



The 18th IPSS Annual Seminar

人口移動モデルと国際結婚移動

Migration Models and
International Marriage Migration

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Oct.31st, (Thr.), 2013

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What is migration?

- 1) Geographical move
- 2) Social move

migration usually means geographical move

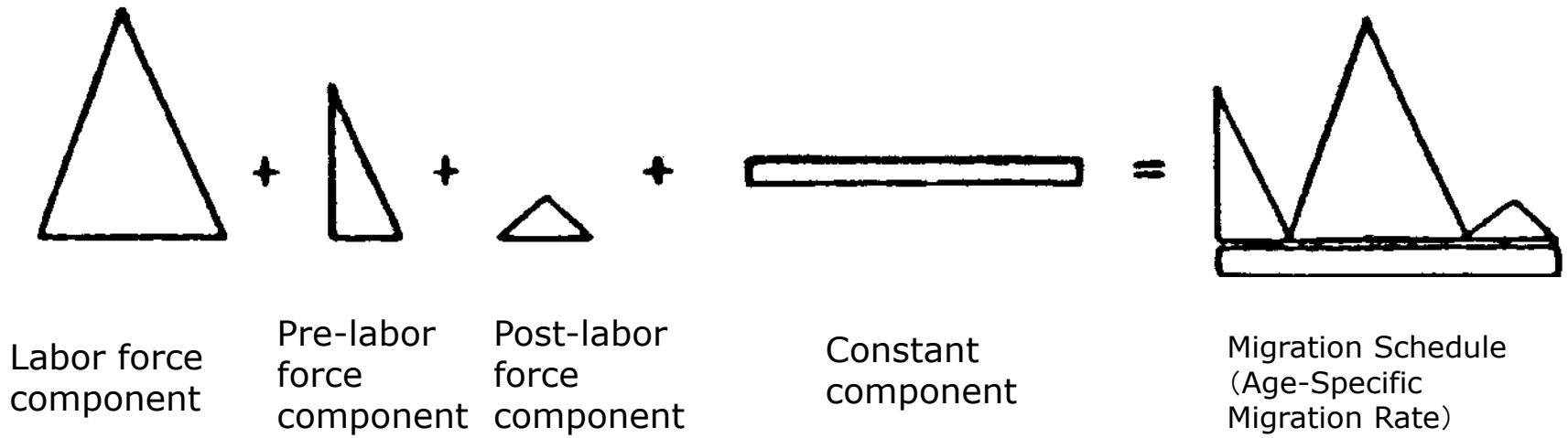
- Geographical move refers to change in usual residence



What is migration model?

- Model aims to explain what factors cause migration stream that flows towards certain direction
- Basic causal factors are the same with internal and international migration

図1 Model migration schedule by Rogers



Source: Rogers(1984)

- Majority of migration is labor migration. Therefore, most of migration models focus on labor migration regardless of internal or international migration

3 causal factors of labor migration

1. distance friction
 2. population size
 3. economic gap
- Among the above 3 factors, 1 and 2 determine the size of migration stream (gravity model), and 3 determines the direction of migration stream (regional economic gap model)

What is gravity model?

- Model that determines size of migration M_{ij} between region i and region j

$$M_{ij} = k \times p_i \times p_j / d_{ij}^a$$

where

p_i = population of region i

p_j = population of region j

d_{ij} = distance between region i and j

k = constant, a = constant

D_{ij} also includes distance measured by time or economic cost

What is regional economic gap model?

- The model determines the gap (or ratio) between the scale of migration m_{ij} that flows from region i to region j , and the scale of migration m_{ji} that flows from region j to region i among migration scale between region i and region j

(where $M_{ij} = m_{ij} + m_{ji}$)

$m_{ij} - m_{ji} = f$ (the economic gap between region i and j)

or

$m_{ij}/m_{ji} = f$ (economic gap between region i and j)

- The typical migration that can be explained by this model is migration between urban and rural. International migration also can be explained by this model.

What is Todaro Model?

- Regional economic gap model uses real economic indicators such as wage gaps, and gaps in job openings-to-applicants ratio between regions
- Model that explains rural-urban migration in developing countries is explained by the gap in expected wages between the two areas (Todaro 1969)
- The Todaro Model is applicable to international labor migration as well.



