

Development Policy and Internal Migration in Taiwan

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1. THE REASONS, OBJECTIVE AND FRAME OF THE STUDY

There are substantial reasons for supporting the claim that a study on the economic development policy and internal migration in Taiwan is an urgent need of the government and of social scientists. First, internal migration has been one of the central issues of social and economic change since the end of the war. It has been taking place throughout the island. It has had and is having a great impact on many aspects of social economic life in this island. Second, in Taiwan economic development has been planned by the central government, and thus an understanding of government policy and its effect on the economic development policy is needed. Third, the relationship between internal migration and development policy is very close. This indicates that policy determinant would be the most appropriate explanation in any discussion as to the cause of migration in the past and present. Policy determinant, then, will be one of the important aspects of the study. Fourth, the relationship between policy and internal migration has not been well examined by local demographers, economists or other social scientists.

Based on these reasons the writer has decided upon this study. I will attempt to present a broad picture of the major aspects relating to development policy and internal migration in Taiwan. The discussion will focus on identifying the effects of economic development policies and their relevance to the concentration and the low selectivity patterns of the internal migration in the past. The discussion will also include the suggestion of need, and the proposal of rational policies for dispers-

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ing the population from the concentrated urban areas. Hopefully, the results of the study, which is based on a macro-point of view, can be useful for the betterment of population distribution over the island. Also, I expect to find some results which are different from the findings of the micro-approach to migration study which has already been made. A scheme for the analysis of the present study is given as the following figure:

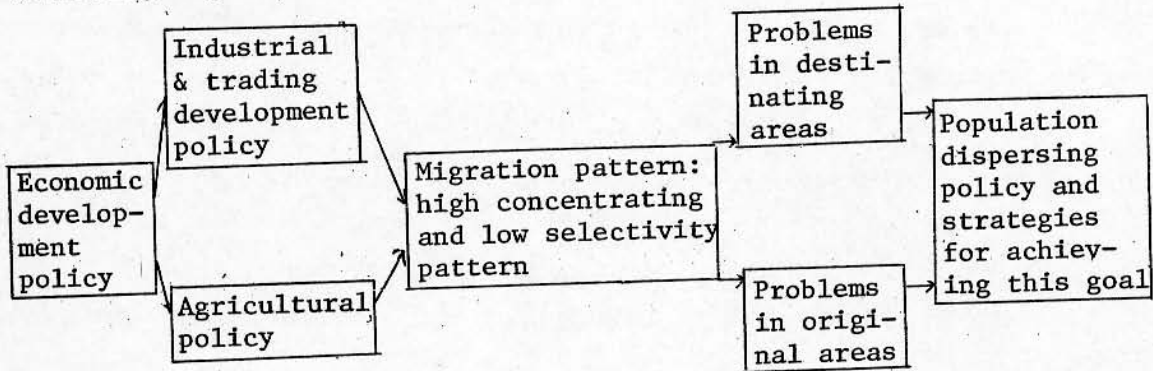


Figure 1. A frame for the analysis of the relationship between development policy and internal migration

2. DEVELOPMENT POLICIES AND THE EFFECTS

(1) Industrial development and foreign trade policies as major factors for the concentration of factories and business offices

In 1953 when the government started to implement the last program of The Land Reform Policy (called the land-to-the tiller program) the government also started to carry out the first of a series of four-year-economic development plans. The major goals of these subsequential economic plans were: (1) to increase or stabilize the economic growth rate; (2) to increase the employment rate; 3) to increase the amount of investment capital; (4) to improve the standard of living. In order to achieve these goals the government chose industrial development and foreign trade expansion as the two major directions of its efforts and provided many incentives to imple-

ment them, such as low interest rates, long term loans, and tax reduction in order to encourage industrial and trading investment. The concrete projects which the government has made in achieving these goals are: (1) a 19-item economic and financial improvement project, which was instituted in 1959; (2) an investment incentive act, set up in 1963; (3) A foreign trade expansion program, established in 1960; (4) three exporting industrial processing areas, constructed in 1966; (5) a low agricultural product price policy, and a low wage policy which were adopted at the beginning stage of the planning; (6) many benefits were to be provided to foreign investors at all stages of the development process; (7) A large amount of investment was provided for some industrial related public facilities, such as transportation improvement, and the construction of power plants; (8) one local industry, an automobile company, was heavily protected; (9) the economic administrative organization, and the public industrial management system was reformed. (1)

In this planned development process many benefits have been given to the industrial and the trading sectors of the economy, and some incentives, such as the control of product price, and a high tax rate, have been applied to the agricultural sector. Consequently, the proportion of industrial products to total domestic products increased from 17.1% in 1952 to 36.6% in 1972; the proportion of exported industrial products to total exported products increased from 4.8% in 1952 to 82.8% in 1972. (2)

This industrial development and trade expansion resulted in a large increase in the number of factories and offices. Most of these are now concentrated to two large urban areas, Kaoshiung city and the metropolis of Taipei, which includes Taipei city, and several townships within Taipei county, and Yangmingshan district. The total number of factories registered in Taiwan in 1952 was 9,966. This number increased to 24,906

(1) K.T. Lee, "The Prospects for the Fifth Four-Year-Economic Plan," Foreign Trade Monthly, Taipei, 14-2, Feb. 1969, pp. 1-4.

(2) Taiwan Statistical Book, 1973, p. 23 and p. 167.

factories by 1972. The industries which have expanded most rapidly are textiles, chemicals, saw mill and wood products, and machiney. (3) This reflects the fact that and industry will be equally developed, agricultural development has been always received less attention. From 1956 to 1969 agriculture was squeezed in order to support industrial development. During this period the government investment in agricultural development was small in comparison to the total expenditures for economic development. The price of major agricultural products such as rice, sugar, and pork meat was controlled by the government in order to create a low cost condition for various industries. Consequently, agricultural growth was slow, and the agricultural per capita income became much lower than the non-agricultural per capita income. The proportion of agricultural per capita income to non-agricultural per capita income decreased from about 80% in 1953 to only about 40% in 1970s. The famers' life, therefore, became harder during this economic development process. A large number of the agricultural population has moved out from farms to urban areas, where they have found better jobs. This population flow from rural villages and small towns to large urban areas thus became the major movement stream of internal migration on the island. In accompanying with this major migration stream, the high concentration pattern and the low selectivity pattern of migration also occurred. The characteristics of high concentration and low selectivity of migration, and the relationship of these migration characteristics to the development policy will be analyzed in the following section.

