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What If Immigrants Had Not Migrated?

Determinants and Consequence of Korean Immigration to the United States

By SeongWoo Lee, Dowell Myers, Seong-Kyu Ha, and Hae Ran Shin*

ABSTRACT. Despite strong theoretical arguments and models about international migration, very few empirical studies rigorously test these arguments and models. The purpose of the present study is to analyze determinants and consequences for international migration, focusing particularly on the returns to post-hoc international migration. The present study compares residential well-being of Korean international migrants in the United States with that of their hypothetical well-being if they had not migrated. Our suggested models of the selectivity corrected returns to various characteristics for immigrants and nonimmigrants enable us to estimate the "opportunity well-being" of individuals and households; that is, the well-being of immigrants-had-they-stayed and of nonimmigrants-if-they-had-immigrated. The data for our analyses are drawn from the 1990 Korea Census Data and the Public Use Microdata Samples (PUMS) of the 1990 U.S. Census. In either case of migrants-had-they-stayed or of nonimmigrants-had-they-migrated, international migration to the United States has a significant and positive effect on the probability of homeownership, especially for women. The results show that the predicted probability of homeownership attainment increases as a result of migration by 15 percent to 16 percent for women and by 8 percent for men. The study concludes that migrating to the United

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States offers better opportunities for homeownership than staying in Korea does, particularly for women.

I

Introduction

INTERNATIONAL MIGRATION HAS BEEN INCREASING throughout the world. More and more people are leaving their mother countries in search of better well-being, such as better job opportunities, education, and quality of life. Increasing research on immigration is due to immigration's emergence as a critical force that changes the world economy. A variety of theoretical models have been proposed to explain why international migration happens, and each domain has its own explanations with different concepts and assumptions about international migration (Massey et al. 1993).

One of the dominant research frameworks in this field is neoclassical theory, which explains that international migration is caused by the difference between economic benefits expected at origin and destination. At the micro level, the theory explains that potential migrants have a belief that immigration offers better opportunities for themselves and for their children than their countries of origin (Borjas 1990). Despite widespread acceptance of this theory by scholars, policymakers, and the public, very few empirical studies have put it to rigorous test in explaining international migration with very limited geographical contexts (Massey et al. 1994).

Most immigration studies employ aggregate-level data from the perspective of labor markets in a host country. Macro studies in general reach conclusions that differ dramatically from the corresponding micro results. It is problematic to interpret the result of aggregate migration models as tests of an individual-based theory of migration behavior. Those studies are unable to respond to the following fundamental questions in the human capital theory of international migration: What if the people had not migrated? Presuming that they migrated for better welfare, did they achieve what they aimed at?

The purpose of the present study is to analyze determinants and consequences for international migration, focusing particularly on the

returns to post-hoc international migration. We will compare the residential well-being of Korean international migrants in the United States with their hypothetical well-being if they had not migrated. Our suggested models of the selectivity corrected returns to various characteristics for immigrants and nonimmigrants enable us to estimate the "opportunity well-being" of individuals and households, that is, the well-being of immigrants-had-they-stayed and of nonimmigrants-if-they-had-immigrated. Using individual-level data, the present study evaluates propositions derived from neoclassical theory and tries to answer the above questions empirically.

II
Background

A FUNDAMENTAL QUESTION OF INTERNATIONAL MIGRATION THEORIES is what motivates people to migrate from one country to another. Even though diverse theories focus on different concepts, objectives, interests, and boundaries, the notion of individual expectation is that one can achieve better well-being through migration (Borjas 1990; Massey et al. 1993). That is, migrants should go to the destination country in which they expect the highest net gain. Not surprisingly, the well-being that immigrants are pursuing in a host country has several aspects. The traditional concept is assimilation, the notion that immigrants adapt over time to their host culture, learning English, acquiring job skills, and working their way toward middle-class status.

Not only neoclassical economics but also three other representative theories view international immigration from an economic aspect. New economics of migration considers migration as a household decision taken to minimize risks to family income or to overcome capital constraints on family production activities. Dual labor market theory argues that international immigration is caused by demand for immigrant labor, and world systems theory sees immigration as a consequence of economic globalization and capital penetration across national boundaries (Massey et al. 1993). From the immigrants' perspective, therefore, immigration is a human capital investment.

International migration can be conceptualized as a form of

investment in human capital in a microeconomic model of individual choice. In this view, potential migrants estimate the costs and benefits of moving to alternative international locations and migrate to where the expected discount net returns are greatest over some time horizon. Therefore, the immigrant flow is composed of the pool of persons who are attracted by economic benefits, such as the earnings, employment, and quality of life, in the host countries (Borjas 1990). If the costs of migration are summed over some time horizon, the difference between economic benefits expected at origin and received at destination initiates the aimed advancement of economic well-being through migration.

