocks, we rely on the Population Census of Korea 2020. This Census data provides individual's current location of residence as well as the location for five years ago. Using this information, we construct bilateral migration flows by education level between each LZs for the individuals aged 25 to 50. The smallest geographical unit in Census data is 229 districts so we collapse individuals into LZ-pair (source LZ) level for the flow (the stock of non-migrants). Our reliance on five-year residential changes captures recent domestic mobility, though we recognize that life-cycle patterns—such as educational return migration or long-term residency—may result in flows that differ from the origin-based framework of Grogger and

Hanson (2011).

We relate this bilateral migration flows and the stock of non-migrants to the wage level in each LZ. As Census data does not provide wage information, we use the Local Area Labor Force Survey of Korea (LALF) for year of 2015. Because the geographical unit of this LALF dataset is 162 cities, we again collapse wage of individuals at the destination LZ-level and obtain average hourly and monthly wages by education. Our hypothesis is whether the selection (sorting) of migrants is positively related with the wage difference between the source and destination (the wage gap between high- and low-education) at the destination.

Lastly, we also exploit the data from the e-local index of Statistics Korea and Korea Real Estate Board to obtain LZ-level characteristics. Although the migration across LZs, which are rather large, is likely due to the differences in labor market conditions, we include some observable amenities such as educational facilities, wastes, traffic, and housing prices.

Table 1 describes summary statistics from our key variables (migration and average wage), along with LZ-level characteristics. For our outcome variables, we report the sorting of highly educated workers, the ratio of college to non-college educated migrants, by gender and age. Across all measures, the skill ratios are greater than zero on average, thereby suggesting that highly educated individuals are more likely to migrate compared to less educated individuals. Across destination LZs, there is significant variation of wage gap between high- and low-education across LZs in 2015. For instance, the average monthly wage gap is approximately 600 thousand won, but some LZs they are more than 1 million won. Our interest is whether the sorting of highly educated workers is correlated with this wage gap between high- and low-education.

Table 1. Summary statistics

	Mean	SD	Min	Max
Outcome variable (from source to destination)				
Ratio of college to non-college educated migrants, 2015-2020	3.98	5.91	0.03	98.00
Ratio of college to non-college educated migrants, male, 2015-2020	4.02	5.29	0.00	79.00
Ratio of college to non-college educated migrants, female, 2015-2020	3.61	4.29	0.00	51.00
Ratio of college to non-college educated migrants, aged 25-34, 2015-2020	5.90	8.42	0.00	159.00
Ratio of college to non-college educated migrants, aged 35-50, 2015-2020	2.40	3.15	0.00	49.00
Variable of interest (destination-based)				
Monthly wage gap between college and non-college educated (1K KRW), 2015	611.06	166.47	242.04	1,108.54
Hourly wage gap between college and non-college educated (1K KRW), 2015	3.78	0.92	1.69	6.41
Control variables (destination-based)				
Number of nursery facilities per 1,000 infants, 2015	13.86	3.65	0.00	23.83
Number of tutoring facilities per 1,000 residents, 2015	1.22	0.62	0.00	4.40
Waste per residents, 2015	1.06	0.33	0.00	1.95
Number of cultural facilities per 100,000 residents, 2015	11.49	7.04	0.00	35.37
Number of senior facilities per 1,000 seniors, 2015	12.62	6.53	0.00	31.00
Transportation culture index, 2015	73.63	13.14	0.00	84.46
Traffic accidents per 1,000 cars, 2015	9.15	2.14	0.00	13.00
Number of students per class, 2015	20.85	3.41	13.94	27.16
Average of apartment and house sale price index, 2015	98.90	4.73	87.78	110.90
Average of apartment and house rental price index, 2015	97.91	4.36	90.56	109.78

While our analysis at the local labor market (LZ) level relieves concerns regarding individual sorting driven by local amenities, we still control for rich measures of amenities at the LZ level. These variables, shown in Table 1, include cultural infrastructure (nursery and cultural facilities), educational amenities (tutoring facilities and class size), dis-amenities (waste emission and traffic accidents), and housing prices to reflect local price levels.

We also include some controls to capture important policy shock during our period of analysis. First, we introduce a dummy for “Innovation Cities” to capture the impact of public sector relocation. During the study period, the government transferred numerous public agencies from the Seoul Metropolitan Area to these designated cities, which may have served as a positive shock to local labor demand (e.g., Kim et al. 2024; Moon and Lee 2025). Second, we control for the availability of high-speed train services (KTX and SRT). Previous literature suggests that high-speed rail significantly reduces trade and commuting costs, thereby reshaping the spatial distribution of economic activity (e.g., Baum-Snow et al., 2017; Donaldson, 2018).

To show our preliminary results, Table 2 shows the top 10 and bottom 10 LZs according to the monthly wage gap between skills ($W_h^H - W_h^L$) and the log skill ratio of migrants ($\ln(\hat{E}_{sh}^H/\hat{E}_{sh}^L)$) across LZs. If top and bottom 10 cities based on the two variables are similar, we can hypothesize that highly educated individuals sort into LZs with the greater absolute wage differences by skills. Table 2 shows that this is the case as expected. In top 10 LZs, we constantly find relatively large LZs such as Seoul-Gyeonggi, Daejeon, and Daegu. This already suggests the significant sorting of skilled workers in local economies with the greater wage gap between skills.

Table 2. Absolute wage gap and migration ranking across LZ:
Top 10 and Bottom 10

Top10		Bottom10	
Destination	Monthly Wage Gap	Destination	Monthly Wage Gap
Seoul-Gyeonggi	1108.54	Goryeong	242.04
Daejeon	940.83	Ulsan	277.87
Yeongju	907.85	Yanggu	304.83
Samdobong	851.76	Mid-South Jeonnam	388.60
Chungju	843.81	Jincheon	392.33
Pohang	838.38	Southwest Jeonnam	400.23
Daegu	808.50	Hantan River	404.55
West Gyeongnam	764.21	Gyeongsan	417.97
Yeongbuk	756.52	Southeast Gyeongnam	429.37
Chiaksan	741.82	Pyeongang	444.04

Top10		Bottom10	
Destination	Log ratio of college to non-college	Destination	Log ratio of college to non-college
Sejong	1.65	Mid-South Jeonnam	0.14
Daejeon	1.17	Jincheon	0.18
Seoul-Gyeonggi	1.15	Hantan River	0.20
Andong	1.11	Goryeong	0.21
Daegu	1.10	Okcheon	0.25
Gwangju	1.07	Southeast Jeonbuk	0.27
Jeju	1.05	Northwest Jeonnam	0.29
Busan	1.00	Uiseong	0.31
Chuncheon	0.96	Boryeong	0.31
West Gyeongnam	0.92	Northeast Jeonbuk	0.34

IV. Results

In this section, we formally examine the empirical versions of the scale, selection, and sorting equations using the internal migration data of Korea.