3. THE HIGH CONCENTRATION PATTERN AND THE LOW SELECTIVITY PATTERN OF THE INTERNAL MIGRATION

There are many criteria for defining the characteristics or patterns of migration. Among them the stream and the selectivity are two of the most promising criteria, both of which have been widely used by demographers. Demographers can also use other criteria for this purpose.

(3) IBID p. 85.

William Peterson classified five types of migration: primitive migration, forced migration, impelled migration, free migration and mass migration. (4)

In this study the writer will identify the characteristics and the patterns of migration in Taiwan from a macro point of view. Based on the two most promising criteria, the stream and the selectivity, the writer will identify (1) the high concentration pattern and (2) the low selectivity pattern for the internal migration of Taiwan.

(1) The high concentration pattern

During the period 1959-1968, while the migration was taking place rapidly in response to the take-off process occurring the industrial sector, most of the migrants were concentrated in Taipei metropolitan area and in Kaohsiung city. During this decade, the Taipei metropolitan area, which includes Taipei city, Taipei county and Yangmingshan district had 352.2 thousand net in-migrants, or 62.3% of the total number of net in-migrants in all net in-migration areas. Kaohsiung city had 125.1 thousands net in-migrants or 22.2% of the total net in-migrants in all net in-migration areas. Adding the percent for Taipei metropolitan area to the percentage for Kaohsiung city the figure is a high one of 84.5%. This number represents a high concentration pattern of internal migration in Taiwan.

During the period 1969-1973 Taipei metropolitan area and Kaohsiung city had respectively absorbed 60.2% and 21.6% of the total net in-migrants in all net in-migration cities and counties. The detailed numbers of net migrants for these two concentrated areas and that of other places during 1959-1973 are shown in Table 1.

From Table 1 we can see that Taipei county, Taipei city and Kaohsiung city are major net in-migration areas during the period 1959-1973. The number of net in-migrants for Taichung also became large in

(4) William Peterson, "A General Typology of Migration," American Sociological Review 23 (June, 1958), pp. 256-66.

Table 1. Net migrants for 16 counties, 5 cities and 1 district of Taiwan during 1959-1973 (thousand)

	1959-1968	1969	1970	1971	1972	1973	1959-1973
<u>Counties</u>							
Taipei	158.4	30.9	34.7	24.5	28.6	47.2	324.3
Ilan	-32.2	-2.8	-3.4	-4.7	-4.1	-5.8	-53.0
Taoyuan	6.9	2.1	3.2	5.8	9.2	11.9	39.1
Hsinchu	-32.9	-3.8	-3.6	-2.3	-3.3	-6.6	-50.5
Miaoli	-45.8	-5.5	-5.1	-5.8	-6.5	-7.2	-75.9
Taichung	-42.7	-1.6	-2.5	-4.7	-3.8	-3.5	-58.8
Changhua	-91.8	-10.7	-11.6	-9.7	-10.6	-13.0	-147.4
Nantou	-22.6	-5.1	-5.7	-6.9	-6.7	-9.4	-56.7
Yunlin	-69.0	-12.8	-13.4	-14.4	-14.3	-17.9	-141.8
Chiayi	-74.3	-13.6	-14.7	-14.4	-15.4	-21.0	-153.4
Tainan	-89.6	-10.4	-11.5	-12.8	-13.9	-19.1	-157.3
Kaohsiung	-28.8	-4.5	0.3	-0.6	3.7	2.6	21.7
Pingtung	-32.8	-8.3	-8.0	-9.3	-10.7	-11.1	-77.4
Taitung	11.4	-6.6	-5.8	-6.4	-5.2	-8.2	-16.3
Hualien	-4.9	-4.3	-5.3	-4.3	-4.1	-4.2	-26.7
Penghu	-15.3	-1.9	-4.7	-2.8	-2.8	-3.8	-31.3
<u>Cities</u>							
Taipei	159.1	27.7	23.1	28.9	35.1	24.7	298.6
Keelung	12.4	0.1	-1.2	-1.4	-1.8	-1.8	6.3
Taichung	34.2	5.8	7.9	9.3	9.8	11.5	78.5
Tainan	22.9	2.0	0.9	1.8	0.4	1.1	29.1
Kaohsiung	125.1	24.0	4.1	21.7	15.7	14.5	222.9
<u>Administrative district</u>							
Yangmingshan	34.7						34.7

Source: (1) Taiwan Demography Monthly Vol.5. No.2. (Feb.1970) pp 12-35

(2) Taiwan Demographic Fact Book 1969-1973.

recent years. But these numbers are still smaller than the numbers of net in-migrants for Taipei city, Taipei county or Kaohsiung city.

The high concentration of migration to Taipei metropolitan area and Kaohsiung city resulted in a great expansion of the population in these areas. The total effects of the migration on the population growth for a city includes not only the number of net in-migrants but also the births of the in-migrants. The net in-migrants for the three major net in-migrating cities and counties, Taipei City, Taipei County and Kaohsiung City for the period 1959-1973, were 324 thousand, 333.3 thousand and 222.9 thousand respectively. Taking account of the children born to net in-migrants as a part of the effect of migration on the increase of population in these areas the figures become much larger.

The high concentration of migrants to Taipei Metropolitan area and Kaohsiung City resulted in a higher net in-migration rate for these two areas than the rate for other cities. The migration rates for all cities and counties in Taiwan during the period 1959-1973 are shown in Table 2.

Table 2 shows some important facts: (1) Only major cities and a few counties had positive migration rates; (2) Among all areas with net in-migration rate, Taipei county, Taipei city, Yangmingshan district have significantly higher rates than the rates of other areas; (3) For most of counties and cities, the migration rates for the period after 1969 were higher than the rates before 1969; (4) In most cities and counties migration rates for females were higher than migration rates for males after 1969.

From this table we can see that Taichung city had high in-migration rates during the period listed. In 1972, 1973 the migration rate for Taichung city was higher than the migration rates for Kaohsiung city, indicating that this city, located in central Taiwan, has only recently become another area of high population concentration.

