1980 Monograph

Commonwealth of the Northern Mariana Islands

April, 2003

Central Statistics Division
Juan S Borja, **Director**
CNMI Government

Population Division
Michael J. Levin, **Demographer**
U.S. Bureau of the Census

Chapter 1.

Introduction

The Commonwealth of the Northern Mariana Islands (CNMI) consists of three large islands - Saipan, Rota, and Tinian - and a series of smaller, volcanic islands to the north. The three large islands are raised coral islands, and, with the exception of Saipan, are flat with steep limestone cliffs. The climate is tropical and seasonal temperature variations are very small. Typhoons occasionally occur and are frequently severe.

SPANISH PERIOD

Although the islands have been inhabited for more than 3,500 years, they were not 'discovered' until Magellan came in 1521. The islands were officially claimed by Spain in 1565, but a Jesuit mission was not established until 1668 by the Mission Fathers (and this one was on Guam). In between Spanish, Dutch, and English explorers and traders had already visited the islands and brought epidemics that decimated a population variously estimated to have numbered 50,000 to 150,000 (Taeuber and Han 1950:95). The indigenous Chamorros wanted no part of the Spanish administration. In 1669, Lorenzo, a survivor of the Conception shipwreck in 1638 and who was acting as interpreter for the Jesuits on Anatahan Island was murdered (Ibanez 1886). General resentment of the Spanish led to rebellion and massacre in 1670, followed by 30 years of sporadic war between the native Chamorros and the Spanish soldiers.

Famine, cholera, and smallpox began to reenforce the repressive tactics of the Spanish guns to so weaken the natives that the Spanish could concentrate all surviving peoples under military control in Guam and Saipan. This movement was under the direction of Jose Quiroga, who became governor of the Marianas in 1694. The entire population was moved except for a small number of natives on Rota who apparently escaped detection and resettlement. Natives on Tinian, temporarily escaping to Agrigan, were finally defeated by Quiroga and removed to Saipan in 1695. A final resettlement took place when Chamorros residing on Saipan were removed to Guam in 1698, leaving only Guam and Rota occupied at the beginning of the 18th century (Underwood 1973:17).

Concentrating the people on Guam lead to more famine and epidemics, so that by 1710 when a count was made, only 4000 natives were still alive on Guam and Rota; of these, at least 3,500 were on Guam (Thompson 1945). Decline continued for the next 50 years; by 1764 there were fewer than 1800 Chamorros and mixed individuals. The native population of all the Marianas reached its lowest point in 1786, but the lowest point for Rota was 1753, according to Freycinet (1829). Also, around 1700:

> The three principal islands of Guam, Rota and Tinian together are said to have contained about fifty thousand people. But since that time Tinian has been entirely depopulated and only two or three hundred Indians left at Rota to cultivate for the island of Guam so that now no more than Guam can be properly said to be inhabited (Anson 1742).

A major epidemic killed a large number of people in 1779 (Safford 1901). By 1784 only 1,585 Chamorros resided in the Marianas, and a series of epidemics over the next century reduced the population even more. For more than a century the islands north of Rota were completely uninhabited; they were not completely deserted as hunters from Guam visited Tinian and sporatic attempts were made to resettle Saipan and Agrihan.

Finally, the population began to rebound. Taeuber and Han (1950:96) report that the Spanish encouraged movement particularly of Tagologs from Luzon, and that the Spanish soldiers mingled with the native women. Thus, in the 19th century numbers began to increase, haltingly at first, then more rapidly.

Caroline Islanders traditionally voyaged long distances in canoes, to trade goods and services, and out of the sense of adventure. In 1788, for example, a group of Caroline Islanders in outriggers arrived on Guam and started new trading partnerships, reviving an ancient trade with residents of the Marianas. According to Corte (1976:86-87), in 1815 canoes from the Truk Islands area came to Saipan, and the 200 Carolinians asked that "they be permitted to establish themselves on these islands, because they had suffered a great hurricane in their own islands which had left them without the means of subsistence."

By 1830, 55 Carolinians were noted as residing on Saipan (Olive 1887). In 1835 the total population of the island was 1885 (Spoehr 1954). The Carolinian settlement was augmented somewhat following the great earthquake and tidal wave which apparently hit many Caroline islands, as well as Guam, in 1849, leading survivors of the calamity to flee their ravaged atoll homes and seek refuge elsewhere in Micronesia. An additional 41 Lamotrekese came to Saipan at this time (Safford 1901), "so that the total population of Saipan had reached 267 by 1851" (Underwood 1973:23). (In 1849 a Filipino was sent to Saipan as a catechist, perhaps the first filipino immigrant to the CNMI). Hence, the actual resettlement of Saipan was not by Chamorros but by Carolinians (Spoehr, 1954:70). Gradually, Carolinians started small colonies on Guam, Saipan, and Tinian.

Although Chamorro immigrants began to move to Saipan a few years after the initial Carolinian settlement in 1815, the number of residents actually decreased until 1850 (Underwood 1973:29).

By 1855, there were 266 Carolinians on Saipan (Olive 1887), although Corte (1876:87) claims most were Chamorro "but some 80 came from the Carolines on two expeditions by a ship". Many more Carolinians came after a severe smallpox epidemic in 1856 (Thompson 1941:31). In fact, by 1863, the total population of Saipan had increased to 420, but most of the growth was from immigration since in 1865 the recorded population was 433 (424 Carolinians and 9 Chamorros) (Spoehr 1954:71) with all of them living in Garapan or 435 (Wheeler 1900).

Fritz (1904) reports that between "1865 and 1869, more than 1,000 workers from Lamotrek, Satawal, and Elato settled on Pagan, Saipan, and Guam (Tamunig), and workers from Unans, Biarrat (Pisarech), and Unon {Ulu} settled in Tinian" (1904:37). It is likely that there was an earlier contingent of some 600 Carolinians who were brought to Guam on labor contract about 1861, and, when an additional 95 Carolinians were brought in April, 1868, about 450 Carolinians resided around what is now Tamuning (Beers 1944, Ibanez 1886).

By 1870, some 686 persons lived in the single village of San Ysidro de Garapan, in one of three wards, of which two were occupied by Carolinians and one by Chamorros (Olive 1887), Corte (1876) disagrees with this count, writing in the 1870s that on Saipan there were "420 souls, the major part of them from the Carolines". Following the resettlement of some 200 Carolinians residents on Tinian to Saipan about 1886, an additional village, Tanapag, was established on Saipan. Thus, the total population of Saipan in 1886 was 1023, with 819 living in Garapan village and 204 in Tanapag (Olive 1887).

For Rota, there was a slow, but steady, increase in population during the first half of the 19th century, increasing from about 300 people in the 1790s to 438 residents as of December 31, 1832. Following the epidemic of 1849, and the climatic disturbances of that time, the population declined to 349 by 1855. The smallpox epidemic of 1856 exerted a further depressing effect so that, despite the influx of Carolinian immigrants, the total population of Rota was only 335 in 1865 (Wheeler 1900). Probably as a result of the influx of immigrants, the population increased rather rapidly to 442 in 1866, but decreased to 326 in 1872 (Ibanez 1886). Filipinos were sent to Rota in 1877, and a brief period of population growth was seen, probably culminating about 1896 when 504 persons were listed in Rota (1897 Census). Olive (1887) noted a disproportionate number of females, particularly among the Carolinians, in the Rota population in 1885, as well as the differential mortality of males in at least one recorded shipwreck off Rota in this period, but no specific data on age or sex composition of the Rota population is available prior to the 1897 census (see table 1.1) (Underwood 1973:29-30).

Table 1.1 Population of Rota: 1897

Table 1.1 Population of Rota: 1897

	Numbers			Percent		
Age Group	Total	Males	Females	Total	Males	Females
Total.....	495	217	278	100.0	100.0	100.0
0 to 4 yrs.....	78	38	40	15.8	17.5	14.4
5 to 9 yrs.....	65	32	33	13.1	14.7	11.9
10 to 14 yrs...	70	31	39	14.1	14.3	14.0
15 to 19 yrs...	46	21	25	9.3	9.7	9.0
20 to 24 yrs...	38	16	22	7.7	7.4	7.9
25 to 29 yrs...	47	24	23	9.5	11.1	8.3
30 to 34 yrs...	35	13	22	7.1	6.0	7.9
35 to 39 yrs...	28	14	14	5.7	6.5	5.0
40 to 44 yrs...	23	6	17	4.6	2.8	6.1
45 to 49 yrs...	12	4	8	2.4	1.8	2.9
50 to 54 yrs...	12	7	5	2.4	3.2	1.8
55 to 59 yrs...	16	4	12	3.2	1.8	4.3
60 to 64 yrs...	13	3	10	2.6	1.4	3.6
65 to 69 yrs...	7	2	5	1.4	0.9	1.8
70 to 74 yrs...	2	1	1	0.4	0.5	0.4
75 to 79 yrs...	3	1	2	0.6	0.5	0.7

Source: Underwood, 1973:31.

Figure 1.1 Age and Sex Distribution for Rota: 1897
Figure inserted here.

Tinian was also resettled during this period, beginning about 1816, and several colonies of Carolinians were established on the island for varying periods. During the latter half of 1800s, a single village, San Luis de Medina, was maintained, and, by 1886, the total population of Tinian consisted of 235 Carolinians, some 18 inmates of the leper colony, and the Chamorro administrator and his family (Olive 1887).

There seems to have been little further Carolinian migration at this time, so for all of the Marianas, during the 1880s, the Carolinian population remained at about 1000. Thompson (1941:31-32) notes that "by 1899 there were 50 Carolinians on Guam, localized in the village of Tumuning (Dunca's Beach) on the northwest coast... under pressure by the American administration which objected particularly to their semi-nudity, the Guam group was moved to Saipan".

The first Carolinian migrants were from Satawal and, over the years until 1870, other Carolinian migrants followed from Lamotrek, Satawal, and other Caroline Islands. The descendants of these Satawalese remaining on Satawal retained land rights on Saipan even though they may never have visited the island; by contrast Alkire (1978:141-2) writes that most Carolinians on Saipan have lost interest in their sending islands.

The Carolinians and Chamorros did not mix well. The Carolinians, for example, "never intermarried with the Chamorros, ;but retained their own language and customs, living like savages in small huts with only a few leaves spread upon the ground to serve as a floor and bed, subsisting on fish, wild yams and fruits, and resisting all attempts to Christianize them" (1905:119). Part of the reason there was traditionally little cultural interchange was that Chamorros considered "themselves far superior to their Micronesian neighbors (Thompson 1941:32).

It was not until towards the end on the 19th century that the number of Chamorros began to increase significantly but Chamorros probably did not outnumber the Carolinians until the start of the 20th Century. Rota's population history is more like that of Guam, as population increased steadily, while Tinian was resettled shortly after Saipan (Underwood 1973:29-30), and only around the end of the 19th century were the Northern Islands settled.

GERMAN PERIOD (1899 - 1914)

After Spain's defeat in the Spanish-American war, Guam became a U.S. territory and Spain sold the Northern Mariana Islands to Germany in 1899. From then on the Northern Mariana Islands remained politically and administratively separate from Guam. When Germany took over the Northern Marianas in 1899, Saipan had a population of about 1,938, concentrated in the two west coast villages of Garapan and Tanapag (Russell 1982), and the economy was essentially based on subsistence agriculture, and fishing. The total population of the German Marianas was estimated in 1900 or 1901 to be 2,102 (772 Caroline Islanders and 1330 Chamorros) (German Government 1902:2981). The historic division between the Carolinians and Chamorros remains socially important but is not recognized in statistical analyses.

By 1902, there were 2,401 persons living in the Northern Marianas (Table 1.2). About 2/3rds of the natives were Chamorro, and 1/3 were Carolinian. Although most of the Carolinians were living on Saipan, the Northern Islands had the highest percentage of Carolinians, with 2/3rds of those islands being Carolinian. Tinian was more than 62 percent Carolinian, but Rota was almost 90 percent Chamorro.

Table 1.2. Population by Island: 1902
Table inserted here.

The migration of Carolinians to the Norther Marianas continued during the German period. Fritz, for example, notes that, "all those (Carolinians) who lived in Guam, more than 100 in all, came to Saipan. They preserved the traditions of their group in clothing, songs, and dances as well as in their language" (1904:37-38).

JAPANESE PERIOD (1914 - 1944)

To both the Spaniards and the Germans the islands of Micronesia were tangential to other, more important areas. When the Japanese took over after the defeat of the Germans in the Pacific in 1914, however, there were great changes. The South Sea Islands were a critical segment of the strategic areas which Japan envisioned as necessary springboards toward continental hegemony and an ultimate imperial status comparable to the great powers of Europe. The Japanese were able to use the great production possibilities of these islands, employing labor intensive economic structures. The goals were economic and strategic, not social and demographic.

The major demographic transformation of Nanyo-gunto (Japanese Micronesia) was a by-product of the use of the limited lands of the Marianas by Japanese laborers engaged in the production and processing of sugar cane. Not only did large numbers of Japanese move to various areas of Micronesia to work and to oversee the operations of the South Seas Development Company, but large numbers of Micronesians were moved, some willingly, some not, transforming the age, sex, and ethnic distribution in the islands.

After 1935, when it was clear that Japan intended to become a great power comparable to the European powers, the military build-up brought still more Japanese to the islands. During the height of Japanese activity, Saipan had as many as 25,000 Japanese nationals and troops, Rota somewhat less than 10,00 Japanese troops, and Tinian 17,000-plus Japanese, Okinawans, and Koreans. On Rota, native population growth followed an erratic pattern, with the native population size not even doubling between 1897 and 1950 (Underwood 1973:38). Smith (1972) has shown that emigration is a major factor in the low rate of population growth for this period. After World War II, Tinian experienced a four-fold increase in population size because of re-colonialization, partly by a colony of Chamorros resident on Yap Islands.

Underwood, in investigation population trends in the Marianas found:

> Perhaps the more interesting pattern of population growth has taken place on Saipan where population size has tripled since 1901. However, marked differences characterize the Chamorro and Carolinian segments of the resident population. While the Chamorro population increased four-fold during the period of 1901 to 1950, the Carolinian population had not quite doubled in the same period. since it seems unlikely that any ethnic bias was at work in the estimated 300 native deaths incurred in the hostilities which ravaged Saipan

at the end of World War II, no ready explanation of this sort seems able to account for this marked difference. Suggestive evidence of a demographic contrast between the two groups on Saipan is indicated by Military Government data for the early post-war years. Pending the availability of more detailed census data, these materials seem to confirm the comments of the Spanish observers of the late 19th century concerning the low fertility of the Carolinians in the Mariana Islands and to hint at a change in the direction of Chamorro patterns among the Carolinians in recent years (Underwood 1973:39).

In a review article published in 1950, Taeuber and Han described the growth of the Chamorro and the Carolinian communities during Japanese times:

> Over-all stability or slow increase masked sharply divergent trends among the various island peoples. The Chamorros, modern descendants of the Mariana Islanders whose surviving fragments had been revived biologically and adjusted psychologically within the Catholic culture of the Spaniards on Guam during their centuries-long sojourn there, increased at a generally accelerating rate. Their numbers increased almost one-third in the fifteen years between 1920 and 1935. The Chinooks, who included the native peoples of the Caroline and Marshall Islands plus a few Polynesians, increased less than three percent in this fifteen-year period. The more rapid growth of the Chamorros than of the Chinooks is reflected in the younger ages in 1935.

Our own analysis of the Japanese figures, however, come up with different results. Although we do not have information by ethnicity for 1920, Table 1.3 shows the Taeuber and Han figures compared to those we have found in the Japanese census materials. We have assumed that all "Chinooks" were Carolinian; still, this does not explain the discrepancy between the two sets of figures. Since our Japanese is not fluent, we may have misinterpreted some of the figures, but our findings of internal consistency have encouraged us to show these data.

Table 1.3. Change in the Native Population: 1920 to 1935
Table inserted here.

There seems to have been little further Carolinian migration at this time, so for all of the Marianas, during the 1880s, the Carolinian population remained at about 1000. Thompson (1941:31-32) notes that "by 1899 there were 50 Carolinians on Guam, localized in the village of Tumuning (Dunca's Beach) on the northwest coast...under pressure by the American administration which objected particularly to their semi-nudity, the Guam group was moved to Saipan".

