I. INTRODUCTION

It is generally assumed that the importance of international migration for Peninsular Malaysia ceased with World War II. The depression of the 1930's had slowed down the flow of large scale immigration, but the Japanese Occupation effectively cut off international movement. After the end of the war, strict immigration laws prohibited the return of the pattern of massive international migration that had characterized the preceding 50 to 70 years. But in recent years there seems to be evidence of outward migration from Peninsular Malaysia to Singapore and other countries. The magnitude does not seem to be as great as the inward flow of a few decades ago, but it appears to be quite a substantial movement.

The primary technique of analysis used in this paper is the indirect method of estimating net migration, often called the residual or vital statistics method. Most simply, it is represented as the difference between population growth (measured between censuses) and natural increase:

Net Migration = \( P_2 \ - \ P_1 - (B - D) \)

Where \( P_1 \) and \( P_2 \) are the population at time 2 and time 1, and \( B \) and \( D \) refer to the number of births and deaths during the time interval from 1 to 2. The estimate of external migration from Peninsular Malaysia during the 1957 to 1970 intercensal period is derived as follows:

* This research was completed while the author was working for the Ford Foundation as a demographic consultant to the Malaysian Department of Statistics. The interpretation and conclusions in this article are solely those of the author and do not necessarily reflect those of the Ford Foundation or the Department of Statistics. The author thanks Ramesh Chand, Chief, Malaysia, and James Dobbins, Wong Tet Khoo and Charles Schlegel for their comments on an earlier draft.


2. Sources of Data:

Notes:
1. The 1957 and 1970 Census population figures are adjusted to mid-year (30 June / 1 July) to provide and exact thirteen year interval.
2. The births and deaths for the first half of 1970 and last half of 1957 are estimated by taking one-half of the total numbers of births and deaths for the entire year.

Census Underenumeration

First consider the estimate of intercensal population growth which is calculated by subtracting the population at the first census from the population at the second census. If the absolute magnitude of underenumeration was the same in both censuses, then the estimate of intercensal growth would be measured correctly. While this is not always the case, it would tend to be so if the percentage of underenumeration decreased from the first to the second census by the same degree as the rate of intercensal population growth. It is difficult to make any definitive statement on the comparative degree of underenumeration in the 1957 and 1970 Population Censuses of Peninsular Malaysia. The Post-Enumeration Survey of the 1970 Census gave the figure of 4.05 percent underenumeration. However, it is well known that even the most careful re-enumeration of a population will catch only part of those who were missed in a census. There was undoubtedly a certain number of inaccessable households and floating persons who were missed in both the Census and PES 1970. As for the 1957 Census data, the only published evaluation estimated the under-enumeration of Peninsular Malaysia (then the Federation of Malaya)
Census at 2.7 percent. However, the basis of this evaluation was a projection from the 1947 Census population, which itself was subject to problems of undercoverage. Thus it is not possible to compare the ECAFE evaluation of the 1957 Census and the PES evaluation of the 1970 Census since their estimates were constructed with quite different assumptions.

If we adjust both the mid-year 1970 and 1957 population upward, assuming constant 4.05% underenumeration, the estimated "true" population would be 6,544,000 in 1957 and 9,130,000 in 1970, which results in an intercensal population growth figure of about 100 thousand and more than that based on the actual mid-year census counts. The difference would reduce our earlier estimate of net external migration to about 400,000 from the half-million estimated earlier. While these are only hypothetical calculations, they suggest that part of our estimate of external migration may be due to the degree of relative underenumeration in the two censuses. If the percentage underenumeration in the two censuses remained about the same, then perhaps one-fifth of the calculated net out-migration may be due to a bias in the estimation of population growth. This would still leave, however, a very large figure of net out-migration that deserves further examination.