Table 2. Migration Rates for all cities and counties and a district, Taiwan, 1959-73
(per thousand)

Counties	1959-68		1969		1970		1971		1972		1973		1959-73
	M	F	M	F	M	F	M	F	M	F	M	F	
Taipei	16.5	25.9	28.6	29.0	17.6	21.3	20.6	22.5	20.6	22.5	33.3	34.0	20.9
Ilan	-8.8	-7.7	-6.5	-10.6	-11.3	-11.5	-9.0	-10.7	-9.0	-10.7	-12.6	-15.3	
Taoyuan	1.2	3.8	3.3	6.1	7.6	8.3	11.7	12.6	11.7	12.6	15.7	14.4	
Hsinchu	-6.5	-6.8	-5.9	-8.1	-4.0	-3.8	-5.5	-5.4	-5.5	-5.4	-10.5	-9.5	
Miaoli	-9.8	-10.7	-9.3	-10.5	-9.2	-10.8	-11.6	-12.8	-11.6	-12.8	-12.9	-14.0	
Taichung	-6.5	-4.9	-3.1	-3.2	-6.7	-5.1	-4.9	-4.4	-4.9	-4.4	-4.9	-3.6	
Changhwa	-9.8	-9.0	-11.1	-7.5	-11.2	-9.3	-10.6	-11.8	-10.6	-11.8	-13.3	-9.8	
Nantao	-5.1	-2.4	-9.2	-13.4	-12.1	-15.0	-11.2	-14.8	-11.2	-14.8	-15.8	-10.7	
Yuanlin	-9.8	-18.1	-15.7	-8.0	-16.4	-19.5	-16.4	-19.4	-16.4	-19.4	-20.6	-24.2	
Chiayi	-9.7	-16.5	-16.6	-18.0	-15.4	-18.6	-17.1	-19.2	-17.1	-19.2	-22.9	-26.8	
Tainan	-10.6	-12.5	-10.3	-14.6	-11.6	-15.9	-13.6	-16.1	-13.6	-16.1	-18.9	-18.2	
Kaohsiung	-4.3	-5.5	0.5	0.2	1.0	0.5	4.6	4.0	4.6	4.0	7.4	8.9	
Pingtung	-4.7	-10.8	-8.1	-11.5	-9.1	-13.5	-10.9	-14.9	-10.9	-14.9	-11.8	-14.8	
Taitung	4.7	-23.6	-21.3	-18.0	-24.2	-19.5	-15.0	-21.2	-15.0	-21.2	-2.4	-3.2	
Hualian	-1.7	-13.0	-15.4	-16.8	-9.5	-16.7	-9.1	-15.5	-9.1	-15.5	-0.7	-1.6	
Penghu	-14.4	-13.3	-40.4	-41.1	-24.7	-23.9	-23.5	-23.8	-23.5	-23.8	-21.4	-33.7	
Cities													
Taipei	15.5	17.0	8.9	17.3	13.6	18.9	14.0	24.3	14.0	24.3	8.0	18.2	18.3
Keelung	4.8	-3.1	-4.1	-3.3	-6.9	-1.2	-6.7	-3.9	-6.7	-3.9	0.3	0.6	
Taichung	10.2	12.2	19.8	16.3	20.6	20.2	20.1	21.1	20.1	21.1	-2.7	23.4	
Tainan	6.3	4.1	2.1	1.8	4.3	2.9	0.6	0.9	0.6	0.9	3.0	1.3	
Kaohsiung	23.2	12.2	24.8	27.8	24.4	26.7	14.2	21.4	14.2	21.4	14.5	17.2	25.7
District													
Yangmingshan	27.2	4.1											16.3

Source: Taiwan Demographic Fact Book 1969, pp344-368; 1970, pp386-405; 1971, pp616-650; 1972, pp 592-608; 1973, pp 532-548.

Although Taichung city had a high in-migration rate for females in 1972, and for both sexes in 1973, its number of net in-migrants in these two years was still much smaller than the number for Kaohsiung city, Taipei city and Taipei county.

The large number of net migrants moving into Taipei metropolitan area and Kaohsiung city during the period 1959-1973 resulted in the fact that these two areas had a much higher concentration of population in 1973 than in 1959. In 1963 the population for Taipei Metropolitan area was 2,116.9 thousands and the population of Kaohsiung city was 539.8 thousands. The total population of these two areas numbered 2,646.7 thousand, which was equal to 22.3% of the total population of Taiwan in that year. In 1973 the total population for these two areas increased to 4,260 thousands. This number was to 27.8% of the total population of Taiwan in that year.

From these figures we can see that more than a quarter of the total population of Taiwan is now concentrated in only 6.7% of the total land area of the island. If we only count the population and the land for Taipei city and Kaohsiung city, we can find that 2,857 thousands or 18.5% of the total population of Taiwan was located in these two largest cities. This population occupied only 3.9% of the total land of the island.

(2) Low selectivity pattern

The theory of selectivity in migration was developed by Ravenstein and it has been tested by many other demographers. Lee indicated that migration is selective because persons respond differently to the sets of plus and minus factors at origin and destination.⁽⁵⁾ He also pointed that migration could tend to be either positively or negatively selected, and that the life cycle is an important factor for the selectivity in migration. Leslie and Richarson (1961), Speare(1970), Long (1972), Rossi (1971), Goldscheder (1971), Chevan (1971), Thomas (1958),

(5) E. Lee, "A Theory of Migration," Demography 3 (1966) p. 56.

Browning (1970), Flidt (1969) and Zacharich (1969) examined the selectivity of migration by testing empirical data and publishing their results as in related to selectivity in age, in other variable of life cycle, in education, in sex, and etc.

With respect to selectivity in age, Willian Paterson reviewed the various findings of previous research in this field, and drew the conclusion that among migrants adolescents and young adults were usually predominant.⁽⁶⁾ The concept of sex selectivity in migration was first mentioned by Ravenstain in 19 century. According to his research finding females were more migratory than males. However, this was more true for short distance migration than for long distance migration.⁽⁷⁾ The educational selectivity in migration has been examined by Bogue, Shryock, Long and other American demographers by using the data of the United States. Bogue examined this data in 1965-66 and found that among both white and nonwhite population and among both males and females the rate of migration tends to vary directly with the level of educational attainment. the higher the education the higher the rate of migration tends to be.⁽⁸⁾ Shryock used various sets of data in different years (1935, 1940, 1950) to examined the educational selectivity in different streams of inter regional migration. His study found that, in general, interregional migration tended to be selective of the better educated persons. He also found that within age, sex, and color groups, interregional migrants tended to be better educated than non-migrants at their origin or destination. According to his conclusion, this persistent tendency was particularly true on the part of the migration to and from the south.⁽⁹⁾

(6) Willian Peterson, Population, 1969, p 262.