Although Taeuber and Han show a decrease in the number of Carolinians in the 1920s in the Northern Marianas, it seems that the Carolinians may have actually increased, at least in the latter part of the period. But the big differences appear in the proportions of Chamorros and Carolinians in the population. Taeuber and Han show percentages of Chamorro 6 more than 80 percent; our own analysis shows percentage Chamorro to by about 75 percent during the period.

Table 1.4 shows the distribution of Chamorros and Carolinians by locality in 1925, 1930 and 1935. The geographic distribution of Chamorros and Carolinians described by earlier writers continued during the Japanese period.

Table 1.4 Population by Ethnicity: 1925 to 1935
Table inserted here.

By 1930, the Carolinian population was aging compared to the Chamorro population. Fully 1 in 4 Carolinians was between 25 and 39, compared to only 18 percent of the Chamorros. The median age of Chamorros in 1930 was 18.2, less than the 20 years for Carolinians, and 18.8 years for all persons.

Table 1.5 Population by Age, Sex, and Ethnicity: 1930
Table inserted here.

In 1930, almost 3 of every 4 Natives living in the Northern Mariana Islands had been born in the locality where he or she was living (Table 1.6). Another 11 percent were born in a different locality, but in the Northern Mariana Islands, and 3 percent were born in another district of what was to become the Trust Territory of the Pacific Islands. Finally, 12 percent were born on Guam.

While more than 80 percent of persons living in Rota had been born there, only 4 of the 43 Natives living on Tinian in 1930 were born there. Only about a third of the people living on Pagan and Anatahan were born there, but only 1 of the 16 people living on Alamagan and 2 of the 22 living on Sariguan were born on that island. Apparently all of the Northern Islands were resettled some time before 1930.

More than 3 out of every 4 persons living in Saipan in 1930 were born on Saipan. This same proportion had been born and were living in Garapan, and 2 of every 3 living in Tanapag had been born there; about 1 in 6 of those living in Tanapag, however, had been born in some other locality in the Northern Mariana Islands.

Figure 1.2 Age and Sex Distribution: 1930
Figure inserted here.

Figure 1.3 Age and Sex Distribution for Chamorro: 1930
Figure inserted here.

Figure 1.4 Age and Sex Distribution for Carolinian: 1930
Figure inserted here.

As noted in the discussion of the earlier administrations, many people were moved to Guam at various times and for various reasons. Although 12 percent of the total population of natives in 1930 had been born on Guam, 16 percent of those in North Garapan and 20 percent of those on Pagan had been scattered settlements outside the main settled areas of Saipan.

Table 1.6 Birthplace of de Facto Population: 1930
Table inserted here.

The distribution by birthplace for Chamorros in 1930 was similar to that of the population as a whole, except in the case of a few of the Northern Islands (Table 1.7). Only 9 percent of the Chamorros were born in other localities in the CNMI, more than 15 percent were born on Guam, and less than 1 percent were born in other districts. There were no Chamorros on Sariguan or Anatahan in 1930, and only 5 of the 16 on Alamagan were Chamorro (the rest were Carolinians migrants.)

None of the 5 Chamorros living on Alamagan were born there. And, although 31 percent of those on Pagan were born there, 42 percent were born on other islands in the Northern Mariana Islands, and 26 percent were born on Guam.

Table 1.7 Birthplace of Chamorros: 1930
Table inserted here.

The 1930 census data show the migration of the Carolinians (Table 1.8). Although 72 percent of the Carolinians were born in the locality where they were living in 1930, 16 percent were born in other localities in the Northern Marianas (compared to 11 percent for the total population), only 3 percent were born on Guam (compared to 12 percent for the total population), only 3 percent were born on Guam (compared to 12 percent of the whole population), and fully 9 percent were born in other districts (compared to 3 percent for the total population).

Only Carolinians living on Saipan had been born on Guam. The largest percentage being born and also living in the same locality was South Garapan in which 82 percent of the resident Carolinians were born there.

Table 1.8 Birthplace of Carolinians: 1930

Table inserted here.

Table 1.9 summarizes the above data for the two major ethnic groups by locality. In some areas, like Puntan Muchut, Chalan Kanoa, and Alamagan, the population was completely Chamorro; in North Garapan, Rota and Tinian almost all of the people were Chamorro. On the other hand, Tanapag and South Garapan on Saipan were more than half Carolinian, as were the Northern Islands of Ahatahan, and Agrigan.

Table 1.9 Population by Ethnicity: 1935
Table inserted here.

In 1935, the Japanese did not use the same age groups for males and females, so it was necessary to use very broad age groups to compile the data for both sexes combined, and the data by sex are also somewhat obscured (Table 1.10). The median age for the population in 1935 was 19.1. The population was very youthful, with more than half being under 20. Only Tinian of the Islands had a slightly older population.

Table 1.10 Age by Island: 1935
Table inserted here.

Figure 1.5 Age and Sex Distribution: 1935
Figure inserted here.

The strange distribution of age groups in the 1935 census is seen in Tables 1.11 and 1.12. For males, the age groups 25 to 29 and 40 to 59 are used, compared to 25 to 44 and 45 to 59 for females. Perhaps this latter grouping for females was made to account for a longer period of fertility, but this seems unlikely since no fertility data were shown in any of these censuses. The data by sex had very similar distributions to those for the whole population.

Table 1.11 Age by Island for Males: 1935
Table inserted here.

Table 1.12 Age by Island for Females: 1935
Table inserted here.

The japanese had a vital registration system for both the Natives and the Japanese themselves. The death rates for Natives were the first collected regularly by any of the administrations, and were very high (Table 1.13). It is not clear whether there was generally ill health because of the kind of work the natives were forced to do for the Japanese, the apparent movements of Natives by Japanese to do this work, diseases introduced by the Japanese and which continued into the American Administration.

Table 1.13 Birth and Death Rates: 1924 to 1935
Table inserted here.

AMERICAN ADMINISTRATION

The American Administration in the Northern Marianas started soon after World War II ended with the defeat of the Japanese. The population of natives in the Northern Marianas remained at the low levels experienced during the Japanese period for a short time after the war, and then shot up suddenly, at least based on Navy censuses (Table 1.14). About 3 out of every 4 natives were Chamorro during this period.

It is not clear when all of the Japanese left the area. In a paper called "Preliminary Report on the Population: Marianas District", prepared by the Office of the Marianas District Planner, June 24, 1974, and distributed in mimeograph, the author notes that "In 1945 the U.S. Navy counted 2,966 Chamorro and 1,025 Carolinian along with 13,954 Japanese and 1,411 Koreans. The 1949 total population was recorded at 6,255...". If the U.S. Navy count referred to here was taken late in the year, it conforms with the data presented by Underwood,

showing the rapid influx of Chamorros and Carolinians from other areas.

Table 1.14 Change in the Native Population, Saipan: 1944 to 1947
Table inserted here.

The large jump from 1945 to 1947 cannot be explained only by natural increase, so if the 1947 data are right, a large number of Chamorros and Carolinians either returned or immigrated to the Northern Marianas soon after the War. Underwood had written that:

> population distribution in the Mariana Islands outside of Guam underwent radical changes during the period 1899 to 1950 as natives were displaced to limited areas by the burgeoning demands of the Japanese military and agricultural programs. Saipan became a major sugar growing and refining center, as well as a key airport in the Japan-Saipan-Palau route, providing additional economic opportunities to the native residents (1973).

At the end of World War II 6 villages on Saipan emerged: Chalan Kanoa, with 3,845 residents in 1950, while the smaller villages of Susupe (Yaptown), Oleai (Chalan Laulau), San antonio, Aslito, and (New) Tanapag supported populations of less than 300 each at the same date (Taylor, 1951). Both Rota and Tinian consisted of single villages. Only a few of the Northern Islands - Agrigan, Alamagan, Anatahan, Pagan, and Sariguan - were settled, and while they briefly supported intensive Japanese development programs and remained populated during most of the Japanese, the populations have always remained small.

Under the Trusteeship established by the United Nations, and administered by the United States, annual reports to the United Nations Trusteeship Council were required so that progress could be monitored. In connection with these reports, annual censuses were taken by the Trust Territory of the Pacific Islands Administration (under the High Commissioner's Office).

These censuses were not censuses in the traditional sense, but tended to be counts of the population made by the Health Aides or other government officials who were not trained in census enumeration procedures. The censuses seem to have been combinations of de facto and de jure censuses, combining the population who were on the island on whatever day the enumerator decided to count the population (de facto) with whomever enumerator felt belonged there (modified de jure). Thus, in the aggregate, particularly for the Northern Mariana Islands which has few islands, and relatively stable population patterns, the data show real trends, (but for some of the other areas of the TTPI, a lot of noise appears in the figures). The population change by island for the Northern Marianas is shown in Table 1.15.

The population of the CNMI more than doubled between 1949 and 1973, and each of the islands (municipalities) except the Northern Islands increased in population as well. Even the Northern Islands showed population stability until the mid-1960s, and probably only started decreasing then because of increased educational and economic opportunities on Saipan and the other areas arising out of the expansion of government services provided by the American Administration.

Table 1.15 Population by Island: 1949 to 1973
Table inserted here.

Table 1.16 shows the population change for the Northern Islands. Anatahan and Sariguan Island were only inhabited during the middle part of the period; Alamagan, Pagan, and Agrihan were inhabited continuously throughout the period, but with wildly fluctuating populations. These three remained inhabited until a volcanic eruption on Pagan in the early 1980s, causing the people residing there to leave.

Table 1.16 Population of the Northern Islands: 1949 to 1973
Table inserted here.

One of the accomplishments of the American Administration in the Trust Territory of the Pacific Islands

was its contribution to the improved health of the population. The population became healthier and lived longer. The mortality rates dropped precipitously from the Japanese period to between 6 and 7 deaths per 1000 per year for 1955 to 1979 (Table 1.18). The birth rate also decreased during the period on the basis of registered births, from 52 per 1000 during the 1955 to 1959 period to 39 per 1000 during the period 1975 and 1979. Some of this decrease must be attributed to improved health care, since morbidity and mortality decreased, therefore increasing the likelihood that a pregnancy would come to full term, and that the child would survive when born. Infant deaths did increase during the late 1960s and early 1970s, but had decreased considerably by the end of the decade.

Table 1.17 Vital Rates: 1955 to 1979
Table inserted here.

In Chapter 5 we will be discussing fertility based on the 1973 and 1980 censuses. However, it is appropriate to discuss fertility based on the administrative records of the American Administration here. If we use the 1967, 1973 and 1980 censuses to provide the women exposed to pregnancy in the years between 1967 and 1979, and the registered births by age of mother for the Northern Mariana Islands, we find that the total fertility rates decreased from 7267 during the 1967 to 1970 period, to 5165 between 1971 and 1975, to 4507 between 1975 and 1979 (Table 1.18). In other words, the average women living in the CNMI between 1967 and 1970 had an average of 7.3 children during her reproductive period, but this decreased to 5.2 during the middle period, and 4.5 during the final period. We will see later that some of the decrease can be attributed to delay in first marriage, but much of it must be attributed to fertility control, probably brought on by increased access to the workplace for females.

Table 1.18 Age Specific and Total Fertility Rates: 1967
to 1979
Table inserted here.

CENSUSES UNDER THE AMERICAN ADMINISTRATION]

During the American Administration there have been 5 full-fledged censuses, including a census in 1958 undertaken by the High Commissioner's Office, a health census taken by the United States Peace Corps in 1967, the 1970 Decennial Census, an official census taken by the High Commissioner's Office in 1973, and the 1980 Decennial Census.

1958 Census. This census was conducted by the High Commissioner's Office and was used as the official 1960 census by the U.S. Bureau of the Census and other Federal Agencies. The enumeration and tabulation procedures are not known, nor is the whereabouts of the data.

The census tabulations were mostly by ethnicity which has obscured their use for this monograph; in most cases data on Chamorros are presented separately, but not by place, and no comparable census data for Carolinians were presented at all. The data seem to be internally consistent and reliable.

In 1958 Rota and Saipan were still separate districts, so when data were tabulated by district, these were tabulated separately. Tables 1.19 through 1.21 show the age sex distributions for the Northern Mariana Islands, and for Rota, and the rest of the CNMI separately. The data were grouped by 10 year age groups, rather than 5 year groups, thus making comparisons with other data sets somewhat difficult. The median age for males was 11.9 and for females was 12.6.

Table 1.19 Population by Age and Sex: 1958
Table inserted here.

The population was very young, with more than half under 15 years old. The baby boom which affected much of the rest of the world, also affected Micronesia. Because of relatively excellent health facilities, mortality was reduced precipitously, and morbidity also was very, very low. The population of Rota was even younger than that of the rest of the Commonwealth.

Table 1.20 Population by Age and Sex, Rota: 1958
Table inserted here.

Figure 1.6 Age and Sex Distribution: 1958
Figure inserted here.

Table 1.21 Population by Age and Sex, Saipan, Tinian and Northern Islands: 1958
Table inserted here.

1967 Census. The 1967 census data were collected by the Peace Corps and tabulated by the Department of Public Health at the University of Hawaii. Not all islands were enumerated, but all of the Northern Marianas islands were covered, and the data are consistent with other sources. Basic demographic data were collected and tabulated, although number of pregnancies was substituted for number of children ever born. Most of the census was devoted to housing conditions. Individual data are available on computer tape at the University of Hawaii and at the East-West Population Institute.

The general quality of the tabulated data is very good, and will be used for comparative purposes, where appropriate, in this monograph. However, due to space requirements, we will not use all the data.

1970 Decennial Census. The 1970 Decennial Census was taken in conjunction with the 1970 United States Census. The procedures used in the States were modified, but there were apparently both enumeration and tabulation problems because there were both "misplaced" persons (persons moved from one island to another in the process of tabulation) and a large undercount in some areas, including the Northern Mariana Islands. The data were processed in the United States and remain on computer tape at the U.S. Bureau of the Census.

1973 Census. When it became apparent that the 1970 census data could not be used for reapportionment of the Congress of Micronesia, appropriations were requested to take another census. In 1973, a census was organized under the High Commissioner's Office in conjunction with the South Pacific Commission. This census took place on September 25, 1973. The data were coded in Saipan, and punched and processed at the East-West Population Institute in Honolulu. The data are highly reliable, and are stored on tape at the East-West Center. The original census forms have now been microfiched and are available in Saipan and at the National Archives. These data will be used for comparative purposes with the 1980 data whenever possible.

1980 Decennial Census. The 1980 Decennial Census was conducted in conjunction with the 1980 U.S. Census. The questionnaire was developed at the Census Bureau but reviewed by participants from the Pacific Islands areas in May, 1979, at a Pacific-areas conference in Honolulu. Preliminary tabulations were also reviewed by a representative of the CNMI in Honolulu in December, 1979, at another location.

The questionnaire was similar to that used in the States, but was modified to account for different conditions in the CNMI. Unlike in the States, all persons responded to all questions. Also, the census was collected through direct interview. Enumerators visited and listed every housing unit, asking the questions as worded in the questionnaire (or translating into the native language, if necessary), and recording the answers. A single questionnaire was used, which contained all the questions asked of every persons and household.

Special questionnaires were used for the enumeration of persons in group quarters such as the hospital, the prison, and nursing students' housing at the Community College of Micronesia. These forms contained the same population questions that appeared on the regular questionnaire but did not include any housing questions.

Responses were determined by the questionnaire and the instructions given to the enumerator; these instructions had been adapted from instructions used Stateside, but were modified to account for differences in the Northern Mariana Islands from those found in the States. The definitions and explanations for each subject are included in the discussions of these subjected in the other chapters of this monograph, and are drawn largely from

various technical materials and procedures used in the data collections.

Facsimilies of the questionnaire pages containing the population and housing questions used to produce this report are presented in Appendix II.

As in 1973, and in accordance with U.S. census practice, each person enumerated in the 1980 census was counted as an inhabitant of his or her "usual place of residence," which was generally construed to mean the place where the person lived or slept most of the time. This place was not necessarily the same as the person's legal residence or voting residence. In the vast majority of cases, however, the used of these different bases of classification would produce substantially the same statistics, although there might be appreciable differences for some small areas.