On the other hand, the conditions that perpetuate international movement across time and space may be different from those that yield it. Regarding perpetuation of international movement, network theory (Massey 1990a, 1990b) argues that network connections constitute a form of social capital that people can draw upon to gain access to foreign employment. According to network theory, migrant networks are sets of interpersonal ties that connect migrants, former migrants, and nonimmigrants in origin and destination areas through ties of kinship, friendship, and shared community origin. Once the number of migrants reaches a critical threshold, the expansion of networks reduces the costs and risks of movement.

Taking somewhat different angles are some studies from the viewpoint of source countries (Greenwood et al. 1997; Greenwood and McDowell 1991, among others) using aggregate data. These studies beg the question of whether individual migration behavior conforms to the findings of aggregate studies, not to mention the so-called ecological fallacy (Robinson 1950). In addition to statistically biased methods, simplistic models, and inappropriate controls, nonrandom samples of migrants from one sending community, one receiving area, one job site, or one social service agency are common (Massey et al. 1994). Part of the reason there are so few empirical studies at the individual level is that the data available to test international migration are either nonexistent or of poor quality.

There are just a couple of studies that employ individual-level data to evaluate propositions derived from neoclassical theory at the individual level. Borjas (1987) analyzed migration from Puerto Rico to the

United States, but it is hard to generalize to international migration because Puerto Ricans face no quotas or legal impediments to moving to the mainland. We also uncovered other major deficiencies of the literature. Except for Funkhouser (1992), who utilized data from the United States and El Salvador, far too much research has been centered in Mexico with limited geography and small samples (Taylor 1986, 1987, 1992; Stark and Taylor 1989). In this regard, Massey et al. (1994) call for more attention to be devoted to Asian countries such as China, Korea, and so on, since they will be the prominent sending countries in the 21st century.

The development of origin countries is another reason why the well-being of immigrants-had-they-stayed must be used as a reference when evaluating the economic advancement of immigrants. First of all, historical information about the origin countries is essential in order to derive a trustworthy test of neoclassical economic theory at the micro level in a reduced-form regression. Immigrants' advancement of well-being is different from what "advancement" generally means over time because of the spatial shift of immigration. Only a positive gap between immigrants' well-being after moving and their well-being had they stayed is the "true" gain of migration. An appropriate evaluation study of the advancement of immigrants' well-being needs a clarification of this economic development and an estimation of its influence on human capital, such as income, and its accumulated reflection of homeownership.

In this study, homeownership is used as the indicator of well-being for nonimmigrants and immigrants. Homeownership is an economic milestone for most families since homes represent a major source of personal wealth, and this achievement requires both accumulation of savings for a downpayment and sufficient income to service monthly mortgage payments. Purchasing a home is a highly symbolic achievement, one indication of arrival in the middle class. For immigrants, property purchase also gives a grounded investment in the new land, establishment of legal rights of ownership, and control of a small piece of the destination country. It has been described as the putative "American dream" and is a goal held by immigrants as much as by, or maybe more than, native-born residents. Studies of housing preferences and analysis of lifetime housing behavior indicate

homeownership as a goal of most Americans, and the evidence is that immigrants subscribe to this goal as fully as do native-born Americans (Fannie Mae 1995).

In Korea, homeownership is one of the best ways to evaluate a person's socioeconomic achievement. Homeownership attainment is pursued by Korean families as a symbol of family wealth and being settled in family life and is regarded as an indicator of a family's achievement. Koreans might consider whether they will migrate to the United States in all aspects, including the probability of homeownership attainment. Therefore, this indicator is efficient to evaluate immigrants' achievement from the perspective of immigrants. In addition, it must be taken into account that homeownership is related to length of residence and family life-cycle stage as well as to family wealth.

<div align="center">III</div>

Method

THE EMPIRICAL RESEARCH OF IMMIGRANT ADVANCEMENT of economic well-being requires an evaluation of migration theory. Individual-level advancement is one of the major unresolved questions in this study area. The present study addresses this problem head-on, developing and applying methods for more incisive analysis of immigrant advancement.

The problem of identifying the differences between the various personal- and state-level variables can be formulated as the discrimination between two groups on the basis of $(k - 1)$, variables $x_{ij}(j = 2, \ldots, k)$ with x_{i1} the constant term, for n observations $(i = 1, \ldots, n)$. The general form of binary response models is given by:

$$y_i^* = x_i'\beta + \mu_i$$
$$y_i = 1 \text{ if } y_i^* \geq 0 \tag{1}$$
$$y_i = 0 \text{ otherwise,}$$

where y_i is the indicator of the i th individual's response determined by the underlying latent variable y_i^*, β is a vector of k regression parameters, and μ_i is a random error term. Let Z_{gi} be an indicator

variable that takes the value m if the i th individual migrates and i stays. Let

$$\phi_{gi} = \Pr(z_{gi} = m|x_i), \, g = s, m, \tag{2}$$

where $x'_i = (x_{i1}, \ldots, x_{ik})$. Assuming a normal distribution for μ independent of x, the typical migration model using the binary probit is formally presented as follows:

$$\Phi(\phi_{gi}/\phi_{si}) = \Phi(x'_i\beta_g/\sigma_\mu), \, g = m, \tag{3}$$

where Φ is the standard normal cumulative density function, σ_μ the standard deviation of μ, and $\beta'_g = (\beta_{g1}, \beta_{g2}, \ldots, \beta_{gk})$ is a vector of k regression coefficients.