(7) Ravensten E. "The Laws of Migration," Reprinted Journal of Statistion Society, Part II, June, 1885.

(8) Bogue, Principle of Demography, p /69.

(9) Shryock, H.S. Sr. and Chares, N. Educational Selectivity of Interregional Migration, pp 309-310.

The theory and empirical findings mentioned above provide good guide lines for examining the selectivity of migration and the relevance of the selectivity in migration to development policies in Taiwan. Does the migration in Taiwan have the same patterns in age, sex and educational selectivities as that of other countries? Does the particular selectivity in migration in Taiwan relate to the particular development policies of this island? The writer will answer these two important questions in the section which follows:

Based on the official registered data we can see a small degree of selectivity in the migration streams of Taiwan. This low selectivity is partly caused by the few obstacles between the place of origin and the destination of the migration. It is also caused, in part, by the particular economic development policies in this society.

(a) The Low Selectivity of Age

Although many migration studies have shown high age selectivity in migration in other countries, the studies of migration in Taiwan do not show that this is so. An American scholar analyzed the migration data of Taiwan and pointed out that migration in Taiwan contained more children and more older men than that of the migration streams in most Western countries.⁽¹⁰⁾ This finding indicates that the selectivity of adult ages in the migration in Taiwan is not so significant as it is in the migrations in Western countries. The low age selectivity in the migration shown by Speare was based on the data of 1967. This pattern remained the same when the data for 1970 was observed. The following table shows the low age selectivity in migration in Taiwan.

Table 3. Shows that the proportion of children migrants aged 14 and below in the total number of migrant is high. It amounts to about a quarter of the total migrants. The proportion of older migrants (age 50 and over) in the total number of migrants is also high, amounting to

(10) Speare A.J., The Determinants of Rural to Urban Migration in Taiwan University of Michigan, 1968, p 49.

Table 3. Age Composition of Male and Female Migrants in Different Streams, Taiwan, 1970

Males

	Inter county or city	intra county or city	from village and town to city	from city to city
total	99.9 %	100 %	100.0 %	99.8 %
0-14	22.7	28.9	22.6	24.6
15-19	7.7	6.9	8.3	7.1
20-24	9.8	6.8	13.4	7.3
25-29	12.6	10.0	14.9	11.7
30-34	8.2	9.1	8.2	9.4
35-39	8.1	7.6	7.4	7.3
40-44	11.8	9.9	9.2	9.7
45-49	8.0	8.5	6.7	9.1
50+	11.0	12.2	9.3	13.6

(cont.)

Females

total	99.9 %	100.0 %	99.9 %	99.9 %
0-14	22.7	32.0	30.5	29.3
15-19	7.7	8.6	10.5	9.6
20-24	9.8	14.3	18.2	14.4
25-29	12.6	11.0	13.0	13.1
30-34	8.2	8.6	8.1	8.3
35-39	8.1	6.8	4.8	6.4
40-44	11.8	5.2	4.3	5.5
45-49	8.0	3.9	3.0	4.0
50+	11.0	9.1	7.5	9.3

Source: Taiwan Demographic Fact Book, 1970.

between 7.5 % and 13.6 % when the variation in different migration streams is observed. The latter is even higher than the percentage of the elderly population aged 50 and over in the total population for Taiwan in 1970 (11.28 %). This high proportion of children and old age migrants indicates that the age selectivity in migration in the society is low.

Speare has given good demographic reasons for the high percentage of children and older migrants and the low percentage of young adult male migrants. According to his explanation, the high percentage of children in Taiwan is the main reason for the high percentage of children migrants. The exclusion of military personnel from demographic statistical data is the principle reason for the low percentage of young adult migrants. The effect of migration from the mainland is the main factor for the high percentage of older migrants among the total number of migrants.⁽¹¹⁾ These three demographic reasons can only partly explain the particular low age selectivity pattern of migration. Besides these reasons the strong family ties, and the rapid economic development of the urban areas would also be important factors for determining this particular migration pattern. With the initiation of vigorous economic development in Taiwan the industrial sectors and service sectors in urban areas demanded a large amount of labor, including many children and old people from rural areas. Female children, and old women from rural areas were often in demand to serve as care takers for large urban households. The male labors from rural areas were commonly hired to work in construction, sanitation, transportation and other non-skill sectors of urban areas. Many rural male children were/are frequently sent by their farmer parents to work as apprentices in various kinds of factories or stores in the cities.

(11) IBID p 59.

(b) Low Selectivity of Sex

Not only is the age selectivity in migration in Taiwan low, but the sex selectivity in migration in Taiwan is also very low. Speare's analysis shows that there is selectivity in different streams of migration in Taiwan. This data also shows that the migration rates are higher for one sex in some age groups, and lower for other sex in other age groups. This inconsistent relationship between migration rates and sex in different age groups represents a low sex selectivity in total migrants. Based on the the migration data for the period 1969-1973 we find that the migration rates for males in all ages and the migration rate for females in all ages were very similar. This is particularly true in the long distance migration stream. Thus, we can draw the conclusion that sex selectivity in migration in the most recent years was low. Table 4 shows this low sex selectivity pattern of migration in Taiwan.

Table 4. Migration rates for males and females, Taiwan, 1969-1973

	In-migration rates				Out-migration rates			
	Inter county or city stream		Intra county or city stream		Inter county or city stream		Intra county or city stream	
	M	F	M	F	M	F	M	F
1969	44.4	42.9	28.7	32.7	43.9	43.6	28.4	32.7
1970	44.6	44.2	30.3	33.6	45.0	44.7	30.3	34.0
1971	45.0	45.1	32.4	35.1	45.4	45.8	30.9	34.9
1972	42.8	45.3	30.9	35.1	43.2	45.0	30.9	35.0
1973	46.3	49.2	32.7	37.6	47.1	50.1	33.2	38.4

Source: Taiwan Demographic Fact Book, 1969-1973.