1. Scale, Selection, and Sorting of Migrants

We begin by presenting the results from the scale equation. In our scale equation, the unit of observation is the source-destination-skill group cell, with the college educated ($j=H$) and the non-college educated ($j=L$) for each source-destination pair. The dependent variable is the log odds of relocating from source s to destination h for skill group j , and the wage measure is the differences in wages between the destination and source countries, for each skill group j . We use two different measures of the wage: monthly and hourly wages. Standard errors are clustered by source LZ.

As the estimating equation is derived from utility function, the magnitude of the coefficients on the wage differences between source and destination does not have a straightforward interpretation. Thus, we focus on the signs and significance levels of the coefficients. If the sign on the coefficients on the wage differences is positive and statistically significant, the scale of migration by skill level is positively associated with the skill-specific wage differences, as expected in our theoretical model. With this caution in mind, nevertheless, we also provide the quantitative interpretation.

Table 3 presents the results from our scale regressions. Panel A first presents the results using all population. Column (1) uses monthly wage, while column (2) uses hourly wage. All coefficients show the positive sign and they are highly significant. This suggests that internal migrants strongly respond to local labor market conditions, proxied by skill-specific average wage. Specifically, in column (1) of Panel A, as monthly wage difference increases by 1,000 KRW, the log odds of relocating increase by 0.8 percent.

Table 3. Scale of migrants, 2015-2020

	(1)	(2)	(3)	(4)
A. All				
Monthly wage diff. (same skill, dest.–source, 2015)	0.008*** (0.002)			
Hourly wage diff. (same skill, dest.–source, 2015)		1.373*** (0.368)		
Control variables	YES	YES		
Observations	4,408	4,408		
R-squared	0.506	0.501		
B. by gender				
	Male	Male	Female	Female
Monthly wage diff. (same skill, dest.–source, 2015)	0.006*** (0.001)		0.011*** (0.003)	
Hourly wage diff. (same skill, dest.–source, 2015)		1.037*** (0.241)		1.625*** (0.523)
Control variables	YES	YES	YES	YES
Observations	4,218	4,218	4,183	4,183
R-squared	0.482	0.476	0.497	0.494
C. by age group				
	Aged 25-34	Aged 25-34	Aged 35-50	Aged 35-50
Monthly wage diff. (same skill, dest.–source, 2015)	0.013*** (0.002)		0.007*** (0.002)	
Hourly wage diff. (same skill, dest.–source, 2015)		2.613*** (0.454)		1.151*** (0.307)
Control variables	YES	YES	YES	YES
Observations	4,168	4,168	4,192	4,192
R-squared	0.521	0.519	0.458	0.453

Notes: The dependent variable is the log ratio of emigrants in the destination to the population in the source for the college or non-college skill group. Explanatory variables include the same-skill wage difference between destination and source regions, measured in 2015 using both monthly and hourly earnings. Control variables include amenity variables, housing price indices, the geographical distance between regions, dummies for the presence of a KTX or SRT station, and dummies for the presence of an innovation city in the destination region. Amenity controls include the number of nursery facilities per 1,000 infants, number of tutoring facilities per 1,000 residents, waste per resident, number of cultural facilities per 100,000 residents, number of senior facilities per 1,000 seniors, the transportation culture index, traffic accidents per 1,000 cars, and average class size—each measured in 2015 for the destination. Housing price controls include the average apartment and house sale price index and the average rental price index, measured in 2015 for the destination. The specification additionally includes an interaction term between geographical distance and the college-educated indicator. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

In Panels B and C, we explore heterogeneous responses across gender and age groups. Regardless of gender or age, all estimates on the wage differences between source and destination are positive and highly significant. This confirms that local labor market conditions, proxied by wage differentials, are strong determinants of migration flows between LZs in Korea. However, we find that the magnitude of the response is heterogeneous across demographic groups. Females show a higher sensitivity to wage differentials compared to males. Similarly, across age cohorts, the coefficients are significantly larger for the 25–34 age group, suggesting that young adults are the most responsive to local labor market conditions.

While the estimates from the scale equation are intuitive and plausible, they may suffer from bias due to omitted fixed costs of migration. The scale equation assumes that fixed costs are solely a function of observable characteristics of the source-destination pair, leaving unobservable cost components uncontrolled. However, the selection and sorting equations mitigate this concern by differencing out these fixed costs, as demonstrated in equations (5) and (6).

Table 4 presents the results from the selection equation. Here, the unit of observation is the source-destination pair. The dependent variable is defined as the log skill ratio of migrants from source s to destination h , relative to the log skill ratio of non-migrants (stayers) in source s . The key independent variable is the difference in skill-specific wage premiums between the destination and the source. Standard errors are clustered at the destination LZ level.

Panel A reports the results for the full population. The coefficients in columns (1) and (2) are positive and highly statistically significant, consistent with the findings from the scale regressions in Table 3. Specifically, the estimate in column (1) indicates that a 1,000 KRW increase in the skill-specific wage differential between college and non-college workers is associated with a 0.2 percent increase in the degree of positive selection. These results suggest that wage differentials between the source and destination are strong predictors of migrant selection. In other words, as the wage gap between the source and destination is greater for high-education workers, migrants tend to be more positively selected in terms of education.

Table 4. Selection of migrants, 2015-2020

	(1)	(2)	(3)	(4)
A. All				
Monthly wage gap diff. (college–non-college, dest.–source, 2015)	0.002*** (0.001)			
Hourly wage gap diff. (college–non-college, dest.–source, 2015)		0.330*** (0.110)		
Control variables	YES	YES		
Observations	2,204	2,204		
R-squared	0.109	0.108		
B. by gender				
	Male	Male	Female	Female
Monthly wage gap diff. (college–non-college, dest.–source, 2015)	0.002*** (0.001)		0.001 (0.001)	
Hourly wage gap diff. (college–non-college, dest.–source, 2015)		0.274** (0.111)		-0.018 (0.169)
Control variables	YES	YES	YES	YES
Observations	2,024	2,024	1,990	1,990
R-squared	0.100	0.098	0.118	0.118
C. by age group				
	Aged 25-34	Aged 25-34	Aged 35-50	Aged 35-50
Monthly wage gap diff. (college–non-college, dest.–source, 2015)	0.002 (0.001)		0.003*** (0.001)	
Hourly wage gap diff. (college–non-college, dest.–source, 2015)		-0.170 (0.288)		0.429*** (0.103)
Control variables	YES	YES	YES	YES
Observations	1,968	1,968	2,011	2,011
R-squared	0.100	0.099	0.114	0.112