Under-registration of Births

Although there is as yet no detailed study on the completeness of birth registration during the intercensal period, several indirect measures suggest that coverage is rather good. In a study of birth registration during the 1947 to 1957 intercensal interval, Saw noted that under-registration was about 10 per cent though there was considerable variation by state and ethnic community. It has probably improved in more recent times, especially as primary education has become almost universal and a birth certificate has been required for school entry. Another strong motivation for birth registration has been its necessity for application of an Identity Card at age twelve. Identity Cards which are issued by the Department of National Registration, are compulsory and thought to be almost universal. Several checks of the completeness of birth registration have been made by comparing the reported numbers of births and birth rates with those from sample survey data, and those have indicated that the completeness of birth registration coverage is probably very high.6


Under-registration of Deaths

There seems to be no strong motivation for the registration of deaths comparable to that of births. However, the nature of the registration system is the same as that for births (through hospitals, police stations, and local village leaders) and it seems that compliance is fairly widespread. An evaluation of the completeness of death registration by checks of internal consistency seem to indicate that the coverage was fairly complete, at least in so far as no major discrepancies emerged.7

Though this is not to suggest that there is complete registration of births and deaths, it does not seem that there is a sufficient basis for concluding the direction of bias caused by the under-registration of vital events on the estimation of net-migration.

Underenumeration of Infants and Children

Another possibility of error in the estimation formula can arise from a higher rate of underenumeration of children born during the intercensal period than births under-registered during the same period. These children entered into the equation as additions to the population if their births were registered. To the extent that the registration of births is more complete than the enumeration of small children in the census, the estimate of net-migration is biased in a negative direction. There were about 3.8 million births during the 1957 to 1970 intercensal period. If only 90 percent of them survived to 1970, then we can expect about 3.4 million to be still alive and below age 14 in 1970. If there was about a three percent underenumeration of children whose births were registered, this would bias the net migration estimate by about 100,000 in the negative direction. Again this is only a hypothetical calculation, but it suggests that such errors in the data may have partially contributed to a high negative estimate of external migration.

III. NET MIGRATION BY SEX AND COMMUNITY

Let us now turn to a consideration of the actual figures of net-migration for the intercensal period from 1957 to 1970. The data are shown for Peninsular Malaysia and Singapore by sex and ethnic community in Table 1. The third column of Pan-Malaya is simply the sum of the figures of net-migration of both Peninsular Malaysia and Singapore. It is realistic to consider Pan-Malaya as a demographic unit although it includes the two politically separate countries of Singapore and Peninsular Malaysia. These two areas have been linked together first under British colonial rule and subsequently for a short time as part of independent Malaya (1963-1965). Moreover, the two countries share many kinship, ethnic, linguistic, educational, and economical ties. For the most part, there has been

unhindered mobility between the countries with a heavy to and fro traffic consisting of visitors, daily commuters, and temporary and permanent migrants across the causeway joining Singapore to the peninsula.

### TABLE 1

<table>
<thead>
<tr>
<th>NET EXTERNAL MIGRATION (IN THOUSANDS) FROM 1957 TO 1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>BY SEX AND COMMUNITY:</td>
</tr>
<tr>
<td>PENINSULAR MALAYSIA, SINGAPORE AND PAP-MALAYA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Peninsular Malaysia (1)</th>
<th>Singapore (2)</th>
<th>Pan-Malaya (3) = (1) + (2)</th>
<th>Net Arrivals and Departures of Pan-Malaya (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Malays</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Males</strong></td>
<td>64</td>
<td>3</td>
<td>61</td>
<td>-113</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td>48</td>
<td>1</td>
<td>49</td>
<td>-49</td>
</tr>
<tr>
<td><strong>Chinese</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Males</strong></td>
<td>240</td>
<td>4</td>
<td>244</td>
<td>-37</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td>145</td>
<td>29</td>
<td>174</td>
<td>-20</td>
</tr>
<tr>
<td><strong>Indians and Pakistanis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Males</strong></td>
<td>143</td>
<td>31</td>
<td>174</td>
<td>-72</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td>87</td>
<td>23</td>
<td>110</td>
<td>-41</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Males</strong></td>
<td>51</td>
<td>2</td>
<td>53</td>
<td>-84</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td>35</td>
<td>1</td>
<td>36</td>
<td>-60</td>
</tr>
<tr>
<td><strong>Total Population</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Males</strong></td>
<td>507</td>
<td>34</td>
<td>541</td>
<td>-137</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td>315</td>
<td>4</td>
<td>319</td>
<td>-50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>-191</td>
<td>30</td>
<td>162</td>
<td>-87</td>
</tr>
</tbody>
</table>