To carry out the two-stage estimation, we apply the procedures outlined by DaVanzo and Hosek (1981) and Cooke and Bailey (1996). We begin with a pairwise probit migration model using Equation (3) that estimates the probability that an individual from Korea migrates to the United States prior to 1990.

It is likely that migrants and nonmigrants are selected samples, which implies neither group is drawn randomly. However, their perceived utility-maximizing decision-making procedure might be different. That is, migrants may expect utility maximization from migration and nonmigrants may expect utility maximization from staying. In this respect, the presence of self-selection necessitates certain methodological refinements (see Tunali 1986). Among the various methodological refinements, we follow the methodology developed by DaVanzo and Hosek (1981), and thus assume that the probability of an individual migrates in Equation (3) equals:

$$\Pr(y_i = 1) = \Pr\left(\frac{\mu}{\sigma_\mu} > -\frac{1}{\sigma_\mu}\right) = \Phi\left(\frac{1}{\sigma_\mu}\right), \tag{4}$$

and the index I is defined by $x'_i\beta_g - x'_i\beta_s$, where g, s, and Φ are explained before. We apply this normalization procedure for both independent and linked migration models. Using the normalized parameters from the pairwise probit models in Equation (4), the λ s (inverse Mill's ratio) are calculated by:

$$\lambda_{gi} = \frac{f(\mathrm{I}_i)}{\Phi(\mathrm{I}_i)}, \, g = m, s, \tag{5}$$

where f is the standard normal probability density function and Φ is the standard normal cumulative distribution function. The index I_i is derived from the preceding probit model of the probability of migration in Equation (3).

In the second-stage analyses, we include this lambda term as a variable in the model of the probability of homeownership. This is to establish the degree to which migration affects homeownership acquisition at the individual level. The model of homeownership acquisition is:

$$\Pr(OWN_t = 1) = \Phi(\phi_{gi}/\phi_{si}), \, g = m \text{ and } t = 1990, \tag{6}$$

where $\Pr(OWN_t = 1)$ is the probability that an individual in the sample lives in his or her own house.

IV

Data and Sample

THE DATA FOR OUR ANALYSES are drawn from the 1990 Korea Census Data and the 1990 Public Use Microdata Samples (PUMS) of the United States. Decennial census data were collected for a set of characteristics from the Korean Census and the U.S. Census of both Korean individuals and households. For our comparative and regression analyses, we construct a final data set that merges both data with the same variables. Since the 1990 PUMS is not a random sample, we weight samples in the PUMS with PWGT1 for individuals and HOUSWGT for households. Excluded are persons in group quarters (2.3 percent) and born in other countries (3.7 percent) except for Korea.

Table 1 summarizes sampling processes for Korean nonimmigrants and Korean immigrants in the United States in 1990. Each data includes individuals who are 14 years or older. The original data consist of 795,180 nonimmigrants and 217,329 households in Korea and 939,522 Korean immigrants and 190,215 Korean immigrant households in the United States. In the samples, 56.0 percent of

Table 1

Sampling Processes for Korean Nonimmigrants and Korean Immigrants in the United States 1990

Restrictions	Korea Census Data*				U.S. Census Data**			
	Owner		Renter		Owner		Renter	
	N	%	N	%	N	%	N	%
Step 1: Total								
Korean-born								
Individual	445,571	56.03	349,609	43.97	330,844	54.17	279,895	45.83
Household	111,615	51.36	105,714	48.54	75,515	41.90	104,705	58.10
U.S.-born								
Individual					86,255	62.25	52,313	37.75
Household					4,209	42.11	5,786	57.89
*Step 2: Regression Sample***								
Korean-born (age > 14)								
Individual	23,908	58.08	17,259	41.92	13,333	51.98	12,318	48.02
Women	11,584	57.99	8,392	42.01	5,255	49.21	5,425	50.79
Men	12,324	58.16	8,867	41.84	8,077	53.96	6,983	46.04
Household	7,901	51.56	7,424	48.44	3,776	41.90	5,235	58.10

*The Korean Census of Population and Housing (2%) sample

**PUMS A (5%) sample weighted by PWGT1 for individual and HOUSWGT1 for household. Excluded are persons in group quarters (2.29%) and born in other countries (3.71%) except Korea

***0.1% for Korea sample and 5% sample weighted by PWGT1/20 (individual) and HOUSWGT/20 (household) for U.S. sample.

nonimmigrants are homeowners, and 54.2 percent of Korean-born immigrants and 62.3 percent of U.S.-born residents live in their own houses. At the household level, however, nonimmigrants' homeownership rate (51.4 percent) is much higher than Korean-born immigrants' (41.9 percent) and U.S.-born Koreans' (42.1 percent). At either level, Korean-born immigrants' homeownership is lower than U.S.-born homeownership.