Notes: The dependent variable is the log ratio of college to non-college educated migrants from source to destination between 2015 and 2020 minus the log ratio of college to non-college educated migrants in the source in 2015. Explanatory variables include the difference in the wage gap between college- and non-college-educated individuals across destination and source regions, measured in 2015 using both monthly and hourly earnings. Control variables include amenity indicators, housing price indices, the geographical distance between regions, dummies for the presence of a KTX or SRT station, and dummies for the presence of an innovation city in the destination region. Amenity variables include the number of nursery facilities per 1,000 infants, tutoring facilities per 1,000 residents, waste per resident, cultural facilities per 100,000 residents, senior facilities per 1,000 seniors, transportation culture index, traffic accidents per 1,000 cars, and average class size—each measured in 2015 for the destination. Housing controls include the average sale price index and average rental price index for apartments and houses in the destination. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Panels B and C present heterogeneous results by gender and age. Unlike the results for the full population, the findings for these subgroups diverge slightly from the scale equation results in Table 3. Specifically, regarding gender, the estimated coefficients for males are slightly larger than those for females, whereas the estimates for females are statistically insignificant. Similarly, we observe distinct patterns across age groups; while the estimates for the older cohort (aged 35–50) are positive and significant, those for the younger group are not significant. This discrepancy with the findings in Table 3 is likely attributable to the omitted fixed costs of migration, which biased the earlier estimates. In sum, our results suggest that male and older workers exhibit stronger positive selection on education as the skill-specific wage gap in the destination increases.

We also analyze the sorting of internal migrants in Table 5. In the sorting equations, the unit of observation remains the source-destination pair, but the dependent variable is defined as the log skill ratio of migrants moving from source s to destination h . Similar to the selection equation, the key independent variable is the skill-specific wage differential at the destination LZ. Standard errors are clustered by destination LZ.

A key distinction between the sorting and selection specifications is the inclusion of source LZ fixed effects (τ_s) in the sorting equation. These fixed effects absorb any time-invariant characteristics of the source LZ. In contrast, the selection equation accounts for source characteristics only implicitly by subtracting the source-level non-migrant ratio from the dependent variable. Consequently, the sorting equation yields the most reliable estimates compared to the scale or selection equations, as it mitigates bias from omitted source-level factors—such as population aging or local economic decline—that might otherwise confound the results.

In Table 5, we again find significant positive effects for the full population (Panel A), suggesting that highly educated workers strongly sort into LZs with larger skill-specific wage differentials. Specifically, column (1) indicates that a 1,000 KRW increase in the wage gap between college and non-college workers at the destination is associated with a 0.6 percent increase in the degree of sorting. These findings imply that the pronounced concentration of highly educated workers in the Seoul Metropolitan Area during 2010–2015 was driven, at least in part, by the higher skill premium (wage gap) offered in that region.

Table 5. Sorting of migrants, 2015-2020

	(1)	(2)	(3)	(4)
A. All				
Monthly wage gap (college–non-college, destination, 2015)	0.006*** (0.002)			
Hourly wage gap (college–non-college, destination, 2015)		1.074*** (0.282)		
Control variables	YES	YES		
Observations	2,204	2,204		
R-squared	0.254	0.253		
B. by gender				
	Male	Male	Female	Female
Monthly wage gap (college–non-college, destination, 2015)	0.004*** (0.001)		0.002 (0.002)	
Hourly wage gap (college–non-college, destination, 2015)		0.651*** (0.196)		0.242 (0.313)
Control variables	YES	YES	YES	YES
Observations	2,024	2,024	1,990	1,990
R-squared	0.234	0.234	0.242	0.242
C. by age group				
	Aged 25-34	Aged 25-34	Aged 35-50	Aged 35-50
Monthly wage gap (college–non-college, destination, 2015)	0.006** (0.002)		0.004*** (0.001)	
Hourly wage gap (college–non-college, destination, 2015)		0.341 (0.581)		0.691*** (0.204)
Control variables	YES	YES	YES	YES
Observations	1,968	1,968	2,011	2,011
R-squared	0.258	0.255	0.204	0.204

Notes: The dependent variable is the log ratio of college to non-college educated migrants from source to destination between 2015 and 2020. Explanatory variables include the wage gap between college- and non-college-educated individuals within the destination region, measured in 2015 using both monthly and hourly earnings. Control variables include amenity indicators, housing price indices, the geographical distance between regions, dummies for the presence of a KTX or SRT station, and dummies for the presence of an innovation city in the destination region. Amenity variables include the number of nursery facilities per 1,000 infants, tutoring facilities per 1,000 residents, waste per resident, cultural facilities per 100,000 residents, senior facilities per 1,000 seniors, transportation culture index, traffic accidents per 1,000 cars, and average class size—each measured in 2015 for the destination. Housing controls include the average sale price index and average rental price index for apartments and houses in the destination. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Panels B and C present heterogeneous results by gender and age. Consistent with the findings in Table 4, the sorting of workers into regions with higher wage differentials between college and non-college workers is more pronounced for male and older workers. This gender disparity may imply that, while both groups respond to wage incentives, female migrants are relatively more sensitive to non-market factors, such as local amenities, compared to their male counterparts. For instance, female workers may place a higher value on local amenities (or dis-amenities) when making location decisions.

Since our dependent variables are specified in logarithms, source-destination pairs with zero migration flows are automatically dropped from the estimation. To address potential bias arising from these omitted observations, we conduct a robustness check in Appendix Table A1 by imputing a value of one for zero-flow observations and re-estimating the sorting regressions. We find that this imputation does not qualitatively alter our main results, confirming the robustness of the positive sorting of skilled workers into regions with high wage gaps. Specifically, the skill-specific wage differential at the destination remains positively associated with the inflow of highly educated migrants. While this does not constitute a comprehensive analysis of zero-migration cells (e.g., via Poisson selection models), it suggests that sample selection bias due to zero flows is not a significant concern in our context.

2. Results for 2010–2015

Thus far, our primary analysis has focused on the 2015–2020 period, a time characterized by a marked concentration of skilled workers in the Seoul Metropolitan Area (SMA), as shown in Figure 1. Consequently, there is a concern that our findings regarding the strong selection and sorting of skilled workers may be specific to this period. To address this, we extend our analysis to the preceding period (2010–2015), during which the trend of concentration toward the SMA was less pronounced or moderated. Comparing the magnitude of estimates across these two periods allows us to examine how the selection and sorting mechanisms of college-educated workers vary with broader agglomeration trends. For instance, while worker mobility in 2010–2015 may still align with the income maximization framework, we hypothesize that the magnitude of the sorting estimates would be smaller during this period of slower concentration.