**Notes:**
1. Columns 1 and 2 are calculated by the vital statistics method of estimating net-migration: NM = (Pop'79 - Pop'57) - (Births'79 - Deaths'79).
2. Column 4 is based upon the net arrivals and departures to both Peninsular Malaysia and Singapore (excluding movements between Peninsular Malaysia and Singapore) for the 1957-1970 period.
3. Some columns may not sum up to totals because of rounding.

**The basic formula for estimating net-migration has simply been applied separately to both sexes of the four major ethnic groups in both Peninsular Malaysia and Singapore. Thus the net-migration figure of 507,000 for Peninsular Malaysia noted earlier is shown in Table 1 as the sum of the first column. Both censuses of both countries are adjusted to mid-year, to keep consistency with each other and with vital statistics data. The composition of the ethnic community, Indians, varied among the various data sources; for consistency's sake, I have adjusted all the census sources to create the category Indians and Pakistanis, which agrees with the vital statistics classification during the intercensal period. This means that the ethnic group, Ceylonese is classified under Others in Table 1.**

Of course, the problems of data quality which were discussed in the previous section may also be a significant factor in the estimates of migration by sex and ethnic community. The approach adopted here will be to interpret the overall pattern and relative magnitude of the various estimates, realizing that there may be considerable errors in the absolute figures. One potential check is the comparison of the estimates of net-migration of Pan-Malaya (Column 3) with the available data on net arrivals and departures for the same area and time period (Column 4). The arrivals and departures data are based upon the information gathered by administrative officials at the seaports, airports, and at international rail and roadways, excluding movement between Peninsular Malaysia and Singapore. While the arrivals and departures data are ideally an excellent check on the indirect net-migration estimates, it appears that both have flaws and reconciliation of figures is not obvious. More discussion of this-comparison will follow.

Table 1 shows that net-migration from Pan-Malaya was 473,000, which was the combination of net 507,000 out-migrants from Peninsular Malaysia and 34,000 in-migrants to Singapore. It doesn't necessarily follow that the 34,000 in-migrants to Singapore came from Peninsular Malaysia, but it appears likely that most did. The immigration laws of most countries have become more restrictive in recent years and the movement between Peninsular Malaysia and Singapore for residents of either area is probably one of the few international boundaries with fairly free mobility. However, most of the large-scale flow of outward migration from Peninsular Malaysia does not seem to be found in Singapore, but in other destinations in the rest of the world. Their likely destinations are largely a matter of speculation, but we can gain some perspective by examination of sex and ethnic composition of the outward flow. There were about 61,000 Malay net-out-migrants from Pan-Malaya during the intercensal period as compared to 185,000 Chinese, 174,000 Indians and Pakistanis, and 53,000 Others. In all cases, the number of male net-out-migrants exceeded that of females. It is perhaps easier to understand the net-out-migrants of the two groups, Others and Indians and Pakistanis, than it is of either Malays or Chinese.

The Others community in 1957 had as large components, Europeans and Other Asians, both of which have diminished over the intercensal period. The decline was partially attributable to the end of the colonial administration, but perhaps more importantly to the exodus of Commonwealth armed forces.
Foreign military units, including a substantial number from Nepal were mobilized for the Malayan Emergency during the 1950s and were only gradually withdrawn during the late 1950s and early 1960s. The magnitude of the out-migration of Others from Pan-Malays is almost entirely due to the decline in Peninsular Malaysia. The estimated out-migration of Others in Singapore was only 2,000 persons, too small a figure to really interpret. Nonetheless, the out-migration of 53,000 Others from Pan-Malaya during the intercensal period certainly seems to be a plausible estimate.