Migration based on family network

- Migration that cannot be explained by migration model for labor migration
- Chain migration and international marriage migration are this type of migration within international migration
- Chain migration is migration caused by social networks. Migrants move to destinations where relatives or friends live, in order to get some information and assistance



International marriage and international marriage migration

- International marriage refers to a marriage between two people who have different nationalities
- Most of international marriage involves international migration. Usually migration and marriage involves some time lag

Hypergamy and hypogamy

- Generally, marrying to someone who has higher social status, income and education etc. is called *hypergamy*. The reverse is called *hypogamy*.
- Regardless of developed or developing countries, of internal or international, women are more likely to *hypergamy*.
- Here, *hypergamy* is defined as marrying to someone from a country of higher economic level. The reverse is defined as *hypogamy*.

Table 1 Classification of international marriages (two-country model)

Type of international marriage	Perspective from female	Frquency
Type 1: Male in more developed countries / female from foreign country	hypergamy	Most frequent
Type 2: Female in more developed country / male from foreign country	hypogamy	Less frequent than Type 1
Type 3: Male in less developed country / female from foreign country	hypogamy	Least frequent
Type 4: Female in less developed country / male from foreign country	hypergamy	More frequent than Type 3

出典: Inoue(2010)

What is BG ratio?

- Index proposed by Inoue(2010)
- Ratio between the number of international marriages of which brides have foreign nationality and the number of international marriages of which grooms have foreign nationality
- BG ratio refers to ratio between Type 1 and Type 2, and ratio between Type 3 and Type 4

Hypothesis1 regarding BG ratio

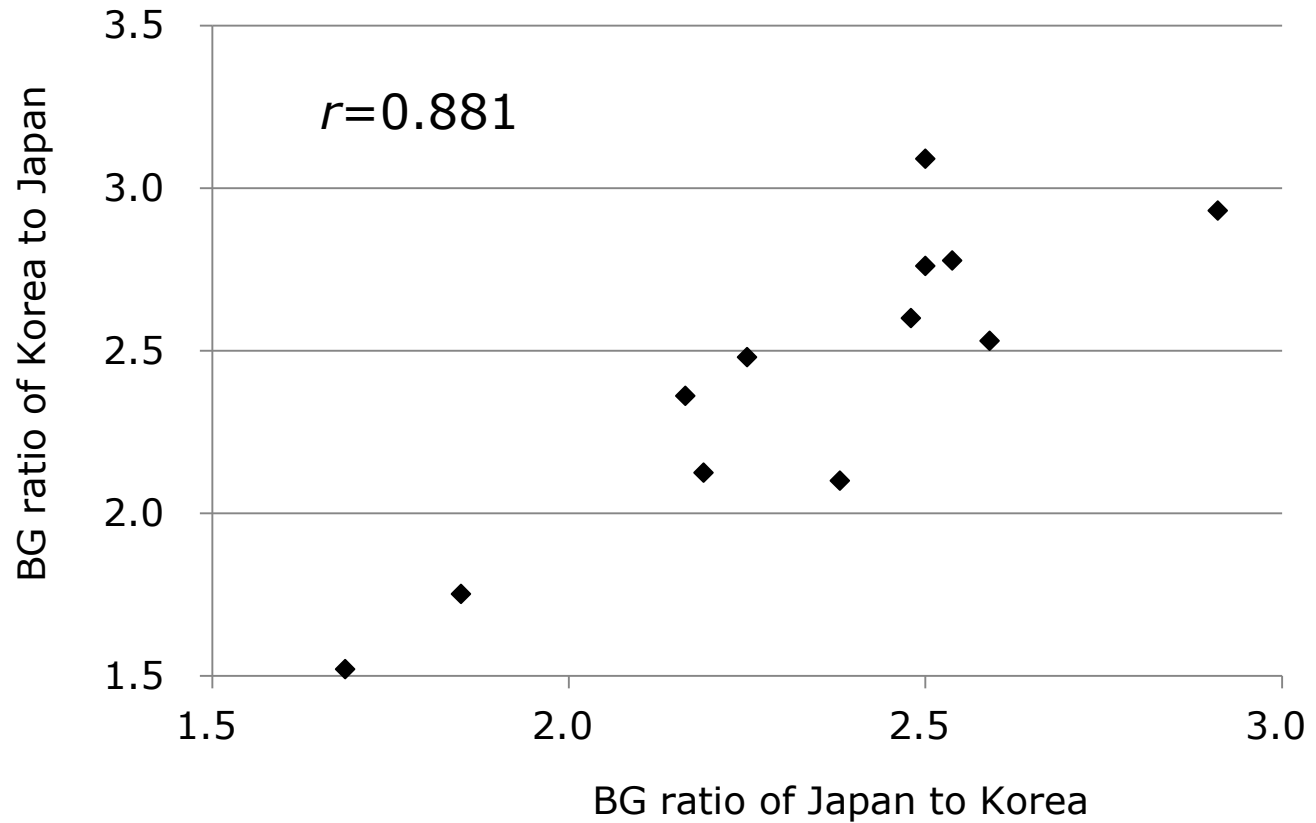
- Consider BG ratio between 2 countries, country i and country j . Assume the level of economic development is higher in country i than country j
- BG ratio of country i to country j equals the reciprocal number of BG ratio of country j to country i