Accordingly, we re-estimate the scale, selection, and sorting regressions for the 2010–2015 period. Table 6 presents the results from the sorting regressions, while the scale and selection regression results are reported in the Appendix (Table A2 and A3). Notably, the estimated coefficients for this period are generally smaller in magnitude than those observed for 2015–2020 (Table 5). Specifically, the estimate in column (1) is not statistically significant, although column (2) continues to show that skilled workers sort into LZs with larger skill-specific wage differentials. These findings suggest that the moderated concentration in the SMA during 2010–2015 can be partially attributed to a weaker sorting response of skilled workers to spatial wage differentials.

Table 6. Sorting of migrants, 2010-2015

	(1)	(2)	(3)	(4)
A. All				
Monthly wage gap (college–non-college, destination, 2010)	0.002 (0.002)			
Hourly wage gap (college–non-college, destination, 2010)		0.960** (0.357)		
Control variables	YES	YES		
Observations	1,362	1,362		
R-squared	0.240	0.245		
B. by gender				
	Male	Male	Female	Female
Monthly wage gap (college–non-college, destination, 2010)	0.004*** (0.001)		0.001 (0.004)	
Hourly wage gap (college–non-college, destination, 2010)		1.023*** (0.197)		0.852 (0.640)
Control variables	YES	YES	YES	YES
Observations	1,348	1,348	1,333	1,333
R-squared	0.211	0.219	0.177	0.180
C. by age group				
	Aged 25-34	Aged 25-34	Aged 35-50	Aged 35-50
Monthly wage gap (college–non-college, destination, 2010)	0.003 (0.008)		0.001 (0.002)	
Hourly wage gap (college–non-college, destination, 2010)		-0.190 (1.045)		0.406 (0.376)
Control variables	YES	YES	YES	YES
Observations	1,241	1,241	1,211	1,211
R-squared	0.271	0.271	0.195	0.196

Notes: The dependent variable is the log ratio of college to non-college educated migrants from source to destination between 2010 and 2015. Explanatory variables include the wage gap between college- and non-college-educated individuals within the destination region, measured in 2010 using both monthly and hourly earnings. Control variables include amenity indicators, housing price indices, the geographical distance between regions, dummies for the presence of a KTX or SRT station, and dummies for the presence of an innovation city in the destination region. Amenity variables include the number of nursery facilities per 1,000 infants, tutoring facilities per 1,000 residents, waste per resident, cultural facilities per 100,000 residents, senior facilities per 1,000 seniors, transportation culture index, traffic accidents per 1,000 cars, and average class size—each measured in 2010 for the destination. Housing controls include the average sale price index and average rental price index for apartments and houses in the destination. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

When we conduct subsample analyses by gender and age, the attenuation of sorting behavior becomes even more evident. For instance, while we still observe significant sorting among male workers (Panel B), none of the estimates in Panel C are statistically significant. These results further indicate that the sorting mechanism for college-educated workers was relatively weaker during this period. Overall, the analysis of the 2010–2015 period implies that the reduced concentration in the SMA is consistent with a weaker responsiveness of skilled workers to skill-specific wage differentials.

3. Heterogeneity

As discussed before, an interesting pattern in internal migration within Korea is the significant sorting of skilled migrants to SMA. For instance, the education of migrants from SMA is lower than non-migrants in SMA, unlike other LZs (as shown in Figure 2). At the same time, there was a significant increase in population in SMA during the period of our analysis 2015–2020. This may indicate that the sorting of migrants into SMA is different from that in other LZs.

To look for such heterogeneity, in Table 7, we re-run sorting regressions for the sub-samples of LZs in SMA and non-SMA, based on the destination. While we still find strong positive estimates of the absolute wage gap by skill level at the destination, the estimates for LZs in SMA are significantly larger than those for LZs in non-SMA. Specifically, for both monthly and hourly wage gap, the estimates for SMA is approximately 50 percent larger than those for non-SMA. At the same time, the results in non-SMA are not much different from those in Table 5. Because these results explain that migrants sort into LZs in SMA more strongly in response to the wage gap, there are other factors that highly educated individuals prefer to live in SMA. This well aligns with the fact that there has been a significant increase in highly educated population in SMA.

Table 7. Sorting of migrants, capital and non-capital area, 2015-2020

	(1)	(2)	(3)	(4)
	Capital	Capital	Non-capital	Non-capital
Monthly wage gap, 2015	0.009** (0.001)		0.006*** (0.002)	
Hourly wage gap, 2015		1.426** (0.165)		1.082*** (0.334)
Control variables	YES	YES	YES	YES
Observations	168	168	2,036	2,036
R-squared	0.686	0.686	0.245	0.245

Notes: The dependent variable is the log ratio of college to non-college educated migrants from source to destination between 2015 and 2020. Explanatory variables include the wage gap between college- and non-college-educated individuals within the destination region, measured in 2015 using both monthly and hourly earnings. Control variables include amenity indicators, housing price indices, the geographical distance between regions, dummies for the presence of a KTX or SRT station, and dummies for the presence of an innovation city in the destination region. Amenity variables include the number of nursery facilities per 1,000 infants, tutoring facilities per 1,000 residents, waste per resident, cultural facilities per 100,000 residents, senior facilities per 1,000 seniors, transportation culture index, traffic accidents per 1,000 cars, and average class size—each measured in 2015 for the destination. Housing controls include the average sale price index and average rental price index for apartments and houses in the destination. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Note that we control for some observable amenities at the LZ-level in the sorting regressions, and thus the characteristics that derive the difference in Table 7 is not fully driven by factors such as housing prices or cultural infrastructures. While there are many possible explanations, there are some explanations that are consistent with the sorting into SMA. For instance, Diamond (2016) documents that highly educated individuals prefer to relocate to areas with higher education, because they are themselves compositional amenities (Card, 2012). Related to that, young individuals may prefer to large cities because of better matching in marriage market (Gautier et al., 2010).

All in all, our heterogeneity analysis indicates that the strong imbalance between regions in SMA and those in non-SMA is not purely driven by the labor market productivity. Although, the wage gap between skill is certainly consistent with the sorting of migrants, other unobservable aspects such as compositional amenities are also very important in explaining the unbalance across regions in South Korea.