The implementation of this practice resulted in the establishment of residence rules for certain categories of persons (such as crews on ships, persons away at school, etc.) whose usual place of residence was not immediately apparent. Furthermore, this practice means that persons were not always counted as residents of the place where they happened to be staying on Census Day. Persons without a usual place of residence, or persons with no one at their usual place of residence to report to report them to a census taker, however, were counted where they happened to be staying.

The 1980 census questionnaires were processed in a manner similar to that used in the States. They were designed to be processed electronically by the Film Optical Sensing Device for Input into Computer (FOSDIC). For most items on the questionnaire, the information obtained by the enumerator was recorded by marking the answers in the predesignated positions that would be "read" by FOSDIC from a microfilm copy of the questionnaire and transferred onto computer tape with no intervening manual processing. The computer tape excluded information on individual names (and addresses).

The tape containing the information from the questionnaires was processed on the Census Bureau's computers through a number of editing and tabulating steps. Among the products of this operation were computer types from which the tables in the published reports were prepared on photo-typesetting equipment at the Government Printing Office.

Errors in the 1980 Census data. Since 1980 population and housing data were tabulated from the entries for persons on all questionnaires, these counts were not subject to sampling error. In an large-scale statistical operation such as a decennial census, human and mechanical errors occur. These errors are commonly referred to as nonsampling errors. Such errors include failure to enumerate every household or person in the population, not obtaining all required information from respondents, obtaining incorrect or inconsistent information, and recording information incorrectly. Errors can also occur during the filed review of the enumerator's work, the clerical handling of the census questionnaires, or the electronic processing of the questionnaires.

In an attempt to reduce various types of nonsampling errors in the 1980 census, a number of techniques were introduced on the basis of experience in previous censuses and in tests conducted prior to the census. These quality control and review measures were used throughout the data collection and processing phases of the census to minimize undercoverage of the population and housing units and to keep errors to a minimum. Enumerators were trained with special materials developed by Census Bureau personnel familiar with the Pacific Islands and in conjunction with representatives from the Pacific Islands areas, and the enumerator's work frequently checked by supervisors during the data collection to maintain accuracy throughout the census period.

Editing the census data. In the field, questionnaires were reviewed for omissions and certain inconsistencies by census clerks in Saipan, and, if necessary, a fillip visit was made to obtain missing information. In addition, a similar review of questionnaires was done in the central processing office in Laguna Niggle, California, but forms could not be returned to the field at that point. As a rule, editing was performed by hand only when it could not be done effectively by machine.

As one of the first steps in editing, the configurations of marks in the questionnaire columns were scanned

electronically to determine whether they contained information for a person or merely spurious marks. After this kind of edit, if an characteristics for a person were still missing when the questionnaires reached the central processing office, they were supplied by allocation. Allocation, or assignment of acceptable codes in place of unacceptable entries, was needed most often when there was no entry for a given item or when the information reported for a person on that item was inconsistent with other information for the person. This procedure was not used for other censuses taken during the American period, except for the 1970 decennial census. In 1970 and in 1980, the general procedure for changing unacceptable entries was to assign an entry for a person that was consistent with entries for other persons with similar characteristics. For example, a person who was reported as a 20-year-old son of the householder, but for whom marital status was not reported, was assigned toe same marital status as that of the last son processed in the same age group. The assignment of acceptable codes in place of blanks or unacceptable entries is supposed to enhance the usefulness of the data.

The 1980 census data on the economic questions such as industry, occupation, class of worker, work experience, and income were processed using an allocation system which assigned values to missing entries in these questions, as necessary, from a single respondent with similar socioeconomic characteristics.

Three population and two housing reports were published after the 1980 census. Those were:

PC80-1-A57A	Number of Inhabitants
PC80-1-B57A	General Population Characteristics
PC80-1-C/D57A	Detailed Social and Economic Characteristics
HC80-1-A57A	General Housing Characteristics
HC80-1-B57A	Detailed Housing Characteristics

In addition to the printed reports, results of the 1980 census also were provided on computer tape in the form of summary tape files (STF's). These data products were designed to provide statistics with greater subject and geographic detail than was feasible or desirable to provide in printed reports. The STF data were made available at nominal cost. Because of likelihood of incompatible computer systems, the STF data were also provided on microfiche. Recently, the data have also been provided on floppy discs which can be read on IBM-PC or compatible equipment.

STF 1 provides population and housing data summarized for the CNMI as a whole, for municipalities (islands), for census designated places, and for enumeration districts. The data include those shown in PC80-1-A57A, PB80-1-B57A and HC80-1-A57A. STF 3 contains data on various population and housing subjects such as education, employment, and income. The areas covered are the same as STF 1.

RECENT POPULATION TRENDS BY ISLAND

In this section we will be looking at recent changes in the population distribution on Saipan, Rota, Tinian and the Northern Islands from the censuses in the Japanese and American Administration.

The population had increased in each census under both the Japanese and American Administrations (Table 1.22_). Saipan has continued to be the most populated of the islands throughout the period. Also its percentage of the total population has been increasing during this period, from 72 percent of the Native population in 1920 to 87 percent of the total population in 1980. Although many people moved on and off island, particularly during the Japanese Northern Marianas. On the other hand, Rota has decreased in its percentage the total population from 19 percent in 1920 to only 8 percent in 1980, although its population doubled during the period. Although the percentage of the population living in the Northern Islands increased during Japanese times, from 5 to 7 percent, both the population and its percentage of the total has been decreasing rapidly during the 45 years before the 1980 census, and was less than 1 percent of the total in 1980.

Figure 1.7 Population of the Northern Mariana Islands: 1930 to 1980
Figure inserted here.
Table 1.22 Population by Island: 1920 to 1980

Table inserted here.

The total areas of the Northern Mariana Island is 84 square miles. Saipan, the largest island in the chain, is 45 square miles, with Tinian being 39 square miles and Rota being 32 square miles. The Northern Islands in total comprise 68 square miles.

In 1980, there were 91 persons per square mile in the CNMI (Table 1.23). Since the population has increased throughout the century, it has also become more densely settled. In 1920, there were only 18 persons per square mile. (It is important to remember that as many as 40,000 Japanese are excluded in the tabulations, so the actual densities for all persons in 1920 through 1935 would be much higher). The population of the CNMI doubled between 1958 and 1980, so the density also doubled.

Saipan had both the largest population, and was the most densely populated. There were more than 50 persons per square miles on Saipan even as early as the 1920s, but by 1958 the density had almost tripled to 150 per square mile, and then more than doubled to over 300 per square mile in 1980.

The densities of both Rota and Tinian were less than for Saipan, partly because their populations were much smaller, particularly when land areas are considered. The population of Rota had grown more slowly than that of Tinian, so the increase in the density is less, growing from about 20 per square mile in 1920 to nearly 40 per square mile in 1980. The density for Tinian increased, but was still the smallest of the three major islands. Because of their relatively large, although not always inhabitable, areas, the density on the Northern Islands is much less, and since the population is decreasing, the density also has been decreasing. The peak of habitation in this century, about 1935, saw 291 people in the Northern Islands, about 4 per square mile.

Table 1.23 Population Density by Island: 1920 to 1980
Table inserted here.

The population of the CNMI increased by 17 percent between 1973 and 1980, the smallest increase between censuses during the American Administration (and an annual increase of 2 percent) (Table 1.24). Part of the smaller increase was due to reduced fertility, and part was probably due to the beginning of the phasing out of the TTPI government, with employees and their families returning to other parts of the TTPI. Also, the 1980 census was taken before the big influx of migrants, particularly from the Philippines and other parts of Asia as the economy began to expand.

Between 1967 and 1973, the previous intercensal period, the population increased about 30 percent (about 5 percent annually), only slightly less than between 1958 and 1967 (more than 3 percent annually).

Table 1.24 Population by Island: 1920 to 1980
Table inserted here.

As noted previously, the distribution of the population by island did not change very much between 1973 and 1980. There were considerable changes on Saipan, however. While some of the villages increased dramatically, led by San Vicente with a 113 percent increase in the 6 1/2 year period, and Garapan with a 47 percent increase, some of the older areas experienced a considerable population decrease (Table 1.25). Each of the districts in Chalan Kanoa and Susupe lost population during the period; districts 2 and 4, in fact, lost about one third of their population during the period. The Northern Islands also lost population between censuses.

The areas which experienced the biggest increases in numbers, obviously also increased by the largest percentages as well. While Chalan Kanoa decreased from 28 percent of Saipan's population in 1973, it made up only 18 percent in 1980; Garapan increased from 22 percent to 28 percent (becoming the largest village), and San Vincente increased from 6 to 12 percent of the population. This picture will also be greatly changed in 1990 because of the large amounts of development in the extreme north and extreme south of Saipan.

Table 1.25 Population by Island and Place: 1973 and 1980

Table inserted here.

As noted earlier, data from the 1970 decennial census of the Northern Mariana Islands are not being used, in most cases, for comparison with the 1980 census because of deficiencies in the 1970 data set. It is not clear in all cases what went wrong in the 1970 census, but for the Northern Marianas, at least, there was a very large undercount in 1970, and the undercount was concentrated in certain areas of Saipan (Table 1.26).

Figure 1.8 Population Distribution by Island, Census
Designated Places: 1980
Figure inserted here.

Although the data for Tinian are reasonable when compared to data from previous and more recent censuses, and the data for the Northern Islands might be explained by visiting or other reasons for large numbers of persons to be off-island in a more traditionally mobile population, the data for Rota indicate about a 200 person undercount. For Saipan, the data look even worse; perhaps as many as 2000 to 3000 persons were not included in the tabulations. There is some evidence that these people were enumerated, but for some reason not all questionnaires were returned to the States for processing.

The areas of most severe undercount on Saipan seem to have been Tanapag, Susupe, San Antonio, and San Vicente. There doesn't seem to be a pattern in the omissions since Tanapag is in the north, Susupe in the center, San Antonio in the south, and San Vicente in the east, so probably the omissions were random. In any case, the undercount is severe enough that we are using the data only sparingly for comparison.

Table 1/26 Population by Island and Place: 1970 to 1980
Table inserted here.

In this chapter we have presented a brief population of the Commonwealth of the North Mariana Islands. Although there have been few censuses in the CNMI, the data have been reasonably good, with only a few exceptions, so that a fairly complete picture of the population changes has been obtained.

Figure 1.9 Population Distribution for Saipan, Census
Designated Places: 1980
Figure inserted here.

Figure 1.10 Percent Increase In Population by District:
1973 to 1980
Map inserted here.

Chapter 2.

Age and Sex Distribution

The age and sex composition of a population is the prime focus to planning for community development and for determining economic, social and population growth. Age is the crucial factor for determining various potential populations in a community such as for schools, manpower, voting, reproduction, etc. Sex is important in understanding social perspective and trends in a community and a population's potential economic activity.

The data on sex were derived from answers to question 3. At the time of field review, most cases in which sex was not reported were resolved by determining the appropriate entry from the person's given name and household relationship. When sex remained blank, it was allocated according to the relationship to the householder and the age and marital status of the person.

The data on age were derived from answers to question 5. Only the information in items 5b and 5c (on month and year of birth) was read into the computer. Answers to questions 5a (on age at last birthday) were used during field review to fill any blanks in question 5c. The age classification was based on the age of the person in completed years as of April 1, 1980. The data on age represented the difference between date of birth and April 1, 1980.

In Chapter 2 we discussed historical statistics for the Northern Mariana Islands, including age and sex distributions, starting with information for Rota in 1897. In this, and in subsequent chapters, we will be discussing recent statistics for the CNMI, with a view for the potential of using the data for planning purposes.

The population of the Commonwealth has been aging in recent years, partly as a result of reduced fertility (which will be described in Chapter 5), partly as a result of even more drastic decreases in mortality (seen in the much lower mortality rates during the American Administration than during the Japanese Administration), and partly because of the unusual migration situation with large numbers of relatively "middle-aged" migrants (discussed in more detail in Chapter 7).

The median age of the CNMI population in 1980 was 19.6 years (Table 2.1). The median age is that age which is the exact mid-point of all ages, that is, half the people were older and half were younger. The median had increased by almost 5 years during the period between 1967 and 1980, from 15.0 in 1967 to 16.6 in 1973 to 19.6 in 1980. (The data for 1967 are slightly skewed because non-Natives were excluded from the tabulation by age and sex, so the real median age for all persons was not quite this low).

The very low median ages for 1967 and 1973 have implications for the need for increased educational and health facilities for the many young persons. Those needs may now be changing as the population is aging because of the lower birth rates in the 1970s.

Figure 2.1 Age and Sex Distribution: 1967
Figure inserted here. Takes one page.

The median age for females is normally higher than for males, because females tend to live longer. This was not the case for the Northern Mariana Islands in recent years, however. In 1967 the median age for males was only slightly lower than for females - 14.1 years old for the males and 14.9 for the females. In 1973, the males were only a year younger than the females, with the median for makes being 15.3 years and 16.6 for females. However, in 1980 the age difference shifted, as the median for males went to 19.6 years compared to 18.3 years for females.

It is important to note that the upward trend in the aging of the Marianas is occurring for both males and females, but is seen even more in the males than in the females. When we look at the data on birthplace and on ethnicity in those chapters we will be seeing that the increase is due to migration, particularly of Filipinos and U.S.

mainlanders.

Table 2.1 Population by Age and Sex: 1967 to 1980
Table inserted here.

The aging of the Northern Marianas population is also seen in the distribution of the population by age group. Although 17 percent of the native population was under 5 in 1967, only 15 percent of the population was less than 5 in 1980 (and most of the decrease was between 1973 and 1980) (Table 2.2). Males and females experienced similar decreases for this youngest age group.

There were similar decreases for the other young ages, with those 5 to 9 decreasing from 17 percent to 13 percent of the population, and those 10 to 14 years old decreasing from 16 to 13 percent. Persons 15 to 19 experienced most of their decreases between 1967 and 1973, probably because students of this age group started leaving the islands for schooling, a trend which continued at least into the 1980s. With the emergence of the College of the Northern Mariana Islands, fewer students may be leaving the islands for schooling, and this age group may be a larger part of the total population.

The percentage of older persons, those 55 years and over, also did not change very much during the 13 years, increasing from 6 to 7 percent during the period. The increase was the same for both males and females.

Table 2.2 Population by age and Sex: 1967 to 1980
Table inserted here.

It was the persons in the working years, from 20 to 54 who increased the most in relationship to the other groups. Although only 28 percent of the native population was in this age group in 1967, by 1980 this group was 42 percent of the total population (it was 36 percent in 1973). For females, the percentage increased from 30 to 40 percent of the population between 1967 and 1980, while the percentage for males increased from 27 to 45 percent.

The median age in 1980 varied between the islands. On the Northern Islands with its small population, and large number of children, the median was only 12 years (half of the population was over 12 and half was younger) (Table 2.3). Saipan's median was about the same as for the whole Commonwealth, but Tinian's population was somewhat younger (at 18 years), and Rota's population was somewhat older (at 20 years).

The percentage distribution on each island did not differ very much from the distribution for the total.

Table 2.3 Age Distribution by Island: 1980
Table inserted here.

Figure 2.2 Age and Sex Distribution: 1973
Figure inserted here. Takes one page.

Figure 2.3 Age and sex Distribution: 1980
Figure inserted here. Takes one page.

Table 2.4 shows the population distribution for each five-year age group by island. Altogether, 87 percent of the CNMI population lived on Saipan, 8 percent on Rota, 5 percent on Tinian, and less than 1 percent in the Northern Islands in 1980. The distribution did not vary very much from this for the younger age groups. However, proportionately more elderly were living on Rota and Tinian than on Saipan for the older ages, especially those over 60. For persons 70 to 74 for example, only 77 percent were living on Saipan, with 12 percent living on Rota, and another 11 percent on Tinian.

Table 2.4 Age Distribution by Island: 1980
Table inserted here.

The median age of males in the CNMI was 20.9 years, about 2 and 1/2 years older than the females. Males on Rota were the oldest, on average, with a median age of 22.6 years, about 4 and 1/2 years older than the females. Many of these males were probably involved in the heavy construction going on at the time of the census. The males on Tinian were about 5 years older than the females, while those in the Northern Islands were about 1 year older.