For computational efficiency, we draw a 0.1 percent random sample for Korean stayers and 5 percent PUMS sample for Korean immigrants in the United States. As a result of the sampling processes, there are 23,908 owners and 17,259 renters from the Korea Census, and 13,333 owners and 12,318 renters from the U.S. Census. In the sample, homeownership rate of nonimmigrants is higher than that of immigrants. Homeownership ratios in the final sample show no significant differences from the original data.

Table 2 describes profiles of Korean stayers and immigrants to the United States in 1990. There is no significant differences in age distribution between the stayers and the immigrants. While nonimmigrants are slightly more concentrated in the younger age group (25–34), the immigrant population is more heavily distributed in older age groups (35–44 and 45–54). The proportion of women in the sample is higher among the Korean immigrants in the United States (58.4 percent) than among nonimmigrants (51.5 percent). Regarding marital status, higher portions of immigrants (10.13 percent) are classified as divorced, separated, or widowed than are nonimmigrants (8.32 percent). Immigrants show higher educational achievement than stayers do. Striking differences between the two groups are found in labor market activity. While 74.8 percent of immigrants are active in the labor market, this drops to below 50 percent for nonimmigrants.

Household characteristics for both migrants and nonmigrants are described in terms of household size, number of workers, and number of bedrooms. While household size for immigrants is smaller than for nonimmigrants, the number of workers in households is higher for immigrants than for nonimmigrants. People residing in Korea occupy houses with more bedrooms than do Korean immigrants in the United States, although this cannot be attributed to the differences of spatial occupancy between the groups.

Table 2

Profiles of Korean Stayers and Korean Immigrants in the
United States 1990

	Stayers		Immigrants	
	N	%	N	%
Individual				
Age				
15–24	10,229	24.85	4,925	19.20
25–34	10,937	26.57	6,982	27.22
35–44	7,502	18.22	5,980	23.31
45–54	5,649	13.72	4,369	17.03
55–64	3,907	9.49	1,951	7.60
65 +	2,943	7.15	1,445	5.63
Sex				
Male	19,976	48.52	10,680	41.64
Female	21,191	51.48	14,970	58.36
Marital				
Married	25,488	61.91	16,876	65.79
Div/Sep/Wid	3,426	8.32	2,598	10.13
Not married	12,253	29.76	6,177	24.08
Education				
Below high school	17,656	42.89	6,345	24.74
HS or some college	17,817	43.28	11,747	45.80
Bachelor's degree	5,285	12.84	4,959	19.33
Master's degree +	409	0.99	2,600	10.14
Work				
Employed	20,400	49.55	19,181	74.78
Not employed	20,767	50.45	6,470	25.22
Job Status				
Corporate own	1,194	2.90	1,156	4.51
Self-operated	7,439	18.07	3,643	14.20
Salary	11,767	28.58	14,382	56.07
Unemployed	20,767	50.45	6,470	25.22

Table 2—Continued

	Stayers		Immigrants	
	N	%	N	
Household & housing				
Household size				
1 person	1,353	8.83	1,161	12.88
2 persons	2,312	15.09	1,856	20.60
3 persons	3,006	19.62	1,884	20.90
4 persons	4,420	28.84	2,479	27.51
5 persons	2,767	18.06	1,064	11.81
6 or more persons	1,467	9.57	568	6.30
Number of workers				
No worker	1,566	10.22	575	6.38
1 worker	8,393	54.77	3,932	43.63
2 or more workers	5,366	35.01	4,505	49.99
Number of bedrooms				
1 room*	3,905	25.48	3,972	44.07
2 rooms	4,288	27.98	2,260	25.08
3 rooms	3,819	24.92	1,698	18.85
4 rooms	2,173	14.18	847	9.40
5 rooms	1,140	7.44	233	2.59

*1 room for U.S. data includes studio, etc. without bedroom.