V. Conclusion

This paper investigates the selection and sorting patterns of internal migrants in South Korea during the late 2010s, applying the income maximization framework of Grogger and Hanson (2011). We find suggestive evidence that internal migration decisions are primarily driven by absolute skill-related wage differences across regions. Consistently, we observe that migrants are positively selected on education, and the inflow of highly educated workers is systematically higher in regions with larger absolute wage differentials—particularly in the Seoul Metropolitan Area (SMA).

Importantly, our results imply that internal migration not only reinforces regional disparities in skill composition but may also amplify economic inequalities across space. As high-skilled individuals increasingly cluster in high-wage regions, these areas may enjoy compounding benefits in productivity, innovation, and amenities—while other regions risk stagnation. Understanding these dynamics is crucial for policymakers aiming to address regional inequality and promote balanced growth.

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Appendix

Table A1. Sorting of migrants, dealing with zeros, 2015-2020

	(1)	(2)	(3)	(4)
A. All				
Monthly wage gap (college–non-college, destination, 2015)	0.007*** (0.002)			
Hourly wage gap (college–non-college, destination, 2015)		1.272*** (0.330)		
Control variables	YES	YES		
Observations	2,371	2,371		
R-squared	0.199	0.199		
B. by gender				
	Male	Male	Female	Female
Monthly wage gap (college–non-college, destination, 2015)	0.004*** (0.001)		0.003 (0.002)	
Hourly wage gap (college–non-college, destination, 2015)		0.777*** (0.210)		0.515 (0.338)
Control variables	YES	YES	YES	YES
Observations	2,332	2,332	2,315	2,315
R-squared	0.159	0.159	0.175	0.175
C. by age group				
	Aged 25-34	Aged 25-34	Aged 35-50	Aged 35-50
Monthly wage gap (college–non-college, destination, 2015)	0.004 (0.003)		0.005*** (0.001)	
Hourly wage gap (college–non-college, destination, 2015)		-0.146 (0.768)		0.883*** (0.254)
Control variables	YES	YES	YES	YES
Observations	2,332	2,332	2,298	2,298
R-squared	0.175	0.175	0.154	0.153

Notes: The dependent variable is the log ratio of college to non-college educated migrants from source to destination between 2015 and 2020. Explanatory variables include the wage gap between college- and non-college-educated individuals within the destination region, measured in 2015 using both monthly and hourly earnings. Control variables include amenity indicators, housing price indices, the geographical distance between regions, dummies for the presence of a KTX or SRT station, and dummies for the presence of an innovation city in the destination region. Amenity variables include the number of nursery facilities per 1,000 infants, tutoring facilities per 1,000 residents, waste per resident, cultural facilities per 100,000 residents, senior facilities per 1,000 seniors, transportation culture index, traffic accidents per 1,000 cars, and average class size—each measured in 2015 for the destination. Housing controls include the average sale price index and average rental price index for apartments and houses in the destination. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A2. Scale of migrants, 2010-2015

	(1)	(2)	(3)	(4)
A. All				
Monthly wage diff. (same skill, dest.–source, 2010)	0.004 (0.003)			
Hourly wage diff. (same skill, dest.–source, 2010)		0.677 (0.645)		
Control variables	YES	YES		
Observations	2,724	2,724		
R-squared	0.599	0.599		
B. by gender				
	Male	Male	Female	Female
Monthly wage diff. (same skill, dest.–source, 2010)	0.003 (0.003)		0.009** (0.004)	
Hourly wage diff. (same skill, dest.–source, 2010)		0.622 (0.455)		1.787*** (0.611)
Control variables	YES	YES	YES	YES
Observations	2,710	2,710	2,693	2,693
R-squared	0.610	0.611	0.618	0.620
C. by age group				
	Aged 25-34	Aged 25-34	Aged 35-50	Aged 35-50
Monthly wage diff. (same skill, dest.–source, 2010)	0.001 (0.006)		0.003 (0.002)	
Hourly wage diff. (same skill, dest.–source, 2010)		-0.320 (1.043)		0.591 (0.397)
Control variables	YES	YES	YES	YES
Observations	2,603	2,603	2,553	2,553
R-squared	0.573	0.573	0.557	0.557

Notes: The dependent variable is the log ratio of emigrants in the destination to the population in the source for the college or non-college skill group. Explanatory variables include the same-skill wage difference between destination and source regions, measured in 2010 using both monthly and hourly earnings. Control variables include amenity variables, housing price indices, the geographical distance between regions, dummies for the presence of a KTX or SRT station, and dummies for the presence of an innovation city in the destination region. Amenity controls include the number of nursery facilities per 1,000 infants, number of tutoring facilities per 1,000 residents, waste per resident, number of cultural facilities per 100,000 residents, number of senior facilities per 1,000 seniors, the transportation culture index, traffic accidents per 1,000 cars, and average class size—each measured in 2010 for the destination. Housing price controls include the average apartment and house sale price index and the average rental price index, measured in 2010 for the destination. The specification additionally includes an interaction term between geographical distance and the college-educated indicator. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A3. Selection of migrants, 2010-2015

	(1)	(2)	(3)	(4)
A. All				
Monthly wage gap diff. (college–non-college, dest.–source, 2010)	0.002** (0.001)			
Hourly wage gap diff. (college–non-college, dest.–source, 2010)		0.479** (0.195)		
Control variables	YES	YES		
Observations	1,362	1,362		
R-squared	0.105	0.107		
B. by gender				
	Male	Male	Female	Female
Monthly wage gap diff. (college–non-college, dest.–source, 2010)	0.003*** (0.001)		0.000 (0.001)	
Hourly wage gap diff. (college–non-college, dest.–source, 2010)		0.659*** (0.138)		0.501* (0.245)
Control variables	YES	YES	YES	YES
Observations	1,348	1,348	1,333	1,333
R-squared	0.071	0.080	0.064	0.069
C. by age group				
	Aged 25-34	Aged 25-34	Aged 35-50	Aged 35-50
Monthly wage gap diff. (college–non-college, dest.–source, 2010)	0.001 (0.002)		0.002*** (0.001)	
Hourly wage gap diff. (college–non-college, dest.–source, 2010)		-0.012 (0.334)		0.282** (0.134)
Control variables	YES	YES	YES	YES
Observations	1,241	1,241	1,211	1,211
R-squared	0.152	0.152	0.076	0.075