The data in the above table shows that generally differences between the male migration rate and the female migration rate in every stream, and in every year are small. However, the difference is greater in intra

county or city stream than in inter county or city stream. This caused principally by the fact that the effect of marriage migration on the intra county or city migration is greater than it is on the inter county or city migration stream. If the effect of marriage migration had been excluded, the difference between male and female migration rates in the intra county or city stream would become much smaller.

Since the major migration direction caused by the economic development process is the inter county or city stream, development has more of an effect on this stream than on intra county or city stream. Rapid economic development demands not only more male labor, but also more female labor from rural farms to assist in industrial, trade and service sectors in the urban areas. This results in a low sex selectivity in the inter county or city migration stream.

In the early stage of the development, the migration rate for males was generally higher than the migration rate for females in the long distance migration. This difference become smaller in the latter stages of development. Data in Table 4 shows that this change has been taking place since 1970. This change from a greater difference to a smaller difference between male migration rate and female migration rate reflects the fact that industrial, commercial and service sectors absorbed a large number of female laborers in the latter years; during this period the demand for male labors in the development process was not so intensive. During the initiation of the development process, Taiwan made many improvements in its transportation and communication system. This made communication easier and transportation more convenient between rural areas and urban places. Therefore, it encouraged a large number of females to migrate to the cities. The high migration rate for one sex in one stage and for another sex in another stage shows that another aspect of the low sex selectivity in migration.

(3) Low educational selectivity

Many studies in migration have found that educational selectivity

exists in migration, although the selectivity may or may not be consistent in different streams. Herrick (1965), Zacharich (1966) and Phsinai's (1966) made studies on migration in different countries. They have drawn the conclusion that migration is selective of the better educated persons. Speare's study of migration in Taiwan points out that, in general, migration tends to be drawn disproportionately from the better educated groups, and the selectivity was greater in the three streams toward greater urbanization: (a) rural towns to cities, (b) urban towns to cities, (c) rural towns to urban towns (12). Speare's finding has been made on the basis of comparing the migration rates for different educational groups in different streams for per 1,000 persons, aged 15-59 at the place of origin. This way of measuring may have some bias: (1) the method has not taken into account the effect of student population on migration rate. The migration rate in some low educational groups could be highly affected by a student population which can not easily migrate. In general, a large proportion of the population which is from 15-20 years in age is student population. These students have been placed in an educational category lower than the level which they have attained, e.g. a senior high school classified as a junior high school graduate. Since school regulations restrict the migration of the student population, the students may affect the migration rate for this lower educational group. This effect is particularly pronounced in lower level educational groups such as primary graduates, or junior high school graduate groups. (2) This measurement accounts for deceptive statistics in that the educational group with higher migration rates is the highly migratory group. As a matter of fact, a group with higher migration rates may have a small number of migrants. In this society, the proportion of low educational migrants in the total number of migrants is also higher than the proportion of high educational migrants in the total number of migrants. For these reasons, migration rates do not necessarily present an accurate picture of educational selectivity and the

(12) IBID p 24.

educational composition of migration. In order to present a realistic picture of educational selectivity in the migration, the writer will compare the proportion for each education group in the total migrants with the proportion for each education group in the total population. Three sets of proportions which respectively represent the educational composition of total migrants, of the major migrants who are from villages, towns to cities, and of the total population are shown in Table 5.

Table 5. Educational Compositions in Migrants and in Total Populations, Taiwan, 1970

	Total Migration Stream	Villages, Towns, and Cities	Total Population
University or college	2.3 %	2.7 %	3.2 %
Senior high school	8.7	10.6	7.6
Junior high school	8.1	7.8	7.8
Primary school	29.1	29.7	27.0
Illiterate	13.2	11.1	12.6
Under school ages others	38.6	38.7	41.8
Total	100.0	100.0	100.0

Table 5 shows some important facts which indicate low selectivity in migration within the island: 1) The percentage of the college educated population in the total migrants and in the major migrating stream is slightly lower than that of the total population; 2) The less educated people, e.g., primary school graduates, occupy a higher percentage among the total migrants, and the immigrants of the major streams than the total population of Taiwan; 3) The percentage of migrants with a junior high school education among the total migrants is not lower than the percentage of population with the same level of education; 4) The difference between the senior high school group in migration and the percentage for people with the same education level in the total population is small.

The above table further proves that the less educated people were as mobile as the higher educated group. The high demand for labor in many low technical industries and businesses in the economic take-off stage may be the most important factor for the low educational selectivity in migration on Taiwan. Many manufacturers and businesses in urban areas demanded unskilled or semi-skilled workers. Consequently, these urban industries and companies have more less educated migrants than high educated employers from rural areas. In past years, the government has also encouraged the development of light, rather than heavy industries. Many light industries, such as textiles, food processing, and electrical installment processing have thus been established. Educational selectivity, therefore, was not significant in the population flow to these low-skill industries located in urban areas.

In future stages, the direction of industrial development in Taiwan will be toward more heavy industry. In this stage of development, return migration from abroad, and return migration from urban to rural areas may become the major issue in studying the effects of development on migration.

The educational selectivity in these different migration streams may be different from the selective pattern of the internal migration in the past. This future pattern of selectivity is beyond the focus of this study. Here the writer concludes that the low selectivity of age, sex, and education in the migration during the past few years has resulted in a rapid population flow, and a large volume of migration to a few urban areas. Consequently, this concentration of people and mass migration has resulted in many problems for their destinations, their place of origin, and for the migrants themselves.

4. THE PROBLEMS CAUSED BY CONCENTRATING AND LOW SELECTIVE MIGRATION

The effects of internal migration on people and society are many: some effect are good and some are bad for national, community or

individual developments. Important positive effect of the internal migration in Taiwan include: (1) the in-migrants bring tax revenue for the respective city governments; (2) the in-migrants meet labor needs at the destination; (3) the in-migrants bring increased capital into the destination; (4) through migration people tend to improve their social and economic opportunities; (5) out-migration reduces population pressure at the place of origin. The negative effects of migration are also many. This section will focus on negative effects at the destination and in the place of origin.