Figure 2.4 Age and Sex Distribution for Saipan: 1980
Figure inserted here. Takes one page.

Table 2.5 Age and Sex Distribution, Males: 1980
Table inserted here.

The median age of females on each of the island (considering all the Northern Islands together), like the females in the whole commonwealth, was younger than the males. Women on the Northern Islands were about the same age as the males. Females on Saipan were about 1 year younger than the median for the whole population, and those on Rota and Tinian were two years younger. Much of this difference can probably be attributed to differential immigration of older males to these islands to work.

Figure 2.5 Age and Sex Distribution for Rota: 1980
Figure inserted here. Takes one page.

Table 2.6 Age and Sex Distribution, Females: 1980
Table inserted here.

Because of differential immigration of males, the ratio of males to 100 females increased from 109 in 1973 to 111 in 1980. In 1980, there were more males than females on all islands, ranging from 109 on Saipan to 121 on Tinian, 123 on Rota, and 136 for the Northern Islands.

For the youngest ages for both 1973 and 1980, more males than females are born, on average, which is reflected in the greater proportions of males (except for the 5 to 9 year olds in 1980 which had a surplus of females). There were fewer males than females in the age groups 15 to 19 and 20 to 24, probably because males are somewhat more likely than females to leave the islands for schooling, jobs, or the military.

After age 25, the proportion of males increases rapidly. For the 1973 census, the greatest proportion male was for the 45 to 49 year olds, reaching 160 males per 100 females. This means that for every 5 males aged 45 to 49 there were only 3 females in the CNMI in 1973. For the elderly, except for the 60 to 64 year olds, there were more females, and for those 70 and over, there were less than 80 males for every 100 females.

Figure 2.6 Age and Sex Distribution for Tinian: 1980
Figure inserted here. Takes on page.

Because of selective immigration, the proportion male for the middle ages was greater in 1980 than in 1973. The peaks were 171 males per 100 females for the 40 to 44 year olds and 174 males per 100 females for persons 50 to 54 years old. All of the islands (with the exception of the Northern Islands which had very small populations) had many more males than females in these age groups. There were more than 300 males per 200 females on Rota and Tinian in the 50 to 54 year old age group, meaning that there were more than 3 males for every female. For a number of the younger adult age groups on Rota there were 2 males for every female.

Table 2.7 Males per 100 Females by Island: 1980
Table inserted here.

The dependency ratio is obtained by dividing the sum of persons 0 to 14 (children) and those 65 years and over (the elderly), by persons 15 to 64 (the working population). The dependency ratio shows the relationship

between workers and consumers in a way. For example, a dependency ratio of 100 would mean that there was essentially one worker for each consumer. A ration above 100 means that there were more consumers than workers, and a ratio below 100 indicates that there were more workers than consumers.

The dependency ratio in 1973 was 93, but this decreased to 77 in 1980, partly as a result of reduced fertility, and partly due to immigration of persons in the middle years. As noted earlier, the CNMI has a very small number of elderly persons, and this was true for both censuses. Since the Northern Islands were not shown separately in 1973, change can not be measured. Nonetheless, the value of 154 (indicating 3 consumers for every 2 workers) was by far the highest in the CNMI in 1980, and the only islands which had a dependency ratio above 100. In 1973 both Rota and Tinian had more consumers than workers (dependency ratios above 100), with Tinian's 141 approaching the 3 to 2 level for the Northern Islands in 1980. The dependency ratio for Saipan actually increased slightly between 1973 and 1980.

Table 2.8 Dependency Ratio by Sex: 1973 and 1980
Table inserted here.

Table 2.9 shows another way of displaying the sex ratios for the CNMI. As noted before, there are usually more males than females in a population; the reverse is true for the CNMI. The population was slightly more make in 1980 than in 1973, with the excess of males reaching 10 percentage points on Rota and Tinian in 1980, and 15 percentage points on the Northern Islands. The age-child ratio was also highest for Rota at 12 percent.

Table 2.9 Age and Sex Distribution by Island: 1973 and 1980
Table inserted here.

This chapter has described the age and sex composition in the Commonwealth of the Northern Mariana Islands using recent censuses. Detailed age and sex distributions as they relate to various social and economic characteristics are described in the following chapters.

Figure 2.7 Male/Female Ratio: 1980.

Chapter 3.

Households and Families

The household structure of the Commonwealth of the Northern Mariana Islands differs from that found in the United States because of the more traditional life-style of extended families and frequent movements between households. This different kind of structure is seen in the census data.

The Census Bureau uses particular definitions for households, families, and the relationship of the individuals in them, and these conventions do not always correspond exactly to the configuration of households and families in the CNMI.

In 1980, the Census Bureau defined a household as including all the persons who occupied a housing unit. A housing unit was a house, an apartment, a group of rooms, occupied as a separate living quarters or, if vacant, intended for occupancy as a separate living quarters. Separate living quarters were those in which the occupants lived and ate separately from any other persons in the building and which had direct access from the outside of the building or through a common hall. The occupants could be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who shared living arrangements.

The actual classification of a housing unit as a household depended on entries in question 2 and item B on the census questionnaire. Item B on type of unit or quarters was filled by an enumerator or a census office clerk for each housing unit or group quarters.

The measure "persons per household" was obtained by dividing the number of persons in households by the number of households (or householders).

RELATIONSHIP TO HOUSEHOLDER

The data on relationship to householder were obtained from answers to question 2, which was asked of all persons in housing units.

When relationship was not reported for an individual, it was allocated according to the responses for age and marital status for that person while maintaining consistency with responses for other individuals in the household.

The following types of relationship were defined:

Householder. One person in each household was designated as the "householder." In most cases, this was the person, or one of the persons, in ;whose name the home was owned or rented or was associated with and who was listed in column 1 of the census questionnaire. If there was no such person in the household, any adult household member could be designated as the "householder." Two types of householders were distinguished - a family householder and a nonfamily householder. A family householder was a householder living with one or more persons related to him or her by birth, marriage, or adoption. The householder and all persons in the household related to him or her were family members. A nonfamily householder was a householder living alone or with nonrelatives only.

Spouse. A spouse was a person married to and living with a householder. This category included persons in formal marriages as well as persons consensually married.

Child. A child was a son, daughter, stepchild, or adopted child of the householder, regardless of the child's age or marital status. The category excluded sons-in-law and daughters-in-law. "Own children" were sons and

daughters, including stepchildren and adopted children of the householder who were single (never married) and under 18 years of age.

The number of children "living with two parents" included stepchildren and adopted children as well as sons and daughters born to the couple.

"Related children" in a family included own children and all other persons under 18 years of age in the household, regardless of marital status, who were related to the householder by birth, marriage, or adoption, except the spouse of the householder.

Other relative. Another relative was any person related to the householder by birth, marriage, or adoption, and who was not shown separately in the particular table (e.g., "spouse," "child," "brother or sister," or "parent").

Nonrelative. A nonrelative was any person in the household not related to the householder by birth, marriage, or adoption. Roomers, boarders, roommates, paid employees, wards and foster children were included in this category.

FAMILY

A family consisted of a householder and one or more other persons who are related to the householder by birth, marriage, or adoption. All persons in a household who were related to the householder were regarded as members of his or her family. A "married-couple family" was a family in which the householder and spouse were enumerated as members of the same household. Not all households contained families because a household might have been composed of a group of unrelated persons or one person living alone. The measure "persons per family" was obtained by dividing the number of persons in families by the total number of families (or family householders).

GROUP QUARTERS

All persons not living in households were classified by the Bureau of the Census as living in group quarters. Two general categories of persons in group quarters were recognized:

Inmate of Institution. Persons under care or custody in institutions at the tome of enumeration were classified as "Patients or inmates" of an institution regardless of their length of stay in that place and regardless of the number of people in that place. Institutions included homes, schools, hospital, or wards for the physically or mentally handicapped; hospitals or wards for mental, tubercular, or chronic disease patients; homes for unmarried mothers; nursing convalescent, and rest homes for the aged and dependent; orphanages; and correctional institutions.

Other. The "other" category included all persons living in group quarters who were not inmates of institutions. Rooming and boarding houses, convents and monasteries, and other living quarters were classified as "other" group quarters if there were 9 or more persons unrelated to the person listed in column 1 of the census questionnaire or if 10 or more unrelated persons shared the unit. Persons residing in certain other types of living arrangements were classified as living in "other" group quarters regardless of the number or relationship of people in the unit. These included persons residing in military barracks, on ships, or in college dormitories; patients in general or maternity wards of hospitals who had no usual residence elsewhere; staff members in institutional quarters; and persons enumerated in missions, flophouses, etc.

Of the 16,780 persons in the Northern Mariana Islands in 1980, 16234 (96.7 percent) were living in households, and the remaining 546 were living in group quarters (Table 3.1 and 3.2). There were 3028 households in 1980, 2652 (87.6 percent) being family households, households with a householder and at least one other relative, and 376 being nonfamily households.

Table 3.1 Household Relationship by Birthplace: 1980
Table inserted here.

There were 2113 married-couple families because there were 2113 spouses. There were more than 500 families in which no spouse was present, indicating the diversity of households in the CNMI. Also, as shown in the chapter on age and sex, and fertility, the population is youthful. This finding is reinforced by the fact that almost half the population living in households were 'children", that more than half of those born in the CNMI were children in households (twice the percentage as for those born outside the CNMI). More than 6 percent of the CNMI population in households were recorded as "grandchildren", less than 1 percent as parent, and more than 8 percent as other relatives.

Only 40 of the 546 persons (7.3 percent) living in group quarters were born in the CNMI. In fact, 437 (80 percent) were persons born in the Philippines - 436 of these lived in "other" noninmate group quarters, and 1 was a prisoner. Most of the CNMI born living in group quarters were inmates, whereas most of those born elsewhere were noninmates.

Table 3.2 Persons in Group Quarters by Birthplace: 1980
Table inserted here.

Persons living in group quarters had a different age distribution than those living in households. Altogether, persons living in group quarters were .5 percent of the total population 15 years and over (Table 3.3).

Although less than 1 percent of those 15 to 19 years old were living in group quarters, 10 percent of those 35 to 44 were staying in group quarters as were 9 percent of those in the 45 to 54 year old age group. Since most of these were born in the Philippines the impact of group quarters living must be considered in infrastructure planning in the CNMI.

Table 3.3 Persons Staying in Group Quarters by Age: 1980
Table inserted here.

The average household size in the Norther Mariana Islands in 1980 was 5.3 persons (Table 3.4). Saipan and Rota both had 5.3 persons per household, while there were 5.6 persons per household on Tinian, and 8.0 for the Northern Islands. The distribution of relationship across the islands did not vary very much. Almost 97 percent of the population living were in households in 1980. Less than 1 in 5 were householders, and about 3 in 5 were other relatives.

Table 3.4 Household Type and Relationship: 1980
Table inserted here.

By breaking the distribution of the population in households into family and nonfamily households, the average family size can be determined (Table 3.5). The average family site for the CNMI in 1980 was 6, and varied from 6 for Saipan to 9 for the Northern Islands. About 93 percent of the CNMI population in 1980 lived in family households (although 101 of the 104 persons in the Northern Islands lived in these households). Less than 4 percent of the population in 1980 were in nonfamily households, although this was true for more than 5 percent of the households on Rota.

Table 3.5 Persons by Household Relationship: 1980
Table inserted here.

About 88 percent of all households were family households; 65 percent of all households were family households with own children (Table 3.6). More than 2 out of 3 of all households were married-couple households, but more than 1 in 10 were family households with a female householder and no husband present. About 1 in 8 of all households were nonfamily households.

Rota had the smallest percentage of family households (at 81 percent), and also had the smallest percentage with own children and married-couple families.

Table 3.6 Family Type by Presence of Own Children: 1980
Table inserted here.

About 3 out of every 4 family households in 1980 had own children under 18 (Table 3.7). Again, Rota had the smallest proportion of these families - only 7 out of 10, while 10 of the 11 family households in the Northern Islands had own children.

Table 3.7 Family Type by Presence of Own Children: 1980
Table inserted here.

Although 3 out of 4 households had own children under 18, less than half of the family households had own children under 6 (Table 3.8). About 8 out of 10 married couple families had own children under 18, compared to somewhat more than half of the households with a female householder and no husband present, and less than half of the households with a male householder having no wife present.

Figure 3.1 Family Type: 1980
Figure inserted here. Takes one page.

Although less than half of the CNMI family households had own children in 1980, more than half of the married-couple families had own children under 6. Only 1 in 5 households which were not married-couple households had own children under 6.

Table 3.8 Type of Family Household by Presence of Own Children: 1980
Table inserted here.

As would be expected, most of the persons under 18 years old were children (Table 3.9). More than 8 in 10 were own children, and more than 7 in 10 were own children in married-couple families. Another 18 percent were "other relatives", so most of the persons under 18 were related to their householder in some way. Less than 2 percent were non-relatives or living in group quarters.

Table 3.9 Household Type and Relationship for Persons Under 18: 1980
Table inserted here.

More than half of those over 65 were either householders or spouses in 1980 (Table 3.10). More than 4 in 10 were householders, with more than twice as many male householders as female householders. About 3 in 10 of the other persons 65 years and over were recorded as "other" relatives. Again, only 4 percent were listed as nonrelatives, again attesting to the string of family ties in the society. Only 1 percent lived in group quarters.

Although there was only 1 person 65 years and over in the Northern Islands, the distributions did not vary very much for the other islands. The percentage of elderly spouses was greater on Rota and Tinian than on Saipan, and the proportion of "other" relatives was much higher on Saipan than either Rota or Tinian, which may indicate that some persons were moving from Rota and Tinian to stay with relatives, perhaps to be closer to health care services and other amenities. The percentage of nonrelatives on Tinian was greater than on the other islands.

The percentage of elderly nonfamily households was higher on Rota and Tinian than on Saipan, particularly households with female householders. Only Saipan had elderly living in group quarters.

Table 3.10 Household Type and Relationship for Persons 65 Years and Over: 1980

Table inserted here.

Finally, Table 3.11 shows the distribution of the population by size of household. Although the majority of households had between 2 and 7 persons, there were a few very large households, and some people living alone. Although 8 percent of the households were a single person living alone, almost 15 percent of the households on Rota were in this category (but only 5 percent of those on Tinian).

At the other extreme, 35 households in the Northern Islands in 1980 had 15 or more persons.

Table 3.11 Households by Persons in Households: 1980
Table inserted here.

The household and family structure reflects both the traditional life-style in the islands, and a move toward nuclear families as the commonwealth industrializes and become more "Western" in its thinking and planning.

Figure 3.2 Households by Persons in Households: 1980
Figure inserted here. Takes one page.

Figure 3.3 Persons Per Household by District: 1980
Figure inserted here. It is a map. Takes one page.

Chapter 4.

Marital Status

Marriage is an important indicator of socio-cultural patterns in a society, particularly because the age pattern of marriage affects fertility. Usually there is a relationship between age at first marriage and the number of children a woman will have, partly because earlier marriage gives more time for births, and partly because younger women tend to be more fertile than older women.

The data on marital status were derived from answers to question 6. The marital status classification refers to the status at the time of enumeration. Persons classified as "Now Married" included those who had been married only once and had never been widowed or divorced as well as those currently married persons who remarried after having been widowed or divorced. Consensually married persons were those living in a marital union without a civil or religious matrimonial contract and were classified as now married; they were reported separately as "consensually married." Persons reported as separated were those living apart because of marital discord, with or without a legal separation. Persons whose only marriage had been annulled were classified as never married, and all persons under 15 years old were classified as never married. All persons classified as never married are shown as "single."

When marital status was not reported, it was allocated according to the relationship to the householder and sex and age of the person.

Between 1973 and 1980, the percent of the CNMI male population that was single decreased from 42 percent to 35 percent, a drop of 7 percentage points (Table 4.1). The decrease was essentially balanced by the increase in the "married" population, from 54 percent to 60 percent during the 7 years.
The percentage of separated and divorced males increase slightly, but the widowed population remained about the same.

Table 4.1 Marital Status: 1973 and 1980
Table inserted here.

Figure 4.1 Marital Status for Males 15 Years and Over:
1973 and 1980
Figure inserted here. Takes up one page.