Notes: The dependent variable is the log ratio of college to non-college educated migrants from source to destination between 2010 and 2015 minus the log ratio of college to non-college educated migrants in the source in 2010. Explanatory variables include the difference in the wage gap between college- and non-college-educated individuals across destination and source regions, measured in 2010 using both monthly and hourly earnings. Control variables include amenity indicators, housing price indices, the geographical distance between regions, dummies for the presence of a KTX or SRT station, and dummies for the presence of an innovation city in the destination region. Amenity variables include the number of nursery facilities per 1,000 infants, tutoring facilities per 1,000 residents, waste per resident, cultural facilities per 100,000 residents, senior facilities per 1,000 seniors, transportation culture index, traffic accidents per 1,000 cars, and average class size—each measured in 2010 for the destination. Housing controls include the average sale price index and average rental price index for apartments and houses in the destination. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

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7	은행의 수익 및 자산구조를 반영한 통화정책 위험선호경로	김의진 · 정호성
8	혁신기업에 대한 산업금융 지원: 이론모형 분석	강경훈 · 양준구
9	가계부채 제약하의 통화정책: 2주체 거시모형 (TANK)에서의 정량적 분석	정용승 · 송승주
10	Alchemy of Financial Innovation: Securitization, Liquidity and Optimal Monetary Policy	Jungu Yang
11	Measuring Monetary Policy Surprises Using Text Mining: The Case of Korea	Youngjoon Lee · Soohyon Kim · Ki Young Park
12	Tracking Uncertainty through the Relative Sentiment Shift Series	Seohyun Lee · Rickard Nyman
13	Intra-firm and Arm's Length Trade during the Global Financial Crisis: Evidence from Korean Manufacturing Firms	Moon Jung Choi · Ji Hyun Eum

14	특허자료를 이용한 우리나라 지식전파의 지역화 분석	이지홍 · 남윤미
15	Overhead Labour and Skill-Biased Technological Change: The Role of Product Diversification	Choong Hyun Nam
16	Does the Number of Countries in an International Business Cycle Model Matter?	Myunghyun Kim
17	High-Frequency Credit Spread Information and Macroeconomic Forecast Revision	Bruno Deschamps · Christos Ioannidis · Kook Ka
18	경제 분석을 위한 텍스트 마이닝	김수현 · 이영준 · 신진영 · 박기영
19	Takeover, Distress, and Equity Issuance: Evidence from Korea	Euna Cho
20	The Cash-Flow Channel of Monetary Policy: Evidence from Mortgage Borrowers	Sang-yoon Song
21	부의 효과의 분위 추정: 분위 정준 공적분회귀를 중심으로	김기호
22	Identifying Government Spending Shocks and Multipliers in Korea	Kwangyong Park · Eun Kyung Lee
23	Systemic Risk of the Consumer Credit Network across Financial Institutions	Hyun Hak Kim · Hosung Jung
24	Impact of Chinese Renminbi on Korean Exports: Does Quality Matter?	Jihyun Eum
25	Uncertainty, Credit and Investment: Evidence from Firm-Bank Matched Data	Youngju Kim · Seohyun Lee · Hyunjoon Lim
26	A Structural Change in the Trend and Cycle in Korea	Nam Gang Lee · Byoung Hoon Seok

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2	달러라이제이션이 확산된 북한경제에서 보유외화 감소가 물가·환율에 미치는 영향	문성민 · 김병기
3	상태공간 벡터오차수정모형을 이용한 월별 GDP 추정: 깃스표본추출 접근	김기호
4	우리나라 외환시장 오퍼레이션의 행태 및 환율변동성 완화 효과	박준서 · 최경욱
5	Common Factor Augmented Forecasting Models for the US Dollar–Korean Won Exchange Rate	Hyeongwoo Kim · Soohyon Kim
6	북한「경제연구」로 분석한 경제정책 변화: 텍스트 마이닝 접근법	김수현 · 손 욱
7	북한의 광물 수출과 품목별 수입: 대중무역을 중심으로	김병연 · 김민정 · 김다울
8	Network–Based Measures of Systemic Risk in Korea	Jaewon Choi · Jieun Lee
9	Aggregate Productivity Growth and Firm Dynamics in Korean Manufacturing 2007–2017	Kyoo il Kim · Jin Ho Park
10	2001년 이후 한국의 노동생산성 성장과 인적자본: 교육의 질적 개선 효과를 중심으로	유혜미
11	House Prices and Household Consumption in Korea	Seungyeon Lee
12	글로벌 가치사슬 변화가 경제성장에 미치는 영향: 2008년 금융위기 전후 전·후방참여 효과의 국제비교를 중심으로	김세완 · 최문정
13	산업구조조정이 고용 및 성장에 미치는 영향	서병선 · 김태경
14	Cross–border Trade Credit and Trade Flows During the Global Financial Crisis	Moon Jung Choi · Sangyeon Hwang · Hyejoon Im

15	International Co-movements and Determinants of Public Debt	Hasan Isomitdinov · Vladimir Arčabić · Junsoo Lee · Youngjin Yun
16	북한 비공식금융 실태조사 및 분석·평가	이주영 · 문성민
17	북한의 장기 경제성장률 추정: 1956~1989년	조태형 · 김민정
18	Macroeconomic and Financial Market Analyses and Predictions through Deep Learning	Soohyon Kim
19	제조업의 수출과 생산성 간 관계 분석: 사업체 자료 이용	이윤수 · 김원혁 · 박진호
20	우리나라 제조업 수출기업의 내수전환 결정요인 분석	남윤미 · 최문정
21	A Model of Satisficing Behaviour	Rajiv Sarin · Hyun Chang Yi
22	Vulnerable Growth: A Revisit	Nam Gang Lee
23	Credit Market Frictions and Coessentiality of Money and Credit	Ohik Kwon · Manjong Lee
24	북한의 자본스톡 추정 및 시사점	표학길 · 조태형 · 김민정
25	The Economic Costs of Diplomatic Conflict	Hyejin Kim · Jungmin Lee
26	Central Bank Digital Currency, Tax Evasion, Inflation Tax, and Central Bank Independence	Ohik Kwon · Seungduck Lee · Jaevin Park
27	Consumption Dynamics and a Home Purchase	Dongjae Jung
28	자본유입과 물가상승률 간의 동태적 상관관계 분석: 아시아의 8개국 소규모 개방경제를 중심으로	최영준 · 손종철
29	The Excess Sensitivity of Long-term Interest rates and Central Bank Credibility	Kwangyong Park