(1) Social, economic and ecological problems in urban and industrial centers

A heavily populated city or industrial center faces many problems during its population concentrating process. Hawley pointed out that transportation environmental pollution, urban blight, slums, ghettos, black population, suburban-central city separation, urban renewal and political discrimity are the salient issues of metropolitan problems in the United States .⁽¹³⁾ Hauser points to political problems, psychological problems and Negro population problems as the major problems in American urban areas. According to his explanation urbanism causes weaknesses in the bonds of kinship, a decline in rate of family growth, the substitution of secondary relations, the utilitarian, social and personal disorganization, and juvenile delinquents and criminals. On the aspect of political problems Hauser points out that the urban environment has produced a corrupt political bases, the unscrupulous lobblyist and political order, the problems of annexation, the centralistic, the conflict between local and central governments, the high cost of living and strain between political parties. On the physical aspect, Hauser mentioned that urban environment creates slums and problems of commuting, congestion, transportation, service and maintenance. As to the

(13) H. A. Hawley, Urban Society, 1971 pp 242-263.

Negro population, Hauser pointed out that Negro in-migration into urban areas causes the problems of conflict, adjustment, segregation, prejudice and discrimination. (14)

Taipei city, Taipei county and Kaoshiung city respectively a commercial and political center, an industrial center, and a industrial-trading sea port have common and specific problems. These are: environmental pollution, traffic congestion, housing shortage, speculative investment on land and buildings, a water shortage, a lack of parks and green areas, and juvenile delinquency. Most of these are their common social, economic and ecological problems.

(A) Environmental pollution problem

Air and water pollution have been very serious in these urban areas since the concentration of population, factories and business companies. Resident often complain about the dirty air which coats everybody's nose with dark dust, and white collar workers cannot keep their shirt white after a day's work. Tanshui River and Ai River pass through Taipei city and Kaohsiung city respectively, and have become dirty streams in which people can no longer swim.

(B) Transportation problem

The transportation problems in Taiwan's urban areas differ from transportation problems in cities in the United States. In American cities the main transportation problem is the abundance of automobiles; in Taiwan the most serious problem is the shortage of buses. The bus is still the most important mode of transportation in this developmental stage. The demand for city buses has been very great in Taipei and Kaoshiung since the influx of in-migrants. The transportation problems in these areas is also caused by conflicting transportation: different classes of people use different modes of transportation. Wealthy people drive automobiles, middle class people take bus, working class people

(14) P. M. Hauser, Population Perspective, pp 131-156.

use bicycles, low and middle class people take bus, and upper and middle class people occasionally take taxis. These different transportation forms compete with each other in congested streets.

The effects of in-migration on transportation in cities can be also seen from the extreme crowding in the railroad stations and the bus stations during long weekends and holidays. The transportation problems in these concentrated areas may further deteriorate. A new problem is the limited parking space for private automobiles.

(C) Housing shortage problem

The housing shortage in urban areas has been a serious consequence of in-migration. A greater demand for housing has caused an increase in the price of housing and land. Houses in Taipei have doubled in value in a very short period. The rapid inflation in housing has induced many speculative investments in housing and land, thereby resulting in a more serious housing shortage and a serious transference of capital from product sectors to housing and land investment.

(D) The lack of park or green areas

The need for parks and green areas in these crowded urban areas has been often pointed out, but the government has not implemented the park and green area projects very successfully. Some areas, originally designed as parks, have been instead used for constructing streets or buildings. The existing parks within major cities are overcrowded by people on weekends and holidays. The lack of open spaces in urban areas forces a large number of high income people to retreat to green areas, far from the city, for their living places. It can be predicated that many middle class citizens in city areas will also move out from the city in order to enjoy green areas.

(E) Water shortage problem

More people in urban places require an increased water supply. In

major urban areas in Taiwan the water facilities cannot meet the requirements of an increasing population. This deficient water supply is also caused by water pollution, and by declining water resources. As a matter of fact, these two factors are basically caused by the rapid expansion of population in these urban areas. A newspaper in the capital city of Taiwan reported that people living in the north part of the city occasionally had to buy water for cooking.

(F) The poverty problem

In urban areas there are many poor people, who for the most part are new migrants from the countryside and are now living in slums. The poor quality of housing and food has increased their susceptibility to illness. Poor social contacts causes difficulties in obtaining jobs. A careful observer would be impressed by groups of new immigrants who wait daily for temporary jobs under the largest bridge in the capital city. Although many poor people live in the rural villages on the island, the urban areas have a significant number, also.

(G) Delinquency problem

Delinquency rates are usually higher in high populated cities than in rural areas. Sociologically and demographically this rural-urban difference in delinquency rates is caused by a larger number of new migrants in urban areas than in rural ones. The personal disadjustment and the social disorganization of new migrants in urban areas may cause them to transgress the law.

All in all, the mass migration to urban areas has resulted in many problems. These problems probably can be effectively solved by new migration policies as well as new development policies. Some policies which can solve these problems will be suggested in the last section of this paper. Before these policies are proposed, the writer will also examine the effect of migration on several economic problems in rural areas.

(2) The social economic problems in rural areas

The mass out-migration from the countryside has also resulted in many problems in rural regions. Some of the more serious problems are: (A) labor shortage and agricultural depletion; (B) deficit of public facilities and service; (C) the brain drain.

(A) Labor shortage and agricultural depletion

Most migrants to urban areas are originally from rural farms. During the industrial development process, agricultural labor pools have declined, resulting in an agricultural labor shortage and agricultural depletion. Two distinguished economists in Taiwan estimated that more than 40,000 people outmigrated from the agricultural labor sector annually between 1966 and 1970, and about 67,000, 82,000 and 115,000 people left the agricultural labor force in 1968, 1969 and 1970 respectively. (15) Since this loss has not been successfully substituted by mechanization, it has resulted in a serious labor shortage in agricultural areas. The more extensive labor impact on the farms resulted in a low agricultural growth rate. In 1969 the annual growth rate of agricultural products fell off 3.8%, the lowest rate since the end of the war. In 1971 and 1972 the agricultural growth rate remained at a very low level -- 1.0 % and 0.2 % respectively. This rate of growth in agriculture thus became an important aspect in the criticism of the government's industrial development policy.

(B) Lack of public facilities and services

Population decreases in rural areas have lessened the ability of the rural government to develop public services and facilities. The quality of rural life has become worse. In some large outmigration townships, local governments lack sufficient funds to construct buildings for

(15) Liang Kuo Shu, Lee Teng Huey, Process and Pattern of Economic Development in Taiwan, unpublished paper, p. 26.

public health and education, or to pay reasonable salaries to medical personnel. These poor conditions in public facilities and service encourage more people to move out.