The experience for females was similar, although less pronounced. The percentage of never married persons decreased slightly, while the percentage of married females increased slightly. The percentage of separated and divorced females also increased a little bit, while the percentage of widowed persons remained about the same.

Table 4.2 Marital Status: 1973 and 1980
Table inserted here.

There were only small differences in the distribution by marital status by island in 1980 (Tables 4.3 and 4.4). The distribution for males were almost identical except for the very small population in the Northern Islands. On Rota and Tinian there were proportionately slightly more widowers than on Saipan, and slightly smaller proportions of "never married" individuals.

Table 4.3 Marital Status by Island for Males: 1980
Table inserted here.

Figure 4.2 Marital Status for Females 15 Years and Over:
1973 and 1980
Figure inserted here. Takes one page.

Females on the various islands showed a different pattern. Although Saipan, with its disproportionately large population was very close to the CNMI distribution, both Tinian and Rota had higher percentages of widows, with almost 11 percent of the adult females on Rota being widows (and 7 percent of those on Tinian). The percentage "never married" on Rota and Tinian was much smaller than on Saipan, and although this was compensated for by the large percentage of married persons on Tinian, most of the difference on Rota was the widows.

Table 4.4 Marital Status by Island for Females: 1980
Table inserted here.

As noted earlier, the percentage of never married males decreased from 42 percent in 1973 to 35 percent in 1980. The percentage "never married" by age group, however, tended to increase, showing some delay in first marriage (Table 4.5). For the 30 to 34 year olds, for example, the proportion never married increased from 9 percent in 1973 to 19 percent in 1980 (although the numbers for 1973 were small). Also, the change from the TTPI government to the CNMI government, and the large influx unmarried migrants probably has affected the figures.

The Singulate Mean Age at Marriage (SMAM) (Hajnal 1954) is derived by an indirect technique to obtain the average age at first marriage for a population or group. The average age at first marriage for males in the CNMI in 1980 was 24.5; this increased slightly to 25.3 years in 1980, and although the increase is small, it provides some evidence for delay in first marriage.

Figure 4.3 Never Married Persons 15 Years and Over by
Island and Sex: 1980
Figure inserted here. Takes one page.

Table 4.5 Percent Never Married by Age for Males:
1973 and 1980
Table inserted here.

The Singulate Mean Age at Marriage for females in 1973 was 23.1 years, which increased to 23.4 years in 1980 (Table 4.6). Although the increase was small, the figures are still among the highest in Micronesia)Levin and Retherford 1986). As with males, the percentage single by age group increased for almost all age groups between 1973 and 1980, indicating delay of first marriage.

Table 4.6 Percent Never Married by Age for Females:
1973 and 1980
Table inserted here.

Figure 4.4 Singulate Mean Age at Marriage by Sex:
1973 and 1980
Figure inserted here.

The phenomenon seen for the never married in which the percentage for the total decreased while the proportions for the age groups increased was reversed for the currently married persons. Although the percentage of married males increased from 54 percent to 60 percent between 1973 and 1980, the percentage for most of the age groups decreased (Table 4.7). For example, the percentage of married males 30 to 34 years old decreased from 88 percent in 1973 to 79 percent in 1980.

Table 4.7 Percent Now Married by Age, Males: 1980
Table inserted here.

A similar pattern was also seen for females (Table 4.8). The percentage married increased for females between 1973 and 1980, from 55 to 56 percent, but most of the age groups decreased in percent married. The percent for 25 to 29 year olds decreased from 76 to 70 percent, and for 30 to 34 year olds from 87 to 78 percent.

Table 4.8 Percent Now Married by Age for Females:
1973 and 1980
Table inserted here.

CONSENSUALLY MARRIED

Use of "consensually" married on the questionnaire is somewhat problematic because there is not a generally agreed upon
definition of what constitutes a consensual union. As noted previous, for 1980, the Census Bureau defined a consensual marriage as a couple who were "living in a marital union without a civil or religious matrimonial contract". It is likely, however, that respondents and enumerators did not always use this definition to decide on marital status of individuals in the census.

In traditional Micronesian societies, marriage was not necessarily formalized by a religious ceremony, and persons sometimes moved into and out of unions over the years. Marriage among Chamorros was formalized, however, after Hispanization, and certainly under the Catholic Church. Many of the early carolinian migrants did not interact with the Chamorros and maintained a more traditional form of marriage into the twentieth century. Even in the contemporary population which is almost all Catholic, there is still a certain amount of non-formalized unions; whether these unions are listed as "consensual" or as two "never married" individuals cannot always be determined from the census results.

Of the 5,829 married persons in 1980, 553 were listed as consensually married (10 percent) (Table 4.9). The younger the person, the more likely he or she was to be consensually married. Although only 2 percent of all marriages were to persons 15 to 19, this population made up more than 8 percent of all consensual marriages. Similarly although persons 20 to 24 made up only 1 in 10 of all marriages, this age group made up more than 1 in 4 of all consensual unions. Altogether, more than half the persons in consensual unions were under 29 years old.

This same youthfulness is seen in the distribution of marriages within age groups. Almost 40 percent of all married persons between 15 and 19 years old were in consensual unions, and more than one-fifth of persons 20 to 24. There was generally an indirect correlation between age and percent of consensual unions.

These data indicate that there may be problems in interpreting "consensual" marriage. Since these unions do not seem to persist into middle age, consensual union may be better classified as "trial" marriage. If "consensual" marriage is fully categorized by the Census Bureau definition, then it is very different from non-consensual union, at least terms of age. If the government of the Northern Mariana Islands is using the data on consensual marriage for planning and policy uses, a re-definition may be necessary, or at least a more thorough evaluation by a survey may be required.

Table 4.9 Consensually Married Persons by Age: 1980
Table inserted here.

Females tended to be younger than males in the consensual unions (Table 4.10 and 4.11). Although 15 to 19 year olds made up 4 percent of the males in consensual unions in 1980, they were 13 percent of the females; and, while 20 to 24 year old consensually married males were 17 percent of that population, they were 35 percent of the females. In fact, not quite half of the females in consensual unions were under 25 years old.

Table 4.10 Consensually Married Males by Age: 1980
Table inserted here.

Males were older, indicating that some of the mae consensual unions may have been "second" marriages. About 1 in 4 of the male unions were for males 35 to 44 years old (compared to about 1 in 8 for the females); it should be noted that this was also the largest age group for all male marriages as well.

Table 4.11 Consensually Married Females by Age: 1980
Table inserted here.

More than half of the marriages for males 15 to 19 were consensual unions, compared to more than one-third of the females for this age group. As for the total population, the percentage of consensual unions tended to decreased with age.

Since the majority of the population was born in the Northern Marianas, the largest percentage of now married, and consensually married persons were born in the CNMI (Table 4.12). However, although 59 percent of all married persons were born in CNMI, this was true for 70 percent of all consensually married people. Filipinos made up 18 percent of all married persons, but only 8 percent of consensually married persons. Larger percentages of persons born on Guam, Palau, and the Federated States of Micronesia were consensually married than their percentages for all married persons, and the opposite was true for the United States born.

The percentages for Guam, Palau, and the Federated States of Micronesia do not mean that more people were actually in consensual unions. However, while 10 percent of all marriages in the CNMI in 1980 were consensual, 14 percent of those for Guam, 13 percent for the Federated States of Micronesia, and 12 percent of those for CNMI and Palau were in this category.

Table 4.12 Consensually Married Persons by Birthplace: 1980
Table inserted here.

As mentioned earlier, marriage is a vital indicator of social-cultural patterns in a society, particularly because the age pattern of marriage affects fertility. Since younger women tend to be more fertile than older women, the age of women at first marriage usually relates to the number of children a woman will have.

Chapter 5.

Fertility

Analysis of fertility trends in the Pacific has never been abundant, and the Northern Mariana Islands is no exception. Although the Northern Mariana Islands has had regular censuses, and a great deal of information has been collected, there has been no systematic look at the fertility trends until recently (Levin and Retherford 1986).

The data on children ever born were derived from the answers to question 21a, which was asked of women 15 years old and over, regardless of marital status. Still-births, stepchildren, and adopted children were excluded. Ever-married women were instructed to include all children born to them before and during their most recent marriage, children no longer living, and children away from home, as well as children who were still at home. Never-married women were instructed to include all children born to them. Data on children ever born reported by never-married women should be viewed with caution because of the very high rates of nonresponse to the question and the anticipated underreporting of live births to these women.

In the 1980 census, a terminal category of "15 or more" was used for recording the number of children ever born. For purposes of computing the total number of children ever born, the terminal category was given a mean value of 15.

The data on the number of children still living were derived from answers to question 21b, which was asked of all women 15 years old and over who reported having had at least one child ever born in question 21a. For the purposes of computing the total number of children still living, the terminal category "15 or more" was given a mean value of 15. In addition, all women 15 years old and over who reported having had a child were also asked in question 21c if any children were born since April 1, 1979. Although the data were collected for women past age 50, subsequent editing procedures only accepted a "Yes" response for women 15 to 50 years old. Neither of these two questions had been asked in prior decennial censuses.

In 1980, there were 2161 children ever born for every 1000 women in the CNMI, and 2858 children still living per 1000 women; another way of stating this is that the average woman had had 3.1 children ever born, and 2.9 still alive (Table 5.1). Until the 55 to 59 year age group, there was a direct correlation between age and number of children ever born, that is, the older the age group of women, the higher the fertility. Of course, many of the young women had not finished their fertility, and, in the case of the 15 to 19 year old women, many had not even started to have children.

For those women who had probably completed their fertility, there is evidence of a fertility decline. Women in the 35 to 44 year old age group had 5211 children per 1000 women, compared to 6751 for women 45 to 54 and 7215 for women 55 to 59. So, 55 to 59 year old women had had an average of about 7.2 children ever born, while those 45 to 54 had 6.7 and the 35 to 44 aged women had 5.2, still large numbers, but a decrease of an average of 2 children per woman. Older women had fewer children ever born, which was either a result of their forgetting some of their children who had died. Older women had fewer children ever born, which was probably due to higher mortality earlier in the century and forgetting.

Table 5.1 Children Ever Born, Still Alive, and Children Born in the Last Year: 1980

Table inserted here.

The fertility of women born in the Northern Mariana Islands was higher than for women born elsewhere (Table 5.2). Although all women had 2217 per 1000 children ever born in 1980, women born in the CNMI had 2407 per 1000 compared to 1868 for women born outside the CNMI. The data for children still alive and children born in the year before the census followed the same trend.

Table 5.2 Children Ever Born, Surviving, Last Year by
Birthplace of Mother: 1980
Table inserted here.

Also, women who were not in the labor force in 1980 had higher fertility than women who were in the labor force (Table 5.3). Of course, some of the women who were not in the labor force may not have been in the labor force since they were having children, and caring for them while they were young. For females 16 years and over, there were 2338 children ever born per 1000 women. Women in the labor force had 2198 children ever born per 1000 women, compared to 2504 per 1000 for women not in the labor force. Although there were very few unemployed women, they tended to have lower fertility than employed women.

Table 5.3 Children Ever Born, Surviving, Last Year by
Labor Force: 1980
Table inserted here.

Table 5.4 shows comparative fertility data for the 1973 Trust Territory of the Pacific Islands for the CNMI, and the 1980 census. The ratios are expressed in children per woman rather than children per women. Although we are not looking at changing cohort fertility, a look at fertility by age group in the censuses is revealing. For example, the number of children ever born for females 30 to 34 decreased from 4.0 to 3.4 during the 7 years. More impressive, the number of children ever born for women aged 35 to 39 decreased from 6.3 in 1973 to 4.5 in 1980, a decrease of 1.8 children per woman during the period, evidence of a fertility decline.

The percentage of children surviving of children ever born increased from 95.6 percent to 97.4 percent during the 7 year period, indicating some mortality decline as well. Since larger percentages of older women have more children surviving, the mortality decline is probably for all ages (see Chapter 6).

Table 5.4 Children Ever Born and Children Surviving:
1973 and 1980
Table inserted here.

OWN CHILDREN FERTILITY ESTIMATION

Because census data for the Northern Mariana Islands is collected by household, and the own children method of fertility has been readily available in the Pacific, this method has been used to investigate changing fertility trends in the Northern Mariana Islands. Other demographic estimation techniques are included where appropriate.

The own children method has been described in earlier publications and needs only to be recapitulated briefly here. (For more detailed accounts, see, for example, Cho 1973, Retherford and Cho 1978, and Cho, Retherford, and Cho 1987; the current version of the own children computer programs uses formulas given in these sources.) The method is a census- or survey-based reverse survival technique for estimating age-specific birth rates for years previous to a census or household survey. Two different methods have been used here to match mothers and children within households as a first step in the fertility analysis. For the 1973, enumerated children were first matched to their mothers within households on the basis of responses to questions on age, sex, marital status, relationship to householder, and number of children still living. For 1980, however, matching was based on a special question on mother's line number or person number on the household schedule, if the mother was present.)

The matched (i.e. own) children, classified by child's age and mother's age, are reverse-survived to estimate numbers of births by age of mother in previous years. Reverse survival is also used to estimate numbers of women in previous years. Since there are no post-enumeration surveys in the American Pacific and no independent estimates of the population exist, no adjustments are made for underenumeration. After adjustments are made for unmatched (non-own) children, age specific birth rates are calculated by dividing the number of births by the number of women. Estimates are computed for each previous year or group of years back to fifteen years before the census. Estimates are not computed further back than 15 years because births must then be based on children at ages 15 or older at

enumeration, a large proportion of whom do not reside in the same household as their mother and hence cannot be matched. All calculations are done initially by single years of age and time (years before the census). Estimates for groups of ages or groups of calendar years are obtained by appropriately aggregating numerators and denominators of single-year rates and then dividing the aggregated numerator by the aggregated denominator. For reasons of economy, the method is usually applied to census samples rather than complete counts, but because the population of the Northern Mariana Islands is so small, the complete counts were used.

Non-own (unmatched) children are allocated to mothers by multiplying each age-specific category of own (matched) children, specified by mother's age, by the corresponding age-specific ratio of all children to own children. Thus the number of own children at a given age is adjusted upward by the same factor regardless of mother's age, thereby introducing some error in the fertility estimates since the proportionate distribution of non-own children by age of mother generally differs somewhat from the proportionate distribution of own children by age of mother. It is, of course, impossible to specify non-own adjustment factor's by mother's age since the mother of an unmatched child is by definition not in the household. Since older women are usually in more stable household situations than younger women, the nature of the error from not specifying non-own adjustment factors by mother's age is usually to reallocate erroneously a certain proportion of non-own children of a given age from younger mothers to older mothers. This error, if present here, should have little effect on the total fertility rate, but it produces an age pattern of fertility that is too low at the younger ages and too high at the older ages. The error is minor if the adjustment factors for non-own children are low, but sometimes these factors can be quite high.

The non-own factors for the 1973 and 1980 censuses of the CNMI are shown in table 5.5. As noted earlier, household relationship was used to match mothers and children from the 1973 census, while the mother's person number was used to match mothers and children in 1980. The mother's person number is useful in matching where households are large and complex and non-own proportions are large (as is true for the CNMI), and usually results in a slight improvement in the accuracy of the fertility estimates (Levin and Retherford 1982).

Table 5.5 Percentage of Non-own Children by Age: 1973 and 1980

Table inserted here.

Reverse-survival requires life tables. For both the 1973 and the 1980 censuses, life tables were obtained through the use of census questions on number of children ever born and number of children still alive. By means of a method developed by Brass (1975), this child survivorship information was used to obtain estimates of child mortality that were in turn matched to the appropriate level of the Coale-Demeny Model West life table family (Coale and Demeny 1966). (The procedure for obtaining the usual Brass estimates and matching them to Coale-Demeny model life tables is built into the own-children computing package and was used here; see Midkiff and Choe 1978.) The level obtained in this way specified life tables that were then used to derive reverse-survival ratios (for details, Retherford and Cho 1978).