30	Wage and Employment Effects of Immigration: Evidence from Korea	Hyejin Kim
제2021-1	외국인력 생산성 제고 방안—직업훈련 프로그램의 노동시장 성과 분석을 중심으로	김혜진 · 이철희
2	한국경제의 추세 성장률 하락과 원인	석병훈 · 이남강
3	Financial Globalization: Effects on Banks' Information Acquisition and Credit Risk	Christopher Paik
4	The Effects of Monetary Policy on Consumption: Workers vs. Retirees	Myunghyun Kim · Sang-yeon Song
5	북한지역 토지자산 추정에 관한 연구: 프레임워크 개발 및 탐색적 적용	임송
6	김정은 시대 북한의 금융제도 변화 - 북한 문헌 분석을 중심으로 -	김민정 · 문성민
7	Chaebols and Firm Dynamics in Korea	Philippe Aghion · Sergei Guriev · Kangchul Jo
8	한국의 화폐환상에 관한 연구	권오익 · 김규식 · 황인도
9	재원조달 방법을 고려한 재정지출 효과 분석 : 미국의 사례를 중심으로	김소영 · 김용건
10	The Impact of Geopolitical Risk on Stock Returns: Evidence from Inter-Korea Geopolitics	Seungho Jung · Jongmin Lee · Seohyun Lee
11	Real Business Cycles in Emerging Countries: Are Asian Business Cycles Different from Latin American Business Cycles?	Seolwoong Hwang · Soyoung Kim
12	우리 수출의 글로벌 소득탄력성 하락 요인 분석	김경근
13	북한의 경제체제에 관한 연구: 실태와 평가	양문수 · 임송
14	Distribution-Dependent Value of Money: A Coalition-Proof Approach to Monetary Equilibrium	Byoung-Ki Kim · Ohik Kwon · Suk Won Lee

15	A Parametric Estimation of the Policy Stance from the Central Bank Minutes	Dong Jae Jung
16	The Immigrant Wage Gap and Assimilation in Korea	Hyejin Kim · Chulhee Lee
17	Monetary Non-Neutrality in a Multisector Economy: The Role of Risk-Sharing	Jae Won Lee · Seunghyeon Lee
18	International Transmission of Chinese Monetary Policy Shocks to Asian Countries	Yujeong Cho · Soyoung Kim
19	The Impact of Robots on Labor Demand: Evidence from Job Vacancy Data for South Korea	Hyejin Kim
20	전공 불일치가 불황기 대출 취업자의 임금에 미치는 장기 효과 분석	최영준
21	Upstream Propagation of the U.S.–China Trade War	Minkyu Son
제2022-1	Immigration and Natives' Task Specialization: Evidence from Korea	Hyejin Kim · Jongkwan Lee
2	Transmission of Global Financial Shocks: Which Capital Flows Matter?	Bada Han
3	Measuring the Effects of LTV and DTI Limits: A Heterogeneous Panel VAR Approach with Sign Restrictions	Soyoung Kim · Seri Shim
4	A Counterfactual Method for Demographic Changes in Overlapping Generations Models	Byongju Lee
5	Housing Wealth, Labor Supply, and Retirement Behavior: Evidence from Korea	Jongwoo Chung
6	Demand Shocks vs. Supply Shocks: Which Shocks Matter More in Income and Price Inequality?	Seolwoong Hwang · Kwangwon Lee · Geunhyung Yim

7	Financial Literacy and Mutual Fund Retail Investing: Evidence from Korea During the 2008 Financial Crisis	Jongwoo Chung · Booyuel Kim
8	Exchange Rate Regime and Optimal Policy: The Case of China	Yujeong Cho · Yiping Huang · Changhua Yu
9	북한 수출입단가지수 추정: 북중무역 데이터를 중심으로	이종민 · 김민정
10	탄소배출을 감안한 국가별 녹색 총요소생산성 분석	안상기
11	북한 소비자 지급수단 조사 및 분석	이주영
12	Selection into Outsourcing versus Integration Strategies for Heterogeneous Multinationals	Sangho Shin
13	Central Bank Digital Currency and Privacy: A Randomized Survey Experiment	Syngjoo Choi · Bongseop Kim · Young Sik Kim · Ohik Kwon
14	Technological Change, Job Characteristics, and Employment of Elderly Workers: Evidence from Korea	Jongwoo Chung · Chulhee Lee
15	Machine-Learning-Based News Sentiment Index (NSI) of Korea	Beomseok Seo · Younghwan Lee · Hyungbae Cho
16	빅데이터를 이용한 실시간 민간소비 예측	신승준 · 서범석
17	Fixed Effects Quantile Estimations with Extended Within Transformation and their Application	Ki-Ho Kim
18	글로벌 금융위기 이후 가계소비행태 변화 분석: 세대별 소비행태를 중심으로	최영준
19	Optimal Monetary Policy under Heterogeneous Consumption Baskets	Seunghyeon Lee

20	통화정책 충격이 생산과 물가에 미치는 효과의 국가별 차이 및 결정요인	임근형 · 나승호 · 오다운
제2023-1	Shocks, Frictions, and Inequality in Korean Business Cycles	Seungcheol Lee · Ralph Luetticke · Morten O. Ravn
2	소득동질화와 가구구조가 가구소득 불평등에 미치는 영향: 국제비교를 중심으로	박용민 · 허 정
3	Dominant Currency Pricing: Evidence from Korean Exports	Minkyu Son
4	Banking Crisis, Venture Capital and Innovation	Chun-Yu Ho · Won Sung
5	Can Robots Save Workers? The Effects of Robots on Workplace Injuries and Workers' Health in Korea	Hyejin Kim
6	International Reserve Accumulation: Balancing Private Inflows with Public Outflows	Bada Han · Dongwook Kim · Youngjin Yun
7	Global Bank Branches and Financial Stability: How Do Global Bank Branches Amplify Financial Shocks?	Yoocheol Noh
8	인구구조 변화에 따른 산업별 고용인력 변화와 정책대안별 효과 추정: 여성, 고령자, 외국인 고용확대를 중심으로	김혜진 · 정종우
9	북한 장기 수출입 데이터 재구축 및 분석 : 1962~2018년	김민정 · 김다울
10	Econometric Forecasting Using Ubiquitous News Text: Text-enhanced Factor Model	Beomseok Seo
11	Changes in Inflation Dynamics in Korea: Global Factor, Country Factor, and their Propagation	Yun Jung Kim · Noh-Sun Kwark
12	Financial Technologies and the Effectiveness of Monetary Policy Transmission	Iftekhar Hasan · Boreum Kwak · Xiang Li