(C) Brain drain

In many outmigrating counties or townships, a brain drain problem exists. Outmigration of persons with high levels of education results in the loss of community planners and community leaders. Consequently, these communities are unable to solve their own problems.

4. SUGGESTED POLICIES: TO TAKE EUROPEAN EXPERIENCES AS EXAMPLES

Since the concentrating and mass migration from rural to urban areas has resulted in many problems, and as this pattern was directly or indirectly affected by development policies, the migration of these problems will be highly dependent on the change of migration and development policies.

The future direction or pattern of migration is suggested to be one in which populations move out from urban areas or cease movement into these areas. This goal of dispersing populations from concentrating areas would be achieved by new economic development policies or programs.

The government in Taiwan has implemented economic development policies which might disperse population. These include: 1) rural industrialization projects, 1970-1974; 2) rural reconstruction project, 1970 --; 3) return to the field project, 1974 --; 4) young farmer training and development; 5) a ten-item national construction project. Unfortunately, these projects have not yet brought about population dispersal; partly because some of these projects have not been completed, and partly because some of these projects were designed to achieve only rural development but not population dispersion. In order to achieve population dispersion, the government can continually implement these projects while adopting new ones. In the final part of this paper the writer will

suggest that the government adopt projects which have proved successful in Europe.

(1) Decentive policies for controlling the growth of Taipei metropolitan and Kaoshiung city

The decentive policies have been much used by Great Britain, France and Sweeden to control the growth of concentrating urban growth. According to the experiences of European countries, the decentive policy can be applied to industrial and commercial construction. Great Britain has discouraged industrial growth in London since 1947 and controlled the construction of office buildings in the capital between 1967 and 1970. This policy solved the problems of industrial concentration in Greater London and lowered unemployment throughout the country. Through this policy, a large number of jobs have been moved from London. (16)

In order to limit the population expansion in Paris, France also adopted a policy to control industrial concentration between 1954 and 1955 and also restrained the expansion of tertiary employment in Paris in 1968. (17) The industrial control policy resulted in a sharp decrease in industrial construction in Paris after 1955. The tertiary employment control policy resulted in less office and tertiary employment.

In 1969, Sweeden also adopted policies restraining the growth of Stockholm. Under this policy, Sweeden relocated government offices out of Stockholm and controlled the expansion of service activities in private and public sectors in Stockholm. This resulted in a sharp decline in domestic and international migrations in the city in 1971 and 1972. (18)

These Western experiences indicate that decentive policies for controlling population concentration are effective and Taiwan should

(16) James L. Sundquest, Dispersing Population: What Can American Learn from European Countries, 1975, pp. 42-46, 55.

(17) Ibid., p. 96, 111-115.

(18) Ibid., p. 228.

consider them for dispersing population in Taipei and Kaohsiung.

(2) Incentive policies for the development of depressed areas

Evidence abounds showing that an incentive policy has been effective in developing depressed areas, stabilizing population or encouraging population growth.

The Government can adopt this policy to disperse populations from congested areas and increase populations in depressed ones. The European countries mentioned also used this policy to achieve population dispersion. Britain adopted incentives for developing designated areas between 1936 and 1945 and in 1963. This policy increased the number of jobs and factories in depressed areas. (19)

Italy also introduced a series of incentives for investment in Southern industries between 1957 and 1964, in order to develop the South and reduce the North's population. By the end of the period, these strategies brought about great industrial expansion in the South and slowed down the migration from South to North.

If Taiwan takes these experiences as examples, it could provide incentives for rural industries and rural farms, and increase welfare benefits for rural people. This should include special benefits for farmers, rural factory owners, and workers, and rural immigrants. The financial aids, investment in rural public facilities, tax incentives and consultation for rural immigrants can also be used.

(3) Regional development policy

As this policy has been successfully used by Britain, France, Italy and the Netherlands in achieving population dispersal, it might also be used in decentralizing populations in Taiwan.

In Britain the regional development policy includes the concentr-

(19) Ibid, p. 39-52

(20) Ibid, pp. 152-158.

ation of public investment and construction in new towns and providing assistance in developing regions. The achievements of this policy include: 1) the congest South East has lost population; 2) jobs increased in developing areas; 3) a net growth in national investments and employment; 4) increased tax revenues. ⁽²¹⁾

* In France the regional development strategy was used between 1959 and 1970. Its more significant results include the industrialization of the West, and the development of growth poles or growth centers in all regions. ⁽²²⁾ In Italy, regional planning was carried out between 1965 and 1970. Under this, an industrial fund for regional development was created to help the regional government carry out the projected goals. ⁽²³⁾

In the Netherlands, the strengthening of the regional industrialization was encouraged between 1961 and 1971. The actions included: 1) the liberalization of the inducements towards industry to locate in the problem areas; 2) the modification of the incentive system so to increase its appeal to the technologically advanced capital industries in Dutch areas; 3) to subsidize the weak and risky enterprises; 4) to help unemployment workers relocate out of the West; 5) to provide 60 million guilders for development nuclei. ⁽²⁴⁾ These actions resulted in a large outmigration from the West (a congested area) after 1961.

Taiwan has implemented several rural development projects which are very similar to regional planning in Europe, but these projects have only achieved the improvement of the farmers' lives but not population dispersion. In the future, the Government can restructure these projects so as to achieve population dispersion. Besides modifying these old projects, the Government should adopt policies of regional planning used in Europe.

All strategies suggested by this study hold potential for Taiwan. When Taiwan considers these policies, the experience of Europe will be

(21) Ibid., p. 67.

(23) Ibid., pp. 164-166.

(22) Ibid., p. 119.

(24) Ibid., pp. 199-204.

informative. Of course, Taiwan should not adopt these policies in toto, but it can examine them and select those applicable. Taiwan may, thus, avoid cost errors.

In conclusion, the concentrating and mass migrations and their effects on social economic problems basically caused by development policy. Thus, the change in migration pattern and the solutions of the problems caused by migration should be dependent on the change of development policy.