V

Variables

THE SPECIFICATION AND SELECTION OF individual and household variables
are derived from migration theories and previous immigration studies
(Table 3). Since there has been no large body of empirical research
on international migration, we refer also to internal migration
theories. For the migration equation, we employ whether a person
migrated or not as a dependent variable and age, gender, education,
and several interaction variables as independent variables. The second
dependent variable for the homeownership equation is tenure;

Table 3

Explanation of Variables in Immigration and Homeownership Models

Variables	Explanation	Models*
Dependent Variables		
MIG**	if immigrated to the United States (= 1), stay in Korea (= 0)	M, H
HOME	if owner (= 1), renter (= 0)	H
Independent Variables		
Age (ref. group = age 15–24)		
AC2	age, 25–34	M, H
AC3	age, 35–44	M, H
AC4	age, 45–54	M, H
AC5	age, 55–64	M, H
AC6	age, 65 or more	M, H
Gender SEX	if female (= 1), male (= 0)	M, H
Immigration Status		
MIGYEAR	migration years	H
MYEAR_SQ	migration years squared	H
Marital Status (ref. group = married)		
MARRY2	divorced/separated/widowed	H
MARRY3	not married	H
Household Size (ref. group = household size, 1–2 persons)		
HSIZE2	household size, 3–4 persons	H
HSIZE3	household size, 5+ persons	H

Table 3—*Continued*

Variables	Explanation	Models*
Education (ref. group = below high school diploma)		
EDU2	high school or some college	M, H
EDU3	bachelor's degree	M, H
EDU4	master's degree or more	M, H
Job Status (ref. group = unemployed)		
STATUS1	self-operated, incorporated	
STATUS2	self-operated, not incorporated	
STATUS3	salary	
Interaction Variables		
FE*AC2	SEX*AC2	M
FE*AC3	SEX*AC3	M
FE*AC4	SEX*AC4	M
FE*AC5	SEX*AC5	M
FE*AC6	SEX*AC6	M
FE*EDU2	SEX*EDU2	M
FE*EDU3	SEX*EDU3	M
FE*EDU4	SEX*EDU4	M
MIG_FEMA	MIG*SEX	H
Selection Control		
LAMBDA	migration selection variable	H

*M = migration equation, H = homeownership equation.
**Used as an independent variable in homeownership model.

independent variables include age, gender, immigration status, marital status, household size, education, job status, an interaction variable, and a selection control variable.

Independent Variables

Age is the single most important factor for migration, representing the life-cycle effect (Long 1988). Human capital theory argues that the older a person is, the smaller the discounted benefit of a move (Molho 1986). Age is also important in homeownership probability, since there are differential probabilities of homeownership and housing demand by age group (Goodman 1988). For example, younger house-holds that are more mobile have lower ownership rates than older age groups, even when other factors are held constant. The present study assumes different effects of ages on the decision to migrate or stay and to own or rent from individual life-cycle/socioeconomic vari-ables. Accordingly, we will stratify our sample into six age groups: ages 15–24, 25–34, 35–44, 45–54, 55–64, and 65 and older.

In general, men are more likely to migrate internationally than women (Stark and Taylor 1991), controlling for other characteristics. However, the likelihood of being a migrant decreases as family responsibilities increase, owing to family size and the presence of old parents and school-age children. Regarding homeownership, since migration has different influences on females' economic well-being at destinations (Cooke and Bailey 1996; Lee and Roseman 1999), we assume that gender has an impact on economic well-being as a result.

Immigration status is strongly related to homeownership attainment. As immigrants assimilate themselves to a host society, they are able to access the economic levels of the host country's societal standard (Borjas 1985). Myers and Lee (1998) show that duration of U.S. residence influences immigrants' homeownership attainments. The importance of family type in tenure choice is omnipresent in home-ownership studies (Boehm 1993; Clark, Deurloo, and Dieleman 1994; Deurloo, Clark, and Dieleman 1994; Gyourko and Linneman 1997). Some studies (Goodman 1988; Watcher and Megbolugbe 1992) specify sex and marital status of household head in the tenure choice models.

Boehm (1982) and Henderson and Ioannides (1987) stress the importance of household size in housing consumption. They show that consumption rises with family size, controlling for family type and other socioeconomic variables. We have not included marital status or household size as variables in the migration equation, since we know that the variables at the destination cannot be predetermined in the international migration context.

Education and occupation represent a prior investment that not only influences the likelihood of moving but also affects economic well-being. Migrants are generally assumed to gather specific information about their destination primarily through media, firsthand personal knowledge, or family, friends, and acquaintances. This information is increased with higher education. We expect that the likelihood of migration and homeownership should increase with higher education. In general, the well-educated are more likely to make long-distance moves (Greenwood 1975; Krieg 1993).

Education and occupation are expected to capture more permanent aspects of socioeconomic status that compensate for the unidentified factors of current income. Education is coded as in Myers and Lee (1996), specifying dummy variables to indicate two broad categories of educational attainment: 12 years completed or high school degree, and 16 years completed or college degree, omitting non-high-school completion as a reference group. Occupation is categorized into three groups. Individuals who are in the category of professional/managerial and other white-collar workers would have a higher potential for socioeconomic success than individuals in non-white-collar occupations (Alba and Logan 1992). Net of personal income, higher educational attainment and a more prestigious job may indicate higher permanent income or greater accumulated wealth, and hence it should further elevate housing consumption. Previous studies and theories have said that geography is influential in the probability of homeownership. However, since the Korean immigrant population is concentrated in a few metropolitan areas in the United States, we do not include geography as a variable.