Table 2 International marriages between Japan and Korea (2000~2011年)

Year		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Japan	Korean females (number)	6214	6188	5353	5318	5730	6066	6041	5606	4558	4113	3664	3098
	Korean males (number)	2509	2477	2379	2235	2293	2087	2335	2209	2107	1879	1982	1837
	Total (number)	8723	8665	7732	7553	8023	8153	8376	7815	6665	5992	5646	4935
	BG ratio	2.48	2.50	2.25	2.38	2.50	2.91	2.59	2.54	2.16	2.19	1.85	1.69
Korea	Japanese males (number)	1131	976	959	1242	1224	1255	1484	1206	1162	1140	1193	1124
	Japanese females (number)	2941	3011	2377	2613	3378	3672	3756	3349	2743	2422	2090	1709
	Total (number)	4072	3987	3336	3855	4602	4927	5240	4555	3905	3562	3283	2833
	1/(BG ratio)	2.60	3.09	2.48	2.10	2.76	2.93	2.53	2.78	2.36	2.12	1.75	1.52

出典: *Vital Statistics*(Japan)、*Website of the Population & Social Statistics Bureau*(Korea)

Figure 2 A comparison between BG ratio of Japan to Korea and BG ratio of Korea to Japan



Hypothesis 2 regarding BG ratio

Both BG ratio of country i to country j , and BG ratio of country j to country i change with the level of economic gap between country i and j

- This implies that as the economic gap between country i and j narrows, BG ratios of both countries get closer to 1. When the economic gap completely disappears, BG ratio of country i to j = BG ratio of country j to i = 1

Table 3 GDP per capita in Japan and Korea (1993-2011年)

Year		93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11
GDP per capita (\$1,000)	Japan	35.4	38.8	42.5	37.4	34.3	31.0	35.0	37.3	32.7	31.2	33.7	36.4	35.8	34.1	34.1	38.0	39.5	43.0	45.9
	Korea	8.4	9.8	11.8	12.6	11.6	7.7	9.9	11.3	10.7	12.1	13.5	15.0	17.6	19.7	21.7	19.2	17.1	20.8	22.8
Japan / Korea		4.20	3.97	3.61	2.97	2.96	4.01	3.53	3.29	3.07	2.58	2.51	2.43	2.04	1.73	1.57	1.98	2.31	2.07	2.02