Similarly the estimate of 174,000 Indians and Pakistanis out-migrants from Pan-Malaya seems to be in accord with expectations. A large proportion of Indians who emigrated to Malaya in the earlier part of the twentieth century to work in the rubber industry retained kinship and other ties to India. The greater trickle of retired estate worker back to India was accentuated during the 1960s by the two forces: the decline of estate jobs and the tightening up of regulations permitting non-citizens to work in Malaya. The Second Malaysia Plan contained the statement that the estate labour force (white rubber) was reduced by one-fifth from 1962 to 1967. The rigid enforcement of the issuance of work-permits also hit hardest the Indian community which contained the highest proportion of foreign-born persons who found it difficult to apply for citizenship. Most of the Indian and Pakistani out-migrants from Pan-Malaya came from Peninsular Malaysia (143,000 out of 174,000). Perhaps the decline in the British military presence in Singapore eliminated many civilian jobs which affected many Indians and Pakistanis among others.

The net out-migration of 64,000 Malays from Peninsular Malaysia seems at first glance to be puzzling. Singapore was the probable destination of only a small fraction (3,000). It is possible that the margin of errors in the calculation happen large enough to cause part or all of this negative figure. However, there are two possible factors that may help to explain this. Although Sabah and Sarawak are part of the Federation of Malaya, movement to there would be considered out-migration from Peninsular Malaysia. There has been some movement of Malaysians from the peninsula across to Sabah and Sarawak since 1963, although their numbers are difficult to estimate. This flow includes a substantial number of military personnel who are predominately Malay. Another component of the net out-migration of Malays may be students studying overseas. The net figure means the balance of those studying abroad now compared to those overseas in 1957 who have since returned. There is a long history of young Malaysians going to England, Australia, New Zealand and other foreign countries for college and university study. A recent estimate given for 1974 was 20,000 overseas students from Malaysia. Since neither the exact magnitude of these possible outflows nor the size of errors in the underlying data are known, it is not possible to conclusively evaluate the reliability of the estimate of 61,000 Malay out-migrants from Pan-Malaya, but it seems a plausible figure although a bit high.


As can be observed, the figures of net arrivals and departures only bear a faint resemblance to those of net-migration in Column (3). The number of excess departures over arrivals was 137,000 for this period compared to the figure of 473,000 net out-migrants from the indirect estimate. A comparison of the variation by ethnic group is puzzling. There is a substantial excess of departures over arrivals for every ethnic group except Others which had a positive figure of 84,000 net arrivals. The number of Chinese and Indian net departures is considerably less than the number of net external migrants as shown in Column (3). In particular, the number of 37,000 net departures of Chinese seems to be a more reasonable estimate of external migration than the earlier estimate based upon the indirect method. More surprising is the figure of negative 113,000 Malay migrants from the arrivals-departures data. This is almost double the — 61,000 estimated in Column (3) of net out-migrants from Pan-Malaya. Perhaps part of the explanation may be the use of the term, Malaysians, to indicate Malays on the arrivals-departures forms for many years during this period. Prior to the formation of Malaysia in 1963, the term Malaysian was often used as a statistical category for the indigenous population - primarily Malays. However, this use of this term became ambiguous after 1963 because its official meaning was any citizen of Malaysia. But both uses of the term were continued for a few years and this source of confusion may have resulted in some Non-Malay Malaysians being counted as Malays (because the immigration forms used the term Malaysian) in the arrivals and departures data. The positive figure for Others seems obviously incorrect, yet we can offer no apparent explanation. Certainly the number of Europeans and Other Asians who were part of the Commonweath troops decreased substantially over the intercensal period. The other major group in the category of Others is the Thai Community, and the data collection at the Thai-Malaysian border may be very poor. There is a heavy flow of tourists and temporary visitors to Peninsular Malaysia and Singapore every year and small errors in the annual data may grow to be substantial absolute figures over the course of 13 years.