For the estimates derived for our fertility analysis, we have assumed constant mortality throughout the 15 year period in each case. The mortality estimates could be too low (see Chapter 6 on mortality), with life expectancy too high, because of a tendency for respondents to selectively omit mention of dead children when responding to the child survivorship questions. If such omissions occur, the reverse-survival factors for children would tend to be too low, and the own-children fertility estimates would tend to be biased downward. But at prevailing mortality levels (life expectancy of 67.1 years at birth for females for 1973 and 68.6 years for 1980), the reverse-survival factors are already close to one and should be insensitive to errors of even several years of life expectancy. Retherford, Chamratithiron, and Wanglee (1980), for example, found that in Thailand, with an average life expectancy of around 60 years, a mortality estimation error as high as 16 years of life expectancy generated fertility estimation errors of 8 percent or less).

Own-children estimates of age-specific marital birth rates were obtained in the following way: First, age-specific proportions currently married in five-year age groups were obtained from the 1967, 1973 and 1980 censuses and linearly interpolated between the censuses to get age-specific proportions currently married in five-year age groups in each intercensal year. For the early years, estimated from the 1973 census, the trend lines for age-specific

proportions married were extrapolated backward in time from 1973 to 1967 and on back. In this way we obtained an array of age-specific proportions currently married, with age in five-year age groups along one dimension, and time in single calendar years (or midpoints of time periods) along the other dimension. The original own-children analysis provided a corresponding array of age-specific birth rates for all women. From these two matrices we obtained a third array of age-specific marital birth rates by dividing, term by term, the array of age-specific birth rates by the array of age-specific proportions currently married.

Marital total fertility rates (but total fertility rates for all women) pertain only to ages 20 to 49. The MTFR including ages 15 to 19 is not a good measure because it weights the birth rate at ages 15 to 19, which is not high in the CNMI and would be based on too few women married women because of moderately late marriage (as seen in Chapter 4). If the measure included the 15 to 19 year olds, then, a distorted picture of overall marital fertility trends would be produced.

Age-specific proportions never married were obtained in the same way as age-specific proportions currently married. Age-specific proportions never married were obtained in five-year age groups from the 1967, 1973 and 1980 censuses, and linearly interpolated between censuses to get age-specific proportions never married five-year age groups at mid-points of intercensal time periods or subperiods. Linear extrapolation was used for the early years. Each set of age-specific proportions never married so derived provided the basis for calculating a value of the singulate mean age at marriage (SMAM), which we have used as our summary measure of nuptiality and which was discussed in Chapter 4.

The Coale-Trussell m index of marital fertility control was computed. This index measures the deviation from the typical age pattern of natural fertility, defined as fertility in the absence of deliberate family limitation. The m index depends on the shape of the age-specific marital fertility schedule, not on the level of marital fertility. In the natural family situation, the shape of the schedule is convex throughout the reproductive ages, whereas in the family limitation situation it is concave at reproductive ages, whereas in the family limitation situation it is concave at the older reproductive ages. For purposes of constructing the m index, the standard age schedule of natural fertility is obtained as the arithmetic average of ten of the age-specific natural marital fertility schedules designated by Henry (1961). If the observed age-specific fertility schedule has the same shape as that of the standard age-specific natural fertility schedule, m = 0. If the observed schedule deviates from the standard schedule by an amount that is the average deviation of 43 reasonably reliable marital fertility schedules in the early 1960s, representing a range of differences in the extent of fertility control, them m = 1.

No adjustment was made for incorrect enumeration (age-selective undercount or age misreporting) because the data necessary to compute adjustment factors were unavailable. If the undercount is proportionately the same for each age, however, the own-children fertility estimates are unaffected, since estimated numerators and denominators of birth rates are subject to the same multiplicative errors, which cancel. Age misreporting is potentially a more serious problem. The jagged up-and-down trends in the annual fertility estimates for the CNMI indicate the presence of some age misreporting, so that some of the estimates must be viewed cautiously.

Results. In the CNMI, fertility began a definitive decline during the estimation period considered here. Fertility in the CNMI fell rapidly between the late 1960s and the mid-1970s, tending to level off in the late 1970s. The TFR fell from about 8 to 4 and the MTFR from about 9 to 5.5 (Table 5.6 and 5.7).

Table 5.6 Total Fertility Rates and Age-Specific Rates,
Derived by the Own-Children Method: 1973 and 1980
Table inserted here.

Estimated trends from successive censuses agree fairly well during the period of overlapping estimates. The Singulate Mean Age at Marriage (SMAM) increased over the estimation period. Age Specific Birth Rates (ASBRs) and the Age Specific Marital Birth Rates (ASBMRs) fell at all ages, indicating practice of birth control for spacing as well as for limiting births. The figures, age-specific rates for the earlier period are based on the 1973 census and age-specific rates for the later period are based on the 1980 census. When, alternatively, the change in

the age pattern of fertility is estimated solely from the 1980 census, the numbers are somewhat different, but it is true that fertility declines at all ages, indicating birth control for spacing as well as limiting.

Figure 5.2 Annual T.F.R. for NMI: 1973 - 1980
Figure inserted here. Takes one page.

The marital birth rate at ages 15 to 19 shows a very large decline starting from an extremely high level. This finding is unquestionably spurious, as the estimated birth rate is many times higher than ever reliably documented in any other population. Evidently many births at 15 to 19 (and probably a good many at 20 to 24 as well) are occurring in unions not recorded as marriages in the census.

Table 5.7 Marital Total Fertility Rates and Marital
Age-Specific Fertility Rates: 1973 and 1980
Table inserted here.

Recall that we estimate age-specific marital birth rates by dividing age-specific birth rates for all women by corresponding age-specific proportions currently married; therefore, to the extent that births occur in consensual unions, our estimates of age-specific marital birth rates are inflated. The fact that our estimate of marital fertility as 5 to 19 falls so dramatically may indicate that the prevalence of consensual unions is declining, or that the 1980 census definition of marriage was broadened to include more consensual unions, or both. The m index of fertility control also increased, and the agreement of overlapping trends in m from successive censuses is fairly good. (Because the m index, like MTFR, is calculated using marital birth rates starting at age 20, it is unaffected by the highly biased rate at ages 15 to 19.)

There is no formal government family planning program in the CNMI. The comparisons of TFRs estimated by the own-children method with TFRs estimated from vital registration data in Table 5.8 suggest that birth registration is essentially complete. The apparent over-registration of about 10 percent in 1967 probably occurs because of the 1967 census undercount, which has the effect of inflating birth rates estimated from vital registration data.

Figure 5.3 Annual M.T.F.R.S. for NMI: 1973 - 1980
Figure inserted here. Takes one page.

Figure 5.4 M - Index for NMI: 1973 - 1980
Figure inserted here. Takes one page.

Table 5.8 Ratios of Fertility Estimates Derived by the Own-
Children (OC) Method to Fertility Estimates Based
on Alternative Sources (AS)
Table inserted here.

FAMILY PLANNING

The CNMI has had only one survey which collected data on family planning practices. In 1970, a Knowledge, Attitudes, and Practices (KAP) survey was collected by the Department of Public Health, University of Hawaii.

Maps from the 1967 Peace Corps census were used to obtain a sampling frame. After "Capital Hill" was excluded because of the large number of Trust Territory personnel living there, 174 of the 1921 households were chosen (about 9.1 percent). Of these, 40 had no women aged 15 to 45. Then, 21 more houses were eliminated because they contained Americans or Palauans. A total of 164 interviews were completed.

In the 1970 survey, 33 (20 percent) of the 161 women responding to questions about contraceptive use, were actually practicing contraception when interviewed. Of the others, 43 (54 percent) said they had considered preventing pregnancy, but had never actually done so. When asked if they had ever practiced contraception in the past in order to space their children, 12 percent stated that they had, and 15 percent indicated that they had tried to stop having children altogether.

The KAP survey considered women who had had surgical sterilization, tubal ligation or more radical procedures to be "contraceptors." So, although 12 women (36 percent) of the 33 contraceptors used oral contraceptives, 7 had had tubal ligations, a 3 reported that their husbands had had vasectomies. The numbers are to small to make any statements about contraceptive use for 1970.

Of the 128 nonusers, 40 (31 percent) were not "at risk" of pregnancy (because of natural infertility, menopause, current pregnancy, or no opportunity for sexual relations). Women who said that they wanted to have more children, and those who had religious objections to contraception, were mostly older women (30 to 45 years). A majority (65 percent) of women who wanted more children had had only 1 to 4 living children, which, given the data for children ever born in the CNMI, was a "small" family; 80 percent of the women having 1 to 4 children wanted to have 6 children. Women who had data for children ever born in the CNMI, was a "small" family: 80 percent.

It is important to remember that the KAP survey was taken in 1970. Even then, knowledge of family planning was beginning to take hold, and was reflected in the data:

> "It seems, thus, that times are changing. Older women have had little knowledge of spacing and limiting pregnancies and only recently have come to the hospital to get advise. The younger generation, however, has had considerably more information in school, and apparently have discussed contraception more frequently. It seems reasonable to assume that such knowledge is gained from non-medical sources available in the community, such as schools, the mass media, and "relatives and friends." One can assume perhaps that, with continued interest and education, a large proportion of the younger women will be able to decide on the use of contraception on the basis of sufficient and accurate information.: (KAP 43-44).

Chapter 6.

Mortality

Mortality data are not collected directly in the decennial censuses. Indirect measures can be obtained from the questions on children ever born and children still alive as noted in the previous chapter on fertility in the CNMI. These data indicate a gradual increasing life expectancy of females at birth, from 67 in 1973 to 69 in 1980 (Levin and Retherford, 1986:10). The rates may be affected by a reluctance in Micronesian societies to mention dead persons, causing a tendency for respondents to selectively omit mention of dead children when responding to the child survivorship questions. (As noted in the fertility chapter, if such omissions occur, the reverse-survival factors used in the own-children fertility method will be too low, and the estimates may be biased

The figures for life expectancy at birth are somewhat higher than for other areas of the Pacific but the quality of health care in the Northern Mariana Islands, especially on Saipan, is better than in many other areas. At least for Saipan, most people are only a relatively short distance from the hospital, where health care has been free, or available at only nominal cost. Infant and child mortality are low, as is general mortality.

Mortality will be explored more fully in a subsequent paper.

Chapter 7.

Migration

In Chapter 1 we discussed the history of migration movements to the Northern Mariana Islands. Both Chamorros and Carolinians have had long histories of migration in and around their area of the Pacific, but they have been joined in recent years by migration of other groups - first the Japanese who moved in in large numbers in the 1930s, and then either died or moved out after World War II, then the Americans throughout the American Administration, and finally the "new" migrants from the Philippines, Japan, Taiwan, and other areas.

There were 4 migration questions on the 1980 decennial census - place of birth, father's birthplace, mother's birthplace, and residence in 1975.

The data on place of birth were derived from answers to question 10. Respondents were instructed to report place of birth in terms of the mother's usual place of residence at the time of the birth rather than in terms of the location of the hospital if the birth occurred in a hospital. Persons born in the CNMI or one of the other areas of the Pacific were to report their island or atoll of birth, persons born in the United States reported their State, and persons born elsewhere were asked to report their country of birth according to international boundaries recognized by the United States government on April 1, 1980. Since numerous changes in boundaries of foreign countries have occurred in the last century, some of these persons may have reported their country of birth in terms of boundaries that existed at the time of their birth or emigration, or in accordance with their own national preference. Selected countries of birth are shown here.

Place of birth was not allocated for the Northern Mariana Islands in 1980. Question 12 on year of immigration to the CNMI was asked. Persons born outside the CNMI were to indicate the period which included the year they came to stay permanently in the Commonwealth. If the year of immigration was not reported, a response was assigned using the responses of other persons based on age and place of birth; the allocation procedure did not work perfectly, since there were a few mismatches where persons were reported as having migrated before they were born.

The data on place of birth of parents were derived from answers to questions 13 and 14. These questions were asked for the first time in the 1980 decennial census. Information on place of birth of parents was used to classify the population of the Northern Mariana Islands according to the place where the person's parents were born.

Persons with one or both parents born elsewhere were asked to report the country of birth according to international boundaries as recognized by the U.S. government on April 1, 1980. Place of birth of parents was not allocated for nonresponse. Selected areas of parental birth are shown here.

The data on residence in 1975 were derived from answers to questions 15a, 15b, and 15c. Persons living in the Northern Mariana Islands or one of the other areas listed in question 15b in 1975, were asked to report the village and major island or atoll, or U.S. State. Persons living elsewhere were asked to report the foreign country in which they were living in 1975. Residence in 1975 is used in conjunction with current residence to determine the extent of residential mobility of the population. When no information on residence in 1975 was collected for a person, information for other family members was used, if available. All cases of nonresponse, or incomplete response not assigned based on information from other family members were shown separately in tabulations as "Residence in 1975 not reported."

The number of persons who were living in a different house in 1975 was somewhat less than the total number of moves during the 5-year period. So,me persons in the same hours at the two dates had moved during the 5-year period but by the time of enumeration had returned to their 1975 residence. Other persons who were living in a different house had made one or more intermediate moves. For similar reasons, the number of persons living in a different municipality (or island) may be understated.

BIRTHPLACE

More than 71 percent of the CNMI population in 1980 were born in the Commonwealth, down from 79 percent in the 1973 Trust Territory of the Pacific Islands (TTPI) Census (Table 7.1). The proportion of the population that was born in the TTPI remained the same between the two censuses, at 9 percent. The percentage born elsewhere, increased from 12 percent in 1973 to 19 percent in 1980, so that 1 in every 5 persons in the CNMI in 1980 was born neither in the CNMI itself nor in one of the other TTPI areas.

Table 7.1 Birthplace: 1973 and 1980
Table inserted here.
***Percent change 1973 to 1980 percents are wrong

Figure 7.1 Birthplace: 1973 and 1980
Figure inserted here. Takes one page.

Although the population of the Northern Marianas increased from 14,333 in 1973 (based on a usual residence count necessary for this table) to 16,780 in 1980 (15 percent), the born elsewhere population increased 46 percent during the same period. The population born in the Northern Mariana Islands only increased 6 percent during the period, indicating a drastic reduction in the fertility rate (for which this is no evidence), or emigration from the Northern Mariana Islands to other places between 1973 and 1980. The percentage increase for TTPI-born persons was approximately the same as the overall increase for the Commonwealth. Since no other recent previous census data are available, it is not possible to tell much from this trend so far but it is likely that by 1990 the percentage of the population born in the CNMI will be even smaller.

The percentage of both males and females born in the CNMI decreased during the 7 years (Table 7.2). The percentage of males born in the CNMI decreased from 76 percent in 1973 to 69 percent in 1980, and the percentage for females decreased from 81 percent in 1973 to 74 percent in 1980.

Table 7.2 Birthplace by Sex: 1973 and 1980
Table inserted here.

The percentage of persons born elsewhere on Saipan and Tinian was similar to the CNMI as a whole, but Rota had 81 percent born in CNMI (and all but 1 of the persons in the Northern Islands was born in the CNMI) (Table 7. 3).

Table 7.3 Birthplace by Island: 1980
Table inserted here.

Figure 7.2 Birthplace by Sex for the Northern Mariana Islands: 1973 and 1980
Figure inserted here. Takes one page.

Figure 7.3 Percent Born in CNMI: 1973 and 1980
Figure inserted here. Takes one page.

After the CNMI born, the next largest part of the population was born in the Philippines (9 percent), followed by the Federated States of Micronesia (5 percent) and Palau (4 percent) (Table 7.4). Comparative data are not available from earlier censuses. It is clear that migrants were already making up a large part of the CNMI population in 1980 - almost 3 in every 10 residents.

Table 7.4 Birthplace by Sex: 1980
Table inserted here.

There were differences by sex. Although 74 percent of the females in 1980 were born in the CNMI, this

was true for only 69 percent of the males. Most of the difference can be attributed to the relatively large number of Filipino males in 1980. Although only 6 percent of the females were born in the Philippines, more than 12 percent of the males were born there; in fact, almost 1 in every 8 males in the CNMI in 1980 was born in the Philippines.

When persons born in the CNMI are excluded, a clearer picture of the immigrants emerges. Fully 4 out of every 10 persons born outside of the Commonwealth were born in Asia; about 1 in 3 persons were born in the Philippines (Table 7.5). In fact, nearly half of the immigrant males were Asian, with 4 of every 10 males migrants being from the Philippines.

About 1 in 6 immigrants were from the Federated States of Micronesia, including almost 1 in 5 of the female immigrants. The next largest migrant groups were from Palau (14 percent), the United States (12 percent), and Guam (11 percent).