出典：IMF, World Economic Outlook Database 2012

Figure 3

Trends in GDP ratio per capita and BG ratio in Japan and South Korea

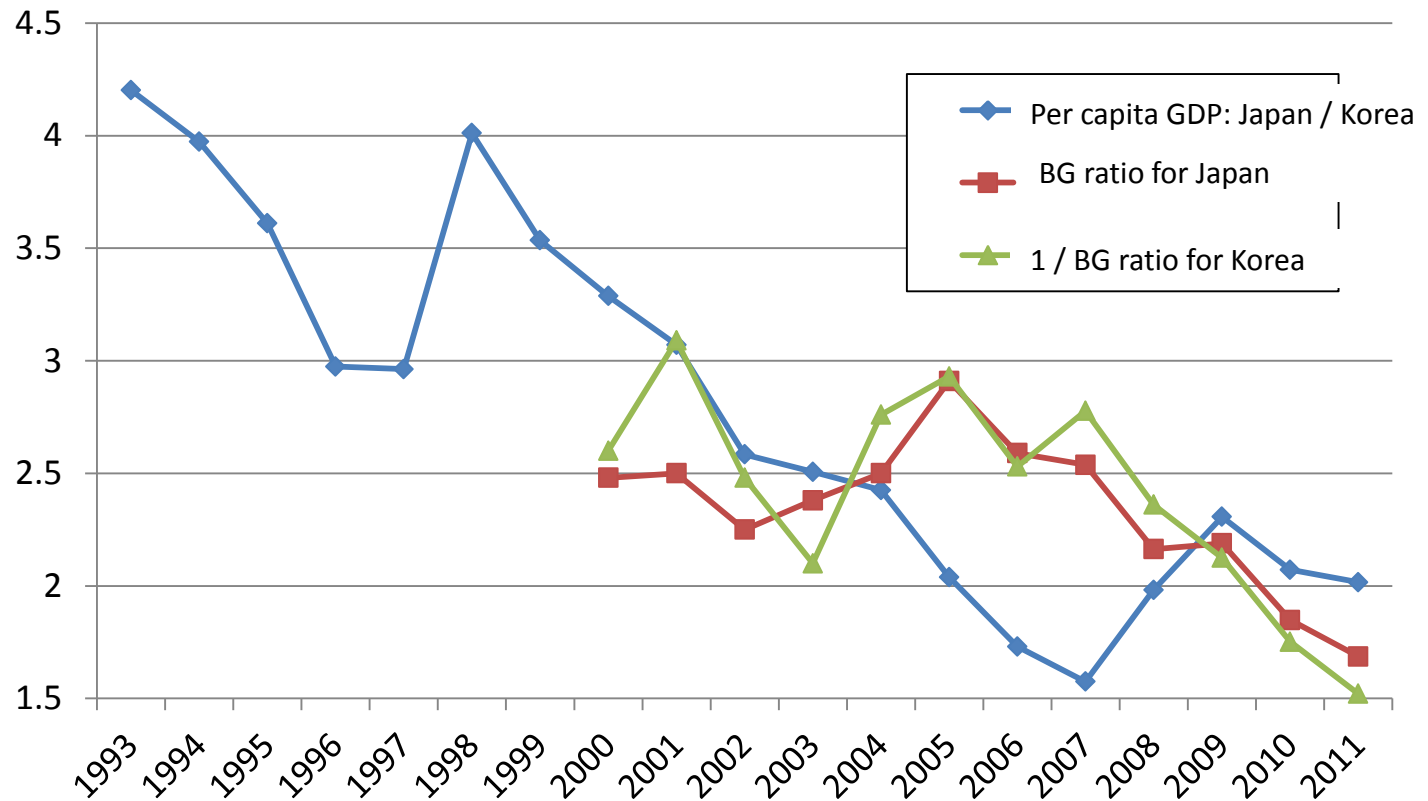
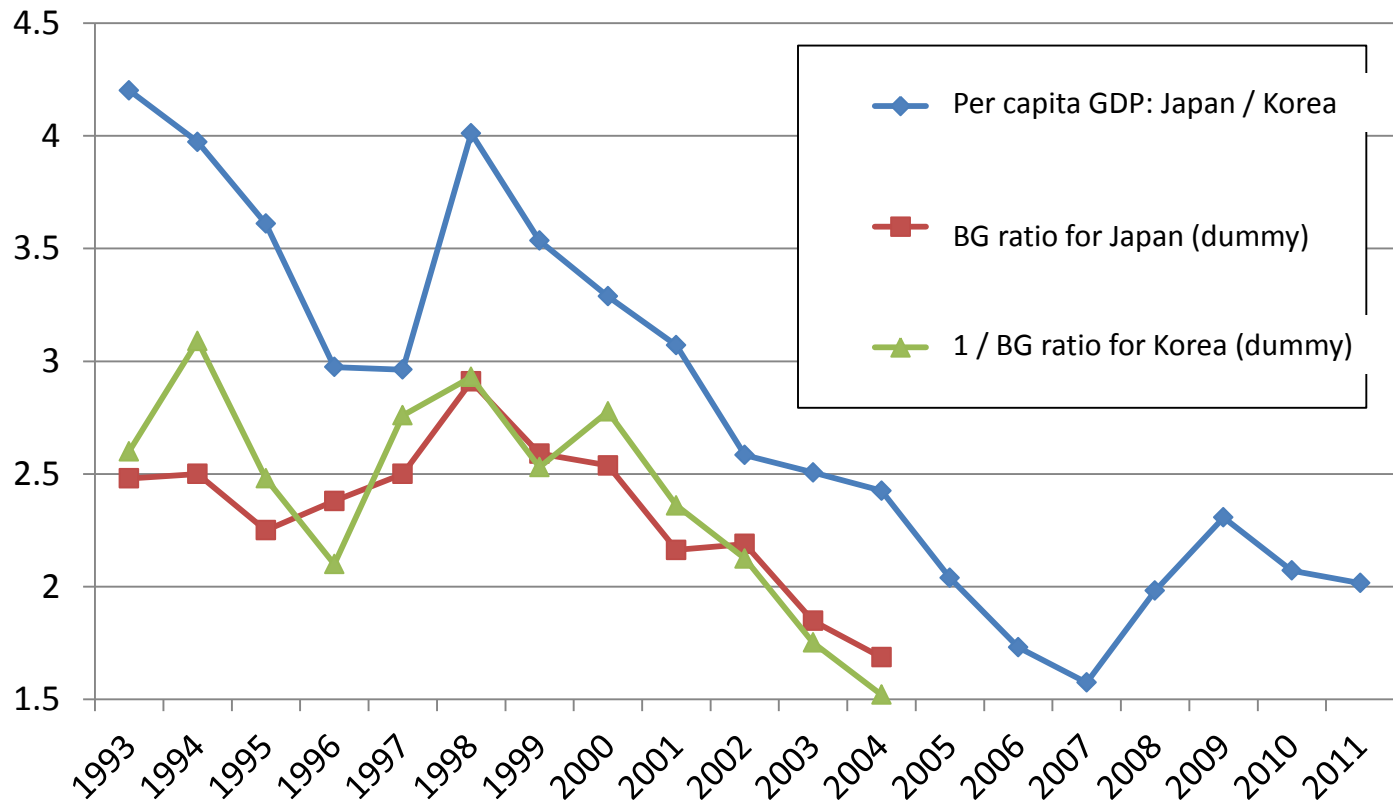