It is not possible to say with any degree of confidence that either the indirect estimates of net-migration (Column 3) or the net number of arrivals and departures (Column 4) provide a really accurate estimate of the outward movements from Pan-Malaya during the thirteen year period from 1957 to 1970. Both sets of estimates have their weaknesses, and it is really impossible to attribute differences between the two as definite errors in one or the other. Perhaps the only real clear conclusion that emerges from the comparison is that there has been considerable out-migration from Pan-Malaya during the intercensal period which was probably between 200 to 400 thousand and this outward flow was signicant among all the three major communities, Malays, Chinese and Indians-Pakistanis.

IV. NET MIGRATION BY AGE-GROUPS

Another variable which has been shown to be important in almost all studies of migration is age. The method of estimating net-intercensal migration can make use of any control variable which does not change during the interval of time between the two censuses, as indicated in our prior analysis by sex and community. Age is a variable which does change, but in a completely predictable manner: the change in age between two censuses dates is simply equal to the span of years of the intercensal interval. There are a variety of methods which can be used to indirectly estimate net-migration by age-groups, the two most common techniques are known as the life-table survival rate method and the census survival rate method. Both of these techniques survive the population alive at the first census to the date of the second census to get an expected population which is then compared with the enumerated population of the second census. The difference between the expected population and enumerated population is then considered as an estimate of net-migration which is calculated for each age-group. There are several more complications to the procedure, but this is the general idea.

In the problem at hand, the survival rate technique can be applied, although the 13 year intercensal interval requires both single year of age population data and an unabridged life table. Another technique can also be utilized, namely the vital statistics method where each age-cohort from the first census is survived over the intercensal period by subtracting the actual deaths as reported in the annual vital statistics data. The basic method is commonly known as post-censal population estimation and has only been rarely applied in estimates of net-migration by age-groups. Certain problems also arise in using this technique for the 1957 to 1970 period because of the 13 year intercensal gap.

In this investigation, we estimated two 1970 expected populations by sex, community and age-group, one using the life-table survival rate technique, and the other based upon the vital statistics method whereby reported deaths were subtracted from each original age-cohort. Although both approaches make use of the same basic data, their differing assumptions and procedures give slightly different results. The survival rate method was based upon three steps: first averaging the L_x value from the 1957 and 1970 abridged life-tables, then interpolating the L_x to single years of age and finally calculating rates to survive the age-groups from the 1957 Census for thirteen years to 1970. The resulting 1970 expected population contained unusual age-groupings which then had to be interpolated to single years in order to put the expected population in the standard age-groups. The vital statistics method took the 1957 Census population by age-groups forward to 1962, 1967 and 1972 by repeated subtraction of deaths attributable to each five-year age-cohort over each successive five-year period. To calculate the deaths attributable to each age-cohort for any time interval it was necessary to make the rectangular

assumption that deaths were evenly distributed over the interval and could be divided proportionately among the cohorts within a certain age-category during the time interval. Finally the 1970 expected population based on the vital statistics method was calculated as an interpolation between the 1967 and 1972 estimated populations.  

The two expected 1970 populations differed in several systematic ways. There were often counterbalancing differences at successive age-groups as a result of the different interpolations. Also the vital statistics method produced higher figures in the oldest age-group than did the life-table survival-rate method. This is due to the open-ended survival-rate (from age 55 and above in 1957 to age 68 and above in 1970) presumed a much older distribution of the population in this highest age-category than was actually the case in 1957. Aside from these major differences, the two approaches give fairly similar results. Our decision has been to use the expected 1970 population based upon the vital-statistics method because it seemed to give a more reliable estimate for the oldest age-category. We grouped the data into broad age-intervals of 15 years each, because of the variability introduced by the interpolation procedures. The youngest age-group 0-14 in 1970 is based almost entirely on birth and death registration data during the intercensal period. Based upon estimates of the population in ages 0-4, 5-9 and 10-14 in 1967 and 1972, a 1970 estimate was interpolated and used as the youngest age-category in the expected 1970 population.