A migration self-selection bias control variable is included in the homeownership model to separate the effects of migration and self-selection bias on the probability of homeownership attainment. Since

migrants and nonmigrants are not randomly selected but self-selected (Da Vanzo and Hosek 1981), estimated difference in the probability of homeownership between migrants and nonmigrants reflects personal and household differences between them as well as the effect of migration propensity.

VI
Findings

Determinants of Korean International Migration to the United States

Determinants of Korean international migration to the United States are illustrated in Table 4. As we explained in the previous section, education, gender, and age are the only variables that can be specified in the migration model. The coefficient gender variable (female) is positive and statistically significant, indicating that women have a higher probability of international migration. With a reference group of ages 15–24, five other age groups have different impacts on Korean migration to the United States. The middle age group (AC4) has the biggest coefficient, followed by the age 35–44 and age 65 or higher groups. The influence of education is clearly described, revealing that the more educated a person is, the greater propensity of migration to the United States.

We interact gender with education and age to capture systematic differences among these variables in Model 2. Interaction variables of female and age (FE_AC2 to FE_AC6) are positive and statistically significant for all age groups, which implies that women are more likely to make an international migration decision to the United States than men. Women with higher education have a general positive effect on migration propensities (FE_EDU2 to FE_EDU3). This is not an unusual finding, given that previous studies have found a higher propensity among women than men to migrate, depending upon various contexts. Since Korean society contains traditional and Confucian ideologies that are disadvantageous for women, there might be social and psychological advantages for women's lives in the United States (Ha et al. 2002).

Given the probit estimation of the migration model (Model 2 in

Table 4

Determinants of Korean International Migration to the
United States

Variables	Model 1		Model 2	
	coeff.	s.e.	coeff.	s.e.
Intercept	−1.0101**	0.0159	−0.7768**	0.0214
Gender				
SEX	0.3243**	0.0105	−0.1140**	0.0289
Age				
AC2	0.0261	0.0147	−0.1349**	0.0218
AC3	0.2579**	0.0157	−0.0054	0.0231
AC4	0.3016**	0.0173	0.1252**	0.0251
AC5	0.1335**	0.0212	−0.0029	0.0312
AC6	0.2450**	0.0238	0.1015**	0.0383
Education				
EDU2	0.4725**	0.0126	0.3574**	0.0196
EDU3	0.7038**	0.0161	0.5395**	0.0231
EDU4	1.8741**	0.0309	1.8342**	0.0370
Interaction				
FE_AC2			0.3050**	0.0295
FE_AC3			0.5037**	0.0316
FE_AC4			0.3577**	0.0347
FE_AC5			0.2915**	0.0426
FE_AC6			0.3104**	0.0491
FE_EDU2			0.2087**	0.0257
FE_EDU3			0.3526**	0.0328
FE_EDU4			0.0555	0.0707
N	66818		66818	
d.f.	9		17	
−2 LL Int. & Covariates	82509.81		82094.13	
Covariates	6482.63		6898.31	
p	0.0001		0.0001	

*Statistically significant at $p < 0.05$.
**Statistically significant at $p < 0.01$.

Table 4), the estimate of the selectivity control variable (lambda) is obtained by migration type using Equation (5). The value is substituted into the probability models of homeownership attainment using Equation (6). The next section shows this homeownership outcome as a result of international migration to the United States.

Consequences of Korean International Migration to the United States: Homeownership

In general, homeownership models in Table 5 matched the results of previous studies (Boehm 1993; Clark, Deurloo, and Dieleman 1994; Deurloo, Clark, and Dieleman 1994; Gyourko and Linneman 1997). We only control migration status and gender in Model 1. Migrants are less likely to live in their own houses (MIG), and the probability of living in their own home is higher for women than men (SEX). However, females are more likely to live in their own houses (MIG_FEMA) after migrating to the United States, as shown in Model 2. We present Models 3 to 5 to check the effects of key variables, migration selection (LAMBDA), and years since migration (MIGYEAR and MYEAR_SQ). Before discussing these, we will explain the effects of other independent variables on homeownership.