Figure 4 Trends in GDP ratio per capita and BG ratio (dummy) of Japan and Korea



Implications from trends in international marriage between Japan and Korea

- BG ratio of Japan to Korea and the reciprocal of BG ratio of Korea to Japan are related...Hypothesis 1 not rejected
- These figures are related to GDP per capita of Japan and Korea with some time lag...Hypothesis 2 not rejected
- It is highly probable that international marriage migration may be explained by labor migration model

Factors that are not considered in labor migration model

1. Policy related factors
 2. Historical factors
 3. Social and cultural factors
- These 3 factors are more influential on international migration
 - Especially the 1st factor can be a major cause of international migration through immigration policy and immigration control policy



Prospects of international migration from and to Japan (1)

- As the globalization and bloc economies proceed, policy-related, historical, social and cultural barriers are expected to become smaller
- Large proportion of international migration from and to Japan may be explicable by changes in 3 causal factors of labor migration

Prospects of International migration from and to Japan (2)

- Distance friction factor promotes migration as distances in terms of time and cost decrease as international aviation networks and low cost carriers expand
- Population scale factor has no relevance since even though as population of other countries increase, population of Japan decreases
- Economic gap factor promotes international migration in both directions as economic gap between Japan and other Asian countries decreases



Prospects of international migration from and to Japan (3)

- It is expected that scale and direction of international migration move toward the level that matches population and economic scale of Japan
- This means that international migration will be standardized at international level.

Prospects of international migration to and from Japan (4)

- Policy-related, historical, social and cultural factors may promote international migration if immigration and immigration control policies effectively utilize Japan's traditional culture, site seeing resources, social capital and science and technology
- International migration caused by these policy factors is qualitatively different from past migration, and may form a basis of a Japanese model (if realized)

References

- Inoue, T., 2010, Hypergamy and Hypogamy in International Marriage: A Case of Recent Marriage between Japanese and Korean. *The Aoyama Journal of Economics*, Vol.62, No.3, pp.43-55.
- Rogers, A., 1984, *Migration, Urbanization, and Spatial Population Dynamics*. Boulder and London, Westview Press.
- Todaro, M. P., 1969, A Model of Labor Migration and Urban Unemployment in Less Developed Countries. *The American Economic Review*, Vol.59, No.1, pp.138-148.