Table 2 shows the estimates of net external migration from Peninsular Malaysia, Singapore, and Pan-Malaya by age-group as well as by sex and community. These figures for each total sex community group differ slightly from those in Table 1. This is because of the interpolation procedures (based on 1967 and 1972 population estimates) used to arrive at the expected 1970 population figures in Table 2, while the estimates in Table 1 used the total number of births and deaths from 1957 to 1970 only. For example, total net external migration from Peninsular Malaysia was −507,000 in Table 1, while it is −489,000 in Table 2. The comparable total net-migration figure for Singapore was positive 34,000 in Table 1, but 42,000 in Table 2. In spite of these differences, the overall pattern of figures in the two Tables is similar and it seems that small empirical differences should not be the focus of excessive attention or interpretation.

Total Population

The estimates of net-migration for the Total Population include Malays, Chinese, Indians-Pakistanis, and Others. Because Others have not been kept as a separate category, the sum of the figures of the three major ethnic groups in Table 2 does not equal that of the Total Population.

---

**Table 2. Notes and Sources [contd.]:**

The 1957 Census population is adjusted to mid-year, but no changes are made for under-enumeration. The base population is the same as Column (3) of Appendix Table A.1 of Research Paper No. 9: Estimates of the Inter-censal Population by Sex, Community and Age-Group. The base population is the result of a series of adjustments made to the census data to account for under-enumeration.

4. The 1970 Census population adjusted to mid-year is from Department of Statistics, Malaysia, 1974. Research Paper No. 9: Estimates of the Inter-censal Population by Sex, Community and Age-Group. The base population is the result of a series of adjustments made to the census data to account for under-enumeration.


The data in Table 2 suggest that there has been considerable out-migration from Peninsular Malaysia, but only a fraction of this movement has been absorbed into Singapore. The flow out of Peninsular Malaysia has been more than 3 to 2 male, but most of the net additions to the Singapore population have been female. The overwhelming number of net-migrants were in the age-group 15-29 in 1970. This does not necessarily indicate their age at the time of move, but with such a broad category, it is very likely that most migrants were in their late teens and twenties. This is generally regarded as the most mobile age because it is the stage of the life-cycle when a person completes schooling and leaves his parental home and begins a career and launches a new family. However, it is also the age-group which is most difficult to completely enumerate in a census because of the same reasons - a high level of mobility and the transition from one household to another. Thus it is impossible to completely rule out error as a partial determinant of the estimate of net-migration in this young adult age-group. The numbers of migrants at the older ages are also substantial, though much less than at the younger ages. The one figure that seems most likely to be due to error is the estimate of net migration in the youngest age-group, 0-14 in 1970. To be sure, there is probably some external migration of infants and small children as part of migrant families, but their numbers should be relatively small. From the original calculations it appeared that most of the deficit of the 0-14 age-group was located in the 0-4 age group, a category which is almost always subject to higher than average census under-enumeration. If the deficit in the youngest age-group can be attributed to census underenumeration of children whose births were registered, this would lower the total estimate of net external migration from Pan-Malaya by more than 100,000.

**Malays**

The age pattern of Malay net-migrants from Peninsular Malaysia shows a high concentration in the 15 to 29 age-groups for men and 15 to 29 and 30 to 44 for women. But the sex composition of Malay migration is overwhelmingly male. Most of these youths migrants from Peninsular Malaysia are not found in Singapore, but in destinations in other parts of the world. Earlier, it was suggested that these migrants may largely consist of temporary moves to Sabah and Sarawak and students in overseas educational institutions. Both of these hypotheses are consistent with these young age-groups, though female deficit particularly at age 30 to 44 is somewhat unexpected. Although the youngest age-group 0-4 showed a negative figure which suggests underenumeration, this is obscured in the broader age-group, 0-14 shown here. This may indicate that the 1970 Census enumeration for Malay children age 5 to 14, particularly for females was more complete than the birth registration figures.