REFERENCE

1. Adams, D.
1969 "Rural Migration And Agricultural Development in Columbia," Economic Development and Cultural Change, 17, pp 527-539.
2. Adames, D. (ed.)
1968 The Brain Drain, Micmillan,
3. Bechlofer, F.
1969 Population Growth and the Brain Drain, Aldine, pp 3-71
4. Bogue, D.
Principle of Demography
5. Browning, H. and Flindt, W.
1969 "Selectivity of Migrants to a Metropolis in a Developing Country," Demography 6, pp 347-357.
6. Caldwell, J.
1969 Aferican Rural-Urban Migration, Australian National University Press.
7. Chevan, A.
1971 "Family Growth, Household Density and Moving," Demography 8, pp 451-458.
8. Davis, K.
1974 "The Migrations of Human Population," in The Human Population, Chapter 5,
9. Ducoff, L.
1965 "The Role of Migration in the Demographic Development of Latin America," Milbank Memorial Fund Quarterly 43 pp 197-210
10. Fortney J.
1970 "International Migration of Professionals," Population Studies 24, pp 217-232.
11. Foreign Trade Monthly
1966 Taipei, 6-9, Sept. 1961; 11-5, 14-2; 16-2.
12. Galle O. and Taeuber Karl
1966 "Metropolitan Migration and Intervening Opportunities" American Sociological Review, 31 pp 5-13.

13. Goldscheider, C.
1971 Population, Modernization and Social Structure.
14. Goldstein, S.
1973 "Interrelations Between Migration and Fertility in Thailand," Demography 10, pp 225-241
15. Girard A. et al
"Geographic Mobility and Urban Concentration in France," in C. Janson(ed.) Reading in the Sociology of Migration, Pergamon Press, pp 203-253.
16. Hawley A.
Urban Society.
17. Hawley, A. Fisher, C. and Berry, B.
1973 "Review Symposium: A Nation of Stranger," American Journal of Sociology, 79:1, pp 165-175.
18. Heide, H. T.
1973 "Goals and Objectives of Population Redistribution Policies with Special Reference to Western Europe," IUSSP, Liege,
19. Kiser, C. V. Sea Island to
1932 Sea Island to City: A Study of St. Helena Islanders in Harlem and Other Urban Centers, N. Y.: Atheneum, 1969 (Orig. Pub. Columbia U Press.)
20. Lee, E.
1966 "A Theory of Migration," Demography 3, pp 47-57.
21. Ladensky, J.
1967 "Occupational Determination of Geographic Mobility Among Professional Workers," ASR 32, pp 253-264.
22. Leslie, G. and Richardson A.
1961 "Life Cycle, Career Pattern and the Decision to Move," ASR 26, pp 894-902.
23. Long, L.
1972 "The Influence of Number and Ages of Children on Residential Mobility," Demography 9, pp 371-382.
24. Long, L.
1973 "Migration Differentials by Education and Occupation: Trends and Variation," Demography 10, 243-258.

25. Long, L.
1974 "Poverty Status and Receipt of Welfare Among Migrants and Nonmigrants in Large Cities," ASR 80, pp 46-56.
26. Peterson, W.
1958 "A General Typology of Migration," ASR 23, pp256-66.
27. Peterson W.
1969 Population, The Macmillan Company, New York, 1969.
28. Raczynsky, J.
1967 "Source of Geographical Mobility Among Professional Workers," Demography 4, pp 293-309.
29. Reid W.
1971 "Federal Migration Policy; Present Reality and Future Alternatives", in Eaton J. (ed) Migration and Social Welfare, pp 157-188.
30. Rose, A.
1969 Migration in Europe: Problems of Acceptance and Adjustment, Minnesota.
31. Speare, Alden Jr., et al
1971 "A Cost-Benefit Mode of Rural to Urban Migration in Taiwan," Population Studies 25, pp 117-130.
32. Speare, Alden Jr., et al
1975 Residential Mobility, Migration and Metropolitan Change, Ballinger, Chapter.
33. Speare, Aldeu Jr.
1968 Determinant of Internal Migration in Taiwan, University of Mich.
34. Speare, Aldeu Jr.
1973 "Migration and Urbanization in Taiwan."
35. Sjaastad, L.
1962 "The Costs and Returns of Human Migration," Journal and Political Economy 70:5, part 2, pp 80-93.
36. Stouff, S.
1962 Social Research to Test Ideal, Free Press, Chapter 4, pp 68-112.

37. Schaiberg, A.
1970 "Rural-Urban Residence and Modernism: A Study of Ankara Province Turkey," Demography 7:1, pp 71-85.
38. Stone, L.
1968 "Population Redistribution and Economic Growth, U.S. 1870-1950: A Review Article," Demography 5, pp 508-524.
39. Sundquest, J.
1975 Dispersing Population: What American Can Learn from Europe, Washington, D.C., The Brookings Institution,
40. U.S. Commission on Population Growth and the American Future, pp600-
1972 719.
41. Wander, H.
1973 "Population Policies Affecting Internal Migration and Urbanization," IUSSP, Liege, Aug.
42. Zacharich, L.C.
1969 "Sex-Age Patterns of Population Mobility in the UAR," International Population Conference, Vol IV. London pp 2836-2844.

台灣的發展政策及島內人口移動

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蔡宏進

本文旨在討論晚近台灣的發展政策對島內人口移動的影響及其在都市與鄉村所產生的問題，進而提供歐洲五國施行人口分散化政策的經驗供為我國減輕人口向都市集中的借鏡。

文中指出過去本省的發展政策着重工業發展及國際貿易，農業發展相對較少受到鼓勵。導致工商機關在台北及高雄等大都會區快速發展。人口也從鄉村向這些都會地區高度集中，且移動人口的選擇性也低。高度集中型態及低度選擇型態人口移動的結果一方面導致都市環境污染、交通擁擠、住屋短缺、公園及其他綠地缺乏及用水不足等問題，另一方面導致農村的勞動力短缺，農產成長率降低，公共設施困難及領導及計劃人才流失等問題。見於此作者乃建議為緩和這些問題的滋長應由改善發展及人口移動政策着手。可行的政策除現行的諸項農村建設方案外也應包括對大都會發展的調節，更有效刺激不景氣地區的發展及推展區域計劃等。這些措施在歐洲英、法、荷、瑞、意諸國均有經驗，其推行的目的在達人口分散化，可供我國之參考及借鏡。

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