Table 7.5 Birthplace by Sex: 1980
Table inserted here.

Figure 7.4 Non-CNMI Born by Sex: 1980
Figure inserted here.

The population born in the Philippines was also the most maldistributed by age (Table 7.6). More than 28 percent of that population was 35 to 44 years old. The population born in the CNMI had the most regular distribution, having generally decreasing numbers with age. The median ages of the various populations illustrate the age disparities. The median for persons born in the CNMI was only 15.9 compared to 19.6 for the total population, and 35.0 for those born in the Philippines.

For the youngest ages, only the CNMI born (at 18 percent) and Guam born (17 percent) had percentages of persons under age 5 which were greater than the average for the total population. Less than 2 percent of the Philippines-born population were in this group.

Table 7.6 Birthplace by Age: 1980
Table inserted here.

Figure 7.5 Age for the Northern Mariana Islands Born: 1980
Figure inserted here. Takes one page.

Figure 7.6 Age for the Philippines Born: 1980
Figure inserted here. Takes one page.

The disparities are also seen in the percentages by birthplace for each age group (Table 7.7). Although 88 percent of the population under 5 years old was born in the Northern Mariana Islands, that percentage decreased with age to the 35 to 44 year olds, where less than half (44 percent) of that age group were born in the CNMI. In fact, for that group more than 1 in 4 were born in the Philippines, and about 7 percent each were born in the United States, Palau, and FSM. Although more than 60 percent of the 55 to 59 year olds were born in the CNMI, another 11 percent were born in the United States.

Table 7.7 Birthplace by Sex and Age: 1980
Table inserted here.

Of the 4,623 persons, not born in the CNMI, 30 percent immigrated in either 1979 or 1980. Another 22 percent immigrated in either 1977 or 1978 so more than half of the migrants arrived within 3 years of the census date. Another one-fourth of the migrants arrived between 1973 and 1976, and the last quarter arrived before 1973.

The largest group of migrants was, as noted previously, persons from the Philippines. Of these, 37 percent arrived in either 1979 or 1980. Since another 20 percent arrived in 1977 or 1978, significantly more than half of the

Philippines born had arrived in the three years before the census. Another 28 percent arrived in 1973 through 1976, so very few of those born in the Philippines were long-term migrants.

Table 7.8 Year of Immigration by Birthplace: 1980
Table inserted here.

Persons born in the United States ere also recent migrants, although many of these were probably contract workers who would be returning to the United States after their terms were up. Residents from Guam were more intermediate migrants. But persons from Palau and FSM were among the long term migrants. Fully 16 percent of the migrants from FSM - about 1 in 6 migrated to the CNMI before 1950; of course, many of these migrants were Carolinians from the outer islands of Yap and Truk who came to the CNMI to join relatives already on island. More than 3 or every 10 migrants from FSM and almost that proportion from Palau arrived in the Commonwealth before 1970.

Figure 7.7 Year of Immigration: 1980
Figure inserted here. Takes one page.

Table 7.9 shows the data with some of the years collapsed. In the 5 years before the census, 63 percent of the migrants arrived, and another 22 percent arrived in the previous 5 years. More than 7 of 10 persons from the Philippines and "Other places" and almost 8 of 10 from the United States arrived in the 5 years before the census. Almost half of the migrants from Palau and the Federated States of Micronesia also arrived during that period.

Table 7.9 Year of Immigration by Birthplace: 1980
Table inserted here.

In recent years, the Philippines has provided the largest proportion of the migrants. As noted earlier, about 1 in 3 migrants in the CNMI in 1980 were from the Philippines. More than 1 in every 3 migrants between 1975 and 1980 were from the Philippines; this was also true for the period between 1970 and 1974 (Table 7.10).

In earlier years, Micronesians were larger proportions of the migrants. For immigrants living in the CNMI in 1980 and having migrated between 1960 and 1969, more than 1 in every 4 was from Palau. Almost half of the migrants between 1950 and 1959 were from FSM, and more than half of those who migrated before 1950 were from the Federated States.

Table 7.10 Year of Immigration by Birthplace: 1980
Table inserted here.

Figure 7.8 Year of Immigration by Birthplace, 1975-1980:
1980
Figure inserted here. Takes one page.

About 72 percent of all known births for people living in the CNMI in 1980 were for people born in the CNMI (Table 7.11). (The percents are slightly different from those above because persons not reporting their place of birth are not included here although they appear in the total column).

As noted earlier, there was generally an inverse relationship between age and proportion CNMI born. There was also generally an inverse relationship between age and percentage arriving between 1975 and 1980, but with some exceptions. That is, for the most part, the older the migrant, the more likely he or she was to have arrived between 1975 and 1980. Of course, all of the migrant children between 0 to 4 should have arrived between 1975 and 1980 (although the data show some editing problems here. There are similar editing problems for some of the other young people as well).

About 4 of every 5 of the 25 to 29 year old migrants, however, arrived between 1975 and 1980, and then the proportions decrease with age to 22 percent for those 65 years old and over. The peak age group for the migrants

arriving between 1970 and 1974 was 45 to 54 years old.

Table 7.11 Year of Immigration by Age: 1980
Table inserted here.

As would be expected, the oldest migrants arrived the earliest. Almost 1 in every 4 migrants 55 to 59 arrived before 1950, as did more than 1 in 3 of those 60 to 64, and more than half of those 65 years and over.

Finally, there was also an inverse relationship between length of stay in the Northern Mariana Islands and labor force participation, that is, the longer time since arrival in the CNMI, the less likely a person was to be in the labor force, although migrants were generally more likely to be in the labor force than native born.

While 57 percent of the CNMI-born persons 16 years and over were in the labor force, more than 74 percent of migrants participated in the labor force. More than 77 percent of those who migrated between 1975 and 1980 were in the labor force, as were 76 percent of those who migrated between 1970 and 1974. Less than half of the migrants who arrived before 1950 were in the labor force, but as we just noted, many of these were 65 years and over, so would very likely be retired.

Table 7.12 Year of Immigration by Labor Force Participation: 1980
Table inserted here.

Figure 7.9 Year of Immigration by Labor Force Participation: 1980
Figure inserted here.

PARENTAL BIRTHPLACE

Data on parental birthplace provides information about generational migration. More than 71 percent of the population in the Commonwealth in 1980 was born here. In addition, 54 percent of the population was born in the Northern Marianas with both parents also born in the CNMI; that is, more than half the people were born in the Northern Marianas and their parents were also born in the CNMI (Table 7.13). In another 13 percent of the cases, the individual was born in the CNMI, and one of his or her parents was also born in the Commonwealth.

Table 7.13 Place of Birth of Parents and Own Birthplace: 1980
Table inserted here.

Of the 28 percent of the population born outside the CNMI, most had parents born in the same areas; more than 23 percent of the total were in this category (and 87 percent of all those born outside the CNMI). Another 4 percent of the total population were born outside the CNMI and had parents born in different places.

The distribution for Saipan was similar to the distribution for the whole Commonwealth. The distribution for the Northern Islands was affected by its small population and distance from other islands - 99 percent were born in the CNMI, and 95 percent of them had both parents born in the CNMI.

Rota was somewhat more homogeneous. More than 80 percent of the persons on Rota in 1980 were born there, and almost 3 of 4 had both parents born in the CNMI as well. Only 6 percent had one parent born outside the CNMI and less than one percent had both parents born outside if the individual was born in the CNMI.

For Tinian, the 1980 census information is somewhat more problematic. A large number of Chamorros were living on Yap and Palau under Japanese occupation during World War II, and had children there who later moved back. The data in Table 7.13 show some of the results of this movement. Only 43 percent of the individuals on Tinian in 1980 were born in the CNMI and had both parent also born there. Fully 1 in 5 were born in the CNMI

but had only one CNMI-born parent, with the other born elsewhere; 1 in 10 were born in the CNMI and had one CNMI-born parent and the other born in the Federated States of Micronesia (in most cases this was Yap.)

Similarly, 8 percent of the Tinian population were born in the CNMI and had both parents born elsewhere, including 6 percent of the total Tinian population who were born in the CNMI but who had both parents born in FSM, again, most of these being born on Yap.

More than 96 percent of the persons born in the CNMI also had fathers who were born in the CNMI (Table 7.14). The second largest percentage was for Yap; of the 396 persons with fathers born on Yap, about 2 out of 3 of these persons were born in the CNMI themselves. Guam was third at 65 percent. On the other had, only 15 percent of the persons with fathers born in the Philippines were born in the CNMI, that is of those persons living in the CNMI in 1980 but with fathers born on Philippines, most were not born in the CNMI themselves (presumably they were also born in the Philippines, except for very young people.)

For the persons with fathers born in the Philippines, in fact, 96 percent were themselves born in the Philippines, the largest percentage for the non-CNMI born. More than 93 percent of the Trukese and 92 percent of the Marshall Islanders were also in this category. On the other hand only 74 percent of the Kosraeans had this agreement of own and father's birthplace, and 78 percent of those for Guam.

Table 7.14 Father's Birthplace by Own Birthplace: 1980
Table inserted here.

The data for mother's birthplace were similar. More than 96 percent of the persons born in the CNMI also had mothers who were born in the CNMI (Table 7.15). Once again, the second largest percentage was for Yap; of the 419 persons with mothers born on Yap, about 2 out of 3 of these persons were born in the CNMI themselves. Guam was third at 61 percent. Only 8 percent of the persons with mothers born in the Philippines were born in the CNMI, and only 7 percent of those with mothers born in the United States.

For the persons with mothers born in the Philippines, in fact, 97 percent were themselves born in the Philippines, the largest percentage for the non-CNMI born. More than 94 percent of the Trukese and those born in the United States and 93 percent of the Marshall Islanders were also in this category. On the other hand only 69 percent of the Kosraeans had this agreement of own and mother's birthplace.

Table 7.15 Mother's Birthplace by Own Birthplace: 1980
Table inserted here.

RESIDENCE IN 1975

Residence in 1975 was collected for all persons 5 years and over since younger people would not qualify for inclusion. Residence in 1975 is used to measure short term migration compared to place of birth which measures long term migration, and has no set period of reference.

More than half of the CNMI population in 1980 lived in the same house (or on the same housesite) as in 1975 (Table 7.16). Another one-fourth lived in a different house, but still in the CNMI 5 years before the census, with most of them living in the same island. About 1 in every 6 persons lived outside the CNMI in 1975 but were in the CNMI in 1980.

Table 7.16 Residence in 1975 by Island: 1980
Table inserted here.

Almost 7 percent of the population had lived in Asia in 1975 and had moved to the CNMI in the intervening 5 years, once again illustrating the important impact of the recent migration from this area. Almost 6 percent of the population had lived in the Philippines in 1975 and in the CNMI in 1980. As noted earlier, these are two points in time; people could have lived in the CNMI in 1975 and again in 1980, and may have moved around in between, but

the census cannot measure this type of migration.

The data for Saipan were similar to the data for the whole Commonwealth. Although the same proportion were living in a different house in 1975, a small proportion were on a different island than the average for the CNMI. These data were offset by those of Rota and particularly Tinian. About 6 percent of Rota's population lived on a different island in the CNMI in 1975 as 1980, and, at least if the census data are reliable, 31 percent of those on Tinian in 1980 lived on a Different island in the CNMI in 1975.

As with the data on birthplace, Rota's population moved the least. Almost 2 out of every 3 Rota residents in 1980 lived in the same house in 1975 (this was also true for almost 90 percent of those in the Northern Islands).

Although 16 percent of the CNMI population lived outside the CNMI in 1975, the percentage were very different for the islands. More than 17 percent of Saipan's population lived elsewhere in 1975, as for 14 percent of Tinian's, but only 7 percent of Rota's population.

Some information about three-point migration can be obtained by crossing birthplace and residence in 1975 for the CNMI resident population in 1980 (Table 7.17). About 2 of every 3 persons born in the CNMI and living there in 1980 resided in the same house in 1975 as in 1980. Another 1/4th lived in another house, but in the CNMI in 1975.

More than half of those born in Guam and living in the CNMI in 1980 were also living in the Commonwealth in 1975. About 44 percent of the total Guam-born population were living in the same house in 1975 as 1980, and 12 percent were living elsewhere in the CNMI. Similarly, almost 3 out of every 4 persons born in Palau and living in the CNMI in 1980 were also living there in 1975, with somewhat more than 1/3 of the total Palau born living in the same house, and about 1/3 living in a different house in the Commonwealth.

Once again, of the major immigrant groups, Philippines showed the most recent migration and the strongest migration stream. Only 1 in 6 of those persons born in the Philippines but living in the CNMI in 1980 lived in the same house in 1975. Another 1 in 4 lived in a different house in the CNMI in 1975, so that only about 4 of every 10 persons born in the Philippines but living in the CNMI in 1980 was also living there in 1975. More than half were still living in the Philippines in 1975, showing the extent of the recent migration and the implications for planning in the CNMI.

More than 2 of every 3 persons born in the United States were living outside the CNMI in 1975, indicating that most of the U.S. born were not essentially CNMI persons who went to the U.S. for some reason, had children, and then returned.

Table 7.17 Birthplace by Residence in 1975: 1980
Table inserted here.

About 69 percent of the CNMI population 5 years and over were born in the CNMI (Table 7.18). Fully 85 percent, however, of the persons living in the same house in 1975 as 1980 were born in the CNMI, and were 70 percent of those living in a different house in 1975 were born in the Commonwealth.

Only 11 percent of the persons born in the CNMI lived outside the CNMI in 1975. Of those persons living in the CNMI in 1980 but on Guam in 1975, about 42 percent had been born in the CNMI; only one-third were born on guam, so it is likely that persons had gone to Guam for schooling or jobs, were there in 1975, and then returned before the 1980 census. About 19 percent of the persons living in the United States in 1975 were born in the CNMI, again suggesting that students went to the U.S. to study, and then returned after their educations were finished.

For the 1980 CNMI population, about 77 percent of those persons living in the Federated States of Micronesia in 1975 were also born there, 84 percent of the 1975 Palau-residents were born there, as were 68 percent for the United States, and 97 percent for the Philippines.

Table 7.18 Birthplace by Residence in 1975: 1980
Table inserted here.

Table 7.19 summarizes these data for a few more groups, and also presents the point-migration data a little more explicitly. Altogether about 98 percent of the persons born in the Philippines were still living there in 1975, and then migrated to the Northern Marianas after that date.

Table 7.19 Residence in 1975 by Birthplace: 1980
Table inserted here.

For comparative purposes, it is useful to show unpublished data from the 1973 to help confirm the changes that migration is bringing to the composition of the CNMI progression. Table 7.20 shows the distribution for Saipan only of the population with known ages in the 1973 census by whether or not they were born on Saipan. Altogether about 3 out of every 4 persons living on Saipan in 1973 were born there. For the youngest groups, most were born on Saipan, but the proportion decreased with age to 30 to 34 year old group which had less than half born on Saipan, and then the percentage of Saipan born increased until the oldest ages. Although the distribution by birthplace differed in 1980 from 1973, the large influx of "foreign" workers in the middle ages remains.

Table 7.20 Residents on Saipan by Birthplace and Age: 1973
Table inserted here.

RESIDENCE IN THE UNITED STATES BETWEEN 1970 AND 1980

Data on residence in the United States between 1970 and 1980 were derived from question 16, but because the data are considered to be of questionable quality, were not shown in the printed reports. There were 947 persons over 5 years old who lived in the United States for 6 or more consecutive months between 1970 and 1980, which was 7 percent of the total population 5 years and over (Table 7.21). About one-third of these were 25 to 34 years old at the time of the 1980 census; 20 percent were 35 to 44 years old, and 18 percent were 15 to 24 years old.

Almost 42 percent of these persons who lived in the United States during the 10 years before the census lived there for 6 months to 2 years, another 21 percent lived in the U.S. for 3 to 5 years, and the others lived there for more than 5 years. Persons in the 15 to 24 year old age group spent both the least amount of time in the U.S.; more than half of this age group lived in the U.S. for less than 2 years. On the other hand, more than half the persons 45 years and over had lived in the United States for 6 or more years.

Table 7.21 Persons 5 Years and Over Who Lived in the United States for 6 or More Consecutive Months Between 1970 and 1980 by Sex and Length of Last Stay in the U.S. by Age: 1980
Table inserted here.