**Chinese**

The age-group of 15 to 29 also contains most of the Chinese migrants, especially from Peninsular Malaysia. The sizeable deficits among Malaysian Chinese youth, age 0 to 14, of —27,000 males and —33,000 females do not seem to have been absorbed into Singapore in very large numbers. We suspect that these figures are more likely to represent weaknesses in the base data than evidence of international migration among children. Even at ages above 30, there are substantial numbers of Chinese who have either left the country or else seem to have been missed in the 1970 Census but enumerated in 1957. For many in this group, movement to Singapore appears to be the answer, especially among women. Of the apparent total of —86,000 net adult Chinese males migrants (excluding age 0-14) from Pan-Malaya, 63 thousand or 73 percent were in age-group 15 to 29 in 1970. Among women, 20,000 of the 32,000 external adult out-migrants were age 15 to 29 in 1970. These figures of net external migrants seem very high, and it is certainly possible that some fraction are due to errors in the data base.

**Indians and Pakistanis**

The age-pattern of migration among the Indian and Pakistani community is somewhat different - most notable is that the dominance of the young adult category is much less. There is a deficit of 46,000 males and females in the youngest group, 0-14, in Peninsular Malaysia while in Singapore there were 9,000 less counted in the census than would be expected on the basis of birth and death registration data. Some of these children may be part of families which returned to the Indian sub-continent, but it is likely that most of it is due to underenumeration. One sign that suggests that family migration is not the major component of external flows is the high sex-ratio of migrants, particularly above age 30. In Peninsular Malaysia, there are two or three male net out-migrants for every female out-migrant above 30. From Singapore, almost all the adult migrants are male. In contrast to Chinese, the...
age composition of adult Indian and Pakistani migrants from Pan-Malaya was much older; only 21,000 of the 82,000 male adult emigrants or 24 percent were age 15 to 29, while 52 percent were above age 45. The pattern of figures suggests many persons are returning to their birthplace after retirement or loss of their jobs because of legal or economic reasons.

V. DISCUSSION OF FINDINGS

There is little doubt that there has been substantial net out-migration from Pan-Malaya and a moderate flow from peninsular Malaysia to Singapore in the period from 1957 to 1970. The estimates of a half-million net out-migrants from peninsular Malaysia and more than 450,000 from Pan-Malaya are probably over-estimates. The Pan-malayan flow could have possibly been as low as 200,000 (approximately the sum of the Malay, Chinese and Indian-Pakistani net departures over arrivals in Column 4 of Table 1) but even this would be a substantial exodus.

All the major ethnic communities seem to have participated in the out-migration from Peninsular Malaysia and Pan-Malaya. The major contributions were by the most recent groups to have settled in the area, Indians-Pakistanis and Chinese, though there was apparently a loss of Malay as well, and the small Others community was reduced substantially. Indians and Pakistanis were net out-migrants from both Peninsular Malaysia and Singapore. The Chinese movement out of Peninsular Malaysia was partially directed to Singapore, but also to other destinations in the rest of the world.

We can only guess the gross migration patterns since the data only show net figures, however, it is possible that there was even a larger flow of Chinese to Singapore from Peninsular Malaysia. This would be true if a substantial number of the Chinese out-migrants from Pan-Malaya originated from Singapore. Malays seem to have contributed to the net outflow from Peninsular Malaysia, but in much smaller numbers and in only a very small fraction of their total population. Very little of the Malay movement was to Singapore. The net-migration of Others was only moderate in absolute numbers, but it represented a major proportion of this heterogeneous community. In fact, the out-migration in this group changed the character of the Others community in Peninsular Malaysia from predominately European and "Other Asian" (mostly consisting of Commonwealth Armed Forces from Nepal) in 1957 to the situation in 1970 where Thais comprised the largest single component (40%) of this community.