13	북한의 시장물가: 2006~2022	임 송 · 문승현
14	지난 60년 경제환경변화와 한국기업 재무지표 변화: 『기업경영분석』(1961~2021)에 나타난 지표를 중심으로 Korea's Economic Policy Changes: Reflected in the Corporate Financial Indicators During the Last 60 Years	조윤제 · 최연교
15	Extended Two-Way Fixed Effects Quantile Cointegration Regression and Its Application	Ki-Ho Kim
16	In Search of the Origin of Original Sin Dissipation	Bada Han · Jangyoun Lee · Taehee Oh
17	대규모·비선형 베이지안 VAR 모형을 활용한 한국 거시경제 전망 및 시나리오 분석	강규호 · 김도완
18	Does the Uncovered Interest Parity Hold in Korea?	Joonyoung Hur · Kwanho Shin
19	북한이탈주민의 건강과 경제적 적응에 대한 연구: 국민건강정보DB 분석을 중심으로	정승호 · 위혜승 · 이종민
20	The Credit-Driven Business Cycles in South Korea: How Important is the Credit Supply Channel?	Nam Gang Lee · Seungho Nah
21	The Effects of Monetary Policy Shocks on Inflation Heterogeneity: The Case of Korea	Seolwoong Hwang
22	Dollar and Government Bond Liquidity: Evidence from Korea	Jieun Lee
23	우리나라의 가계부채와 소득불평등	김수현 · 황설웅
24	초저출산의 경제적·비경제적 원인: 설문 실험을 통한 분석	남윤미 · 황인도
25	한국경제 80년(1970-2050) 및 미래 성장전략 Eighty Years of the Korean Economy (1970-2050): The Past and a Future Growth Strategy	조태형

26	국내 기후변화 물리적 리스크의 실물경제 영향 분석	이지원
27	Point and Risk estimation using an enSemble of Models for Nowcasting: PRISM-Now	Beomseok Seo · Hyungbae Cho · Dongjae Lee
28	Does the Target Matter? Evidence from Labor Supply Decisions of Fishermen	Eseul Choi
29	북한이탈주민 조사를 통해 본 북한 출산율 하락 추세와 남북한 인구통합에 대한 시사점	이주영 · 김선중
제2024-1	The Evolution of the Response of Credit Spread Variables to Monetary Policy Shocks	Do wan Kim
2	Uncertainty and the Impacts of Structural Oil Shocks on the Korean Economy	Soojin Jo · Myungkyu Shim
3	수출대상국의 무역기술장벽(TBT)이 한국 수출에 미치는 영향 분석: 수출의 내·외연적 한계와 산업 특성에 따른 비교	장용준 · 신상호
4	개인 특성별 이질적 인플레이션율과 실질 소비 탄력성	유재인 · 민찬호 · 정호성
5	실업경험이 가계소비에 미치는 장기효과 분석	최영준
6	Central Bank Digital Currency, Real Effect and Welfare	Seonghoon Cho
7	우리나라 노동시장 상황과 인플레이션 간의 관계 변화	허준영 · 채민석
8	Is there an information channel of monetary policy?	Oliver Holtemöller · Alexander Kriwoluzky · Boreum Kwak
9	Inflation Disagreement and Monetary Transmission in Korea	Boreum Kwak · Seri Shim · Peter Tillmann
10	Using Density Forecast for Growth-at-Risk to Improve Mean Forecast of GDP Growth in Korea	Yoosoon Chang · Yong-gun Kim · Boreum Kwak · Joon Y. Park
11	수익률곡선 추세와 기간 프리미엄	강규호 · 구병수
12	Digital Literacy and Physical Cash Demand during the COVID-19 Pandemic	Kyeongtae Lee · Jaevin Park
13	Exploring the Natural Interest Rate in Korea: A Multi-Model Approach	Kyeongtak Do · Ju Hyun Ahn · Hae Ri Jung

제2025 -1	북한지역 저출생 발생원인에 대한 실증적 접근	이주영, 김기호
2	The Impact of Global Supply Chain Shock on Production Costs	Bongseok Choi · Hyun Hak Kim · Sangho Shin
3	BOK-LOOK: A Semi-Structural Model for Korea's Open Economy and Monetary Policy Analysis	Seungryul Jeong · Seokil Kang · Hyungbae Cho · Jinwoon Yoon · Dongjae Lee
4	기후변화가 한국 노동시장에 미치는 영향	심명규, 조수진
5	인플레이션 경험이 주택수요에 미치는 영향 분석	최영준
6	A Properly Ordered Zero Sign Restrictions on VARX for a Small Open Economy	Ki-Ho Kim
7	Monetary and central bank information shocks: Tales from alternative identifications	Bosung Jang · Inhwan So
8	Monetary-Fiscal Policy Mix and Inflation in Korea	Sora Chon · Wongi Kim · Seri Shim
9	Investment Giants in Emerging Markets	Daisoon Kim · Jee Won Park · Inhwan So
10	Demand for Home Pension and Reverse Mortgage: An Information Provision Survey Experiment	Duk Gyo Kim · In Do Hwang
11	A Large Bayesian Vector Autoregression of the Yield Curve and Macroeconomic Variables with No-Arbitrage Restriction	Sunho Lee · Kyu Ho Kang
12	Demographic Shifts and the Real Interest Rate in an Open Economy: The Case of Korea	Jae Won Lee · Woong Yong Park · Seolwoong Hwang
13	Population Aging and Financial Stability: An Empirical Analysis	Hun Jang
14	Macroeconomic Impacts of Climate Change under NGFS Scenarios	Young-Han Kim · Bok-Keun Yu

15	Effect of Climate Change on the Korean Economy: Aggregated VAR with Functional Data	Jihyun Kim · Boreum Kwak
16	인구변화가 지역별 노동시장에 미치는 영향 분석	이철희 · 정종우
17	Dollar Dominance and International Spillovers of US Financial Shocks	Minkyu Son
18	The Earned Income Tax Credit and the Tax-benefit Link of Public Pensions	Dongmin Chun
19	Diagnostic Expectations into Housing DSGE and Productive Investment Crowding-Out Effect	Junghyuk Lee · Jinwoon Yoon
20	Public Demand and Financial Implications for Retail CBDC: A Randomized Survey Experiment	Duk Gyo Kim · Ohik Kwon · Seungduck Lee
제2026-1	Predicting the Payment Preference for CBDC: A Discrete Choice Experiment	Syngjoo Choi · Bongseop Kim · Young Sik Kim · Ohik Kwon · Soeun Park
2	주택담보대출 차입자의 금리 선택 분석	최영준
3	U.S.-Korea Yield Synchronization and Its Implications for Monetary Policy Transmission	Jihyun Kim · Somin Kim · Boreum Kwak
4	Brains to the Capital: Wage Gaps and the Regional Sorting of Skilled Migrants in South Korea	Jongwoo Chung · Hyejin Kim · Jongkwan Lee