In Models 3 and 4, immigration status (MIG) has a negative coefficient that is statistically significant, indicating that a Korean's probability of homeownership attainment is decreased if he or she migrates to the United States. Women's migration to the United States has a more positive effect on homeownership probability (MIG_FEMA) than men's migration. Age has a positive effect on homeownership probability, showing a negative coefficient in age 25–34 (AC2) and positive coefficients in older age groups (AC3 to AC6). This means that the older a person is, the higher probability of homeownership is, which conforms to previous studies and theories. Compared to married people, people with family dissolution, including the divorced, the separated, and the widowed, have a lower probability of owning houses (MARRY2). In contrast, with all other factors controlled, never-married people have a higher level of homeownership (MARRY3). Household size (HSIZE2 and HSIZE3) has a positive effect on homeownership, since households with larger numbers of

Table 5

Consequence of Korean International Migration to the United States with Respect to Homeownership Probability

Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	coeff.	s.e.	coeff.	s.e.	coeff.	s.e.	coeff.	s.e.	coeff.	s.e.
Intercept	0.1791**	0.0080	0.2016**	0.0089	-0.8353**	0.0297	-0.7524**	0.0373	-1.3583**	0.0401
Migration										
MIG	-0.1575**	0.0100	-0.2215**	0.0151	-0.1878**	0.0164	-0.1988**	0.0167	0.2027**	0.0189
Gender										
SEX	0.0480**	0.0098	0.0043	0.0125	0.0955**	0.0141	0.0947**	0.0141	0.0708**	0.0142
Interaction										
MIG_FEMA			0.1149**	0.0202	0.1935**	0.0215	0.1934**	0.0215	0.2087**	0.0217
Immigration Status										
MIGYEAR									0.0493**	0.0015
MYEAR_SQ									-0.0004**	0.0000
Age										
AC2					-0.1323**	0.0204	-0.1325**	0.0204	-0.3292**	0.0212
AC3					0.2821**	0.0240	0.2812**	0.0240	-0.1044**	0.0258
AC4					0.6774**	0.0257	0.6760**	0.0257	0.1256**	0.0286
AC5					0.8848**	0.0288	0.8842**	0.0288	0.2439**	0.0325
AC6					0.8899**	0.0321	0.8882**	0.0321	0.2085**	0.0394

	(1)	(2)	(3)		(4)		(5)	
Marital Status								
MARRY2			−0.2136**	0.0207	−0.2135**	0.0207	−0.2246**	0.0211
MARRY3			0.4208**	0.0198	0.4206**	0.0198	0.4831**	0.0200
Household Size								
HSIZE2			0.4745**	0.0150	0.4737**	0.0150	0.5113**	0.0153
HSIZE3			0.8534**	0.0158	0.8536**	0.0158	0.9169**	0.0162
Education								
EDU2			−0.0566**	0.0126	−0.0583**	0.0126	0.0590**	0.0130
EDU3			0.1680**	0.0167	0.1615**	0.0168	0.2519**	0.0172
EDU4			0.1409**	0.0274	0.1284**	0.0276	0.2445**	0.0281
Job Status								
STATUS1			0.2912**	0.0301	0.2928**	0.0301	0.1839**	0.0305
STATUS2			0.4626**	0.0166	0.4629**	0.0166	0.3754**	0.0169
STATUS3			−0.0226	0.0131	−0.0215	0.0131	−0.1238**	0.0135
Selection Control								
LAMBDA					−0.0742**	0.0202	−0.0401*	0.0204
N	66818	66818	66818		66818		66818	
d.f.	2	3	18		19		21	
−2 LL Int. & Covariates	91486.01	91453.59	82367.06		82352.89		80078.15	
Covariates	261.86	294.28	9380.815		9393.35		11668.09	
p	0.0001	0.0001	0.0001		0.0001		0.0001	

*Statistically significant at $p < 0.05$; **statistically significant at $p < 0.01$.

household members demand more space. Compared to people with below high school diploma who are the reference group, people with high school diploma or some college (EDU2) have lower probability of homeownership; however, bachelor's degree or more (EDU3 and EDU4) brings a positive effect on attaining homeownership. Regarding job status, self-employed people (STATUS1 and STATUS2) have a higher probability of homeownership than the unemployed. Conversely, those without salaried jobs (the largest group of workers) are no better off than are the unemployed.

Many studies accentuate the importance of immigration experiences (Borjas 1985, 1987, 1990; Myers and Lee 1998) in immigration studies. Years since migration (MIGYEAR and MYEAR_SQ) added in Model 5 shows a positive effect on the probability of homeownership attainment, at a decreasing rate. This implies that the longer the residence in the United States, the higher the probability of homeownership. The negative coefficient of the selection term (LAMBDA) in Models 4 and 5 implies a negative correlation between the errors in the previous migration equation and the homeownership probability equation. The result suggests that Korean immigrants are negatively selected in terms of all the individual and household characteristics over nonimmigrants.