The composition of the net-migrants by age and sex is what might be expected on the basis of previous migration studies from other parts of the world with a few exceptions. The overall composition of net out-migrants from Peninsular Malaysia and Pan-Malaya was about two to one male and predominately youthful. However, the net in-migrants to Singapore were overwhelmingly female. This was a result of a female dominance in the net-flows of Malays and Chinese to Singapore, and a large male majority in the Indian-Pakistani out-migrants from Singapore. There were a substantial number of estimated migrants in the 0-14 age-category, but this probably represents an underenumeration in the 1970 Census relative to their expected numbers rather than "true" out-migration. Among adult out-migrants from Pan-Malaya, almost 40 percent were in the 15-29 age-group in 1970. This dominance of youthful migrants was most true for the Malay and Chinese communities, whereas among the Indian-Pakistani community, there were equally large numbers at all adult ages, especially among males.

Causes and Consequences

What are the causes and consequences of the findings on net external migration from Peninsular Malaysia? It is even more difficult to address this question than it is the problem of measurement, but it might be useful to offer some speculation on the issues.

It is almost a truism in migration studies that the redistribution of the population responds the differential distribution of economic opportunities. For most of the history of the Malaysian peninsula, it has been the receiving point of migration from other countries in Asia, in particular from China, India, and Indonesia. This was largely in response to the expanding economy of the country, particularly in comparison to the poorer regions of Asia. The growing demand for labour in tin mining and in agricultural plantations, especially rubber, as well as in commercial activities created a situation where immigration and not natural increase was the source of population growth.

Beginning in the Depression of the 1930s, but finally during the World War II and in the subsequent years, the situation was reversed. The demand for labour in the primary sectors of the economy grew less and could be met by the resident population. Additionally, strict immigration laws were enacted which effectively limited any further immigration. By this time, most of the Chinese and Indian population were locally born (the 1957 Census reported 3/4 of Chinese and 2/3 of the Indians in Peninsular Malaysia were born locally) and had deep roots in Malaysian community. They would be expected to remain there unless the opportunity structure changed. And indeed most have stayed in Malaysia, but a significant minority seem to have departed. Part of this can be attributed to the normal flow of retired workers who wish to spend their remaining years in the land of their birth - this seems to be an important pattern only among the Indian community, especially older men.

For others, especially in the age-group 15-29, the relative opportunities elsewhere and possibly the lack of them in Malaysia may have been an important factor in accounting for net out-migration.

The pushes and pulls of opportunities may be as varied as the number of persons who have experienced them. For many, the out-migration may be temporary, such as in the case of overseas study, or a work assignment in Sabah or Sarawak. For others, the lack of a job in Malaysia, the opportunities in Singapore, or the prospect of a better life in another country may be the reason for a departure. It is impossible to really understand all the determinants of out-migration, since we have considerable uncertainty regarding numbers and characteristics of external migrants.

What consequences does this flow of external migration have for Peninsular Malaysia? It is difficult to do more than explore some of the

possibilities that this question suggests. Most simply the out-migration has lowered the rate of population growth over the intercensal period. Had there been no out-migration (assuming no errors for the moment) the intercensal population increase would have been almost 3 million instead of 2½ million and the average annual rate of population growth would have been 2.95 instead of 2.54 percent over the period from 1957 to 1970. But perhaps more important than the absolute numbers of migrants is their composition. One aspect of the net-outflow has been to marginally increase the proportion of Malays in the population. This is a point that assumes great importance to ethnic chauvinists in all communities, but probably matters very little. While the relative balance among the ethnic communities is of social and political significance, the difference of a few percentage points is not.

It appears that most of the net-migrants were young. Most were male, but a sizeable minority were female. If the migration flows were permanent, this will represent a loss of persons for their economically productive life as well as their reproductive careers. It is possible to consider this as a positive factor considering the high unemployment and fertility rates in the country. But migration is usually selective of persons who have more "modern" characteristics, and it seems likely that many of the migrants were high in education and in other skills that would allow them to play a vital role in the process of socio-economic development. While it is certainly impossible to conclusively evaluate the impact of net out-migration on the society at large, it is certainly not entirely positive.

Department of Sociology
Duke University
Durham, North Carolina
USA