Estimated Migration Effects on the Probability of Homeownership

This section analyzes expected returns of immigrants and nonimmigrants by sex based on the results of Model 5 in Table 5, inserting each mean value by subgroup, as presented in the Appendix. The predicted probability of homeownership among women who migrated is 54.4 percent, but had they not migrated their probability of homeownership would be only 38.2 percent (Table 6). Similarly, the predicted probability of homeownership among Korean women who did not migrate is 59.2 percent, but had they migrated their probability of homeownership attainment would be 74 percent. Therefore, migration increases the probability of women's homeownership attainment by 16 percent. Compared to these increases, migration to the United States has relatively small effect on men's probability of homeownership attainment. The predicted probability of home-

Table 6

Estimated Migration Effects on the Probability of Homeownership

	Predicted Probability of Homeownership (%)			
	Women		Men	
Migration Alternatives	Migrants	Stayers	Migrants	Stayers
Immigrate to the United States	54.41	73.99	48.90	66.67
Stay in Korea	38.18	59.16	40.89	59.02
Difference	16.23	14.83	8.01	7.65

ownership among Korean men who migrated is 49 percent, and had they not migrated their probability of homeownership would be 40.9 percent. Male stayers' probability of homeownership is 59.1 percent, and had they migrated the probability of homeownership would be 7.7 percentage points higher than stayers'. These results indicate that migration has a large and significant positive effect on the probability of homeownership attainment for Korean women and to a lesser degree for Korean men.

VII

Conclusion

THE PRESENT STUDY TRIED TO CONNECT causation of international migration with its consequences. From the perspective of immigrants as individual decisionmakers, the main question is whether determinants of international migration are matched with its consequences. The neoclassical microeconomic theory of individual choice explains international migration as maximization of human capital. An empirical test is necessary to evaluate this theory, and we formulated it at the individual level. This study examined the determinants and migration consequences of Koreans' international migration to evaluate

neoclassical migration theory empirically, using representative samples from Korea and the United States in 1990.

Overall, Korean immigration has positive effects on the probability of homeownership attainment. Consistent with the traditional migration theory, international migration puts a positive effect on economic well-being for Korean immigrants. Estimated effects of international migration on the homeownership probability shows the evidence. The simulation results of this study have demonstrated that the predicted probability of homeownership attainment among Koreans increases by migration about 15 to 16 percent for women and 8 percent for men. In either case of migrants-had-they-stayed or if stayers-if-they-had-migrated, international migration to the United States has a positive effect on their homeownership probability. Especially for women, migration has a significant and positive effect on the probability of homeownership attainment.

Despite the importance of neoclassical theory on international migration, empirical implementation on the issue has been quite limited. Part of the reason is that much of the inspiration for recent theoretical work on international migration is provided by the experience of developing economies, in which data on immigration are either nonexistent or of poor quality. The present study also has some limitation, with limited information for more relevant variables on our empirical immigration models. Nevertheless, for the first time, we provide empirical evidence of the prolonged hypothesis of international migration—one can achieve better well-being through migration—in the context of Korea and the United States.

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Appendix

Descriptive Statistics by Gender and Immigration Status

Variable	Female				Male			
	Immigrants		Stayers		Immigrants		Stayers	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
SEX	—		—		—		—	
MIG	—		—		—		—	
MIG_FEMA	—		—		—		—	
MIGYEAR	10.6864	7.6502	24.0130	16.8625	9.8950	7.4519	22.5575	15.2766
MYEAR_SQ	168.6146	225.9312	860.9527	1056.5900	148.4818	215.5644	742.2028	884.9276
AC2	0.2794	0.4654	0.2615	0.4395	0.2620	0.4608	0.2701	0.4440
AC3	0.2466	0.4470	0.1686	0.3744	0.2143	0.4300	0.1967	0.3975
AC4	0.1617	0.3819	0.1347	0.3414	0.1824	0.4046	0.1399	0.3469
AC5	0.0725	0.2690	0.1005	0.3006	0.0810	0.2859	0.0890	0.2848
AC6	0.0638	0.2534	0.0867	0.2815	0.0459	0.2193	0.0553	0.2286
MARRY2	0.1441	0.3642	0.1388	0.3458	0.0413	0.2085	0.0242	0.1538
MARRY3	0.2017	0.4162	0.2600	0.4386	0.2956	0.4782	0.3376	0.4729
HSIZE2	0.4978	0.5185	0.4375	0.4961	0.5112	0.5238	0.4738	0.4993
HSIZE3	0.2702	0.4605	0.4114	0.4921	0.2916	0.4763	0.3974	0.4894
EDU2	0.4789	0.5181	0.3995	0.4898	0.4286	0.5186	0.4681	0.4990
EDU3	0.1752	0.3942	0.0826	0.2753	0.2188	0.4332	0.1769	0.3816
EDU4	0.0525	0.2312	0.0041	0.0636	0.1699	0.3935	0.0162	0.1261
STATUS1	0.0299	0.1767	0.0080	0.0889	0.0662	0.2606	0.0513	0.2206
STATUS2	0.1101	0.3246	0.1441	0.3512	0.1869	0.4085	0.2195	0.4139
STATUS3	0.5425	0.5167	0.1628	0.3692	0.5862	0.5161	0.4163	0.4930
LAMBDA	0.9155	0.3379	1.0837	0.2025	0.9111	0.3291	1.0848	0.2045