Only some of these persons who lived in the United States were born in the CNMI, since others were U.S. contract or other workers. Of the 947 persons living in the United States for 6 or more consecutive months between 1970 and 1980, 366 (38.6 percent) were born in the CNMI, including 216 (22.8 percent) of the males and 150 (15.8 percent) of the females (Table 7.22).

About one-third of the persons living in the U.S. in the ten years before the census arrived in the CNMI in 1979 or 1980, and another one-fourth arrived in 1977 or 1978. For those born in the CNMI, more than half of the returnees returned between 1977 and 1980. Only 47 percent of the males returned during this period compared to 55 percent of the females. More than 63 percent of those living in the U.S. during the ten years and who were not born in the CNMI migrated to the Commonwealth during the 1977 to 1980 period.

Table 7.22 Year of Return for Persons Living Away Between 1970 and 1980: 1980
Table inserted here.

Finally, more than 57 percent of the persons 5 years and over and living in the U.S. in the 10 years before the census and reporting whether or not they attended school, had attended school for the last 6 months of their stay (Table 7.23). For those 16 years and over, almost half were working at a job or business in the last 6 months of residence, and 6 percent of those reporting had been in the military (all of them male - 10 percent of the males). There is some overlap because persons were allowed to report more than one activity.

Table 7.23 Activity for Last 6 Months of Residence for Persons Who Lived in the U.S. between 1970 and 1980: 1980

Table inserted here.

The data on migration present a pattern of a rapidly changing population, particularly in the years immediately before the census when massive in migration was experienced. There is also some evidence of out-migration of CNMI-born persons since the increase in the total population of CNMI born is smaller than would be expected considering the fertility rates in the Commonwealth.

Chapter 8.

Estimates and Projections

Although vital statistics data on births and deaths for the Northern Mariana Islands are currently reported accurately and completely, migration data are not collected regularly, so that population change between censuses is difficult to measure. The Census Bureau makes yearly estimates of the CNMI population using available data (Series P-25, No. 1009), but must account for migration in an indirect way (Table 8.1). Net migration for the April 1, 1980 to July 1, 1986 period was estimated for the recent report on revised migration estimates for the period 1973 to 1980. The estimates for July 1, 1980 through 1986 were derived by adding the components of population change to the 1980 census count. Since net migration is computed as a residual and vital statistics are still likely to be slightly underreported, the residual probably includes underreported births and deaths to a much greater extent than in other areas.

Because of the Northern Mariana Islands population's size and composition, it is difficult to develop appropriate estimating procedures. The poor quality and absence of adequate data make it difficult to prepare accurate estimates. For the Northern Marianas, the estimates have been based on a special estimating method which yields point estimates of the various subcategories of the population. This method was in error in 1980 of 1,794 persons more than the census count in 1980; this was about 11 percent of the population. Likely explanations for this error include the lack of accurate migration data as well as conflicting information on persons who were born in the 50 States and on special populations employed in the current methodology. Also, there have been non censuses or surveys during the intercensal period, posing serious problems in estimating the Northern Marianas population.

Table 8.1 Estimates of the Population: 1980 to 1986
Table inserted here.

Table 8.2 shows the rates derived from the actual births and deaths during the period since the 1980 census. The rates are obtained by dividing the calendar years births by the midyear population estimate. Since the midyear estimate is based on previous years' values, denominator errors are at least additive. The average birth rate over the period was 3.6 percent, and the average death rate was .6 percent, making the annual growth rate 3 percent. The residual net migration was a constant, so the percentage would decrease over time; however, for the period considered here the rate was approximately - .4 percent, indicating that there was net outmigration each year - that more Northern Marianas born persons left the islands than migrants from other places arrived.

Table 8.2 Estimated Rates: 1980 to 1986
Table inserted here.

We have made crude population projections on the basis of these rates (Table 8.3). The Census Bureau estimated the mid-year 1980 census population to be 16,780, based on the births and deaths, and residual migration between April 1 and July 1, 1980.

We have made a series of projections using different assumptions. In the first data column in Table 8.3, we have assumed no migration for the Commonwealth, and have used the growth rate determined for the 1980 to 1986 period - 3.0 percent. Under these assumptions, the July 1, 1985 population would have been 19,000, and the population would grow to 30,500 by the year 2000.

If we use the same assumptions that the Census Bureau used in making its estimates for 1980 to 1986, a net outmigration of about .4 percent was assumed, with the estimated growth rate of 3.0 percent. In this case the population would have been 19,200 in 1985 (the value differs from that determined by the Census Bureau because we are using averaged rates and the Bureau used actual figures), and by 2000 the population would be 28,200.

The third column gives a series assuming that rather than net outmigration, there will be net immigration at

the same rate. That is, rather than more CNMI-born persons leaving than immigrants arriving, that the opposite will be true, that more immigrants will arrive than residents departing. This scenario will happen if the economy of the CNMI invites immigrants to settle and work in the CNMI. There is considerable evidence for this, at least in the late 1970s, since the rate of increase for persons born in the Northern Mariana Islands between 1973 and 1980 was only 6 percent compared to 46 percent for the migrants. Under these assumptions, again assuming a constant growth rate, the population in 1985 would have been 19,960 in 1985, and would grow to 32,960 in 2000.

The final assumption assumes a declining birth rate to 3.0 percent rather than 3.5 percent; however, the decrease is assumed to be immediate and constant throughout the period (which would represent an average decline). The last column also assumes outmigration of .4 percent per year. The fertility decline assumption without migration would also be approximately be met by column 2, if fertility were substituted for outmigration.

For the 4th assumption; the 1985 population would have been 18,740, and the population in the year 2000 would be 25,600.

Figure 8.1 Population Estimates: 1980 to 2005
Figure inserted here.

Table 8.3 Projected Populations: 1980 to 2005
Table inserted here.

These projections are crude, at best, and make generous assumptions about changes in the Northern Marianas population. In the absence of continuing surveys, it is difficult to obtain intercensal estimates which are vital in making anything more than the rough estimates and projections presented here.

Chapter 9.

Housing Characteristics

The Commonwealth of the Northern Mariana Islands was included in the decennial housing census in 1970 for the first time. Unfortunately, as noted earlier, the 1970 had incomplete coverage, so it was only in 1980 that complete housing data were collected. No housing data were collected in the 1973 census. Some housing data were also collected in the 1967 Peace Corps census, but most of these cannot be used for comparative purposes.

Housing characteristics are important because they provide data on the conditions of housing as well as socio-economic indicators for the CNMI. By looking at data between censuses we can study material progress in the Commonwealth. In this chapter we will be looking at four general topics: Structure Characteristics, Plumbing Facilities, Socio-economic well being as measured by material goods in the house, and Financial Characteristics.

STRUCTURAL CHARACTERISTICS

Structural characteristics include the number of units in the structure, the material of the walls and roof, number of rooms and bedrooms, when the structure was originally built, and when the householder moved into the housing unit.

Although the 1970 census probably undercounted both the population and the number of housing units, numbers and percents have been presented here for comparative purposes. We are assuming that if there was an undercount of housing units in 1970, the undercount was proportional, that is, the characteristics of the enumerated housing units are about the same as the proportions that were not enumerated.

The 3,373 year-round housing units in 1980 were 111 percent more than the 1,598 units enumerated in the 1970 census (Table 9.1). The percent of single, detached units remained about the same in 1980 as in 1970, and the percentage change was also about the same as for all units. About 9 out of every 10 housing units in the CNMI in both 1970 and 1980 were single, detached units. A second type of structure is a single unit attached to another, non-housing unit; this type of structure often occurs for doctors who reside adjacent to their offices, or storekeepers who live behind their stores. Although the number of these units increased between 1970 and 1980, their proportion of all units decreased during the period to about half of the 1970 percent. Although about 4 percent of all housing units in 1970 were single units attached to a non-housing unit, this was true for only about 2 percent in 1980. The percent of 2-unit structures - structures with 2 housing units - also decreased during the period by the same percentage, from about 4 percent in 1970 to 2 percent during the 10 year period.

On the other hand, although there were only 5 structures in 1970 for 3 or 4 households, there were 67 in 1980, an increase of 1200 percent. Similarly, the number of housing units enumerated in structures having 5 or more units increased from 27 to 148 during the 10 year period (450 percent); it is important to note that if a structure had 5 units, and each one was being used, the same structure would be included 5 times (and the characteristics would be included 5 times as well.)

Boats were not included as housing units until 1980. Only 1 boat housing unit was enumerated in the 1980 census. On the other hand, the number of mobile homes increased from 2 in 1970 to 9 in 1980, but the percentage of all households living in mobile homes was still miniscule.

Table 9.1 Units in Structure: 1970 and 1980
Table inserted here.

As would be excepted, Saipan had the largest number (2895) and percent (85.8 percent) of all year-round housing units in the CNMI in 1980. There were 285 units (8.4 percent) on Rota, 179 (5.4 percent) on Tinian, and 14 (.4 percent) in the Northern Mariana Islands of Anatahan, Pagan, and Agrigan, the only inhabited islands in 1980

(Table 9.2). In the Northern Islands, al 14 housing units were single, detached units. For the other islands, the proportion of single, detached units was remarkably consistent across the islands at 89 to 90 percent. The percent of single units attached to non-housing units was also consistent at 2 percent for these three islands, as was the same 2 percent for structures with 3 or 4 housing units. Although Rota had a smaller proportion and Tinian a larger proportion of 2 unit structures, and Rota had a greater percentage and Tinian a smaller percentage of 5 or more unit structures, the absolute numbers being so small that the percentage difference were statistically insignificant. The single boat was in Saipan, and 7 of the mobile homes were on Saipan, while the other 2 were on Tinian in 1980.

Table 9.2 Units in Structure by Municipality: 1980
Table inserted here.

Data on material of outside walls were not collected in the 1970 decennial census. These data were collected in the 1967 Peace Corps census, however. In 1967, 1,640 units were enumerated, so there was an increase of 1,733 units over the 13 year period (Table 9.3). Since there were only 1,598 units enumerated in the 1970 census, there is some evidence that the 1970 census undercounted the total number of housing units, although the 1967 and 1970 censuses may have used different definitions of housing units.

In 1967 there was a single category for "concrete" walls, while in 1980 there were two categories - poured concrete, and concrete blocks. The number of housing units having concrete walls increased from 272 in 1967 to 1408 in 1980, an increase of more than 400 percent, about 4 times the percentage increase for all units during the period. Also, although units with concrete walls comprised only 8 percent of the total housing inventory in 1967, in 1980 about 42 percent of all housing units had concrete walls. Of the total housing units in 1980, 35 percent were concrete blocks and 7 percent were pour concrete. The percentage of housing units having metal walls also increased tremendously, from 11 percent in 1967 to 32 percent of all housing units in 1980. Although there were only 183 units with metal walls in 1967, by 1980 there were 1068 (an increase of more than 480 percent).

On the other hand, the number of units with wood walls decreased from 1155 to 895 (22.5 percent) during the period, and the percentage of housing units having wood walls decreased from 70 percent to 26 percent. That is, although 7 of every 10 housing units in 1967 had wood walls, in 1980 only 1 in 4 units had walls of this material. These figures clearly indicate the enormous improvement in the housing inventory between 1967 and 1980.

Table 9.3 Material for Outside Walls: 1967 and 1980
Table inserted here.

The data by island for 1980 also show the relationship between technological modernization, and housing structure. For example, in 1980, the Northern Islands, the most isolated and least modernized of the islands, had 12 units with metal walls and 2 units with wood walls (Table 9.4). Although about 7 of every 10 units on Tinian still had metal walls in 1980, 1 in 6 already had concrete walls. On the other hand, almost half of the units on Rota (48 percent) had concrete walls, partly because of a great deal of new construction on the island in recent years (see table 9.14). The data for Saipan are more mixed because of the mixture of old and new housing on the island.

Table 9.4 Material for Outside Walls by Municipality: 1980
Table inserted here.

Figure 9.1 Material of Outside Walls: 1967 and 1980
Figure inserted here. Takes one page.

Another measure of the housing inventory is the material used for the roof. In both 1967 and 1980, the majority of housing units had metal roofs. In 1967, 1405 units (86 percent of all units) had metal roofs, compared to 2019 (60 percent) in 1980; the increase in units was 44 percent (Table 9.5). However, the largest increase proportionately was in concrete roofs which increased from 149 to 1125 (655 percent) during the 13 year period. By 1980, about 1 in 3 of all roofs in the CNMI were made of concrete, compared to less than 1 in 20 in 1967.

Table 9.5 Material for Roof: 1967 and 1980
Table inserted here.

In 1980, all of the roofs in the Northern Islands were made of metal (Table 9.6). As with the walls, the data for Tinian were the most transitional; although 87 percent of all the housing units had metal roofs, another 9 percent (16 units) had concrete roofs, while the remaining 4 percent had wood roofs. Roofs for Rota, like its walls, showed the recent building activity on the island. Although the percentage of metal roofs was the same as for Saipan in 1980, 41 percent of the roofs on Rota were made of concrete, compared to 34 percent on Saipan; on the other hand, although 7 percent of the roofs on Saipan were made of wood, this was true for less than one percent of those on Rota. Rota also had one house with a thatch roof.

Table 9.6 Material for Roof by Municipality: 1980
Table inserted here.

Another measure of the changing life-style on the islands is the number of rooms in the housing units. Traditionally, because so much of the daily activities such as fishing and horticultural activities, occurred outside the house, houses were simple, and generally were made only large enough for all persons to have a place to sleep at night. With Westernization, more room was now desired, both to have areas for a kitchen and new appliances such as refrigerators, stoves, and televisions and VCRs, but to separate activities and give more privacy.

Between 1970 and 1980 the absolute number of housing units with only 1 room and with 2 rooms actually decreased (Table 9.7). One room housing units decreased 11 percent during the decade, and 2 room units decreased 9 percent. Although 33 percent of all the units in 1970 consisted of one or two rooms, this percentage decreased to only 14 percent in 1980. The increase in the number of 3 room housing units was somewhat less than the increase for all the units between 1970 and 1980.

It is in the larger units that the largest increases were seen. The number of 4 room units increased from 274 to 886 units (223 percent), and the number of 5 room units increased from 247 to 852 units (245 percent). Each of these was more than one fourth of all the units in 1980, so together they made up about one-half of all the units, compared to about one third in 1970. Larger housing units also experienced increases in both their absolute counts, and percentage increases. The median number of rooms increased from 3.3 rooms per unit in 1970 to 4.1 in 1980, and increase of 24.2 percent, or about one room.

Table 9.7 Rooms in Structure: 1970 and 1980
Table inserted here.

Hoising units on Rota and Saipan were only slightly larger than those on Tinian and the Northern Islands in 1980 (Table 9.8). While the median number of rooms on Tinian and the Northern Islands was 3.5 rooms per unit, the median was 4.1 on Saipan and 4.2 on Rota. Ten of the units in the Northern Islands had 3 or 4 rooms, while 2 had fewer and 2 had more rooms. On Tinian the largest numbers of units had 4 or 5 rooms. On Rota about one-fourth of the units had 5 rooms while one-fifth had 4 rooms and another one-fifth had 3 rooms; the data for Saipan were smaller, but with a larger proportion of 4 room units.

Table 9.8 Rooms by Municipality: 1980
Table inserted here.

Until now, we have been considering all year-round units. Some of the housing data are presented for all year-round units, and some are presented for occupied units only. Since some units are vacant, data on persons per unit is presented only for occupied units. In 1980, 3,028 of the 3,373 (89.8 percent) of all year-round housing units were occupied, compared to 1,517 of the 1,598 (94.4 percent) in 1970 (Table 9.9). The increase for occupied units was 93 percent compared to the 111 percent for all year-round housing units. It should be remembered that in the Pacific Islands, definitions of "Vacant" are more problematic than on the mainland because housing units which many mainlanders might not find habitable, are considered habitable in the islands. Also, since much less construction is needed, with neither heating nor cooling as necessary considerations, housing construction is simpler

and easier in the islands.

Housing was more crowded in 1970 than in 1980, with the median number of persons per unit decreasing from 6.2 to 5.4. However, except for the category "8 or more persons" per unit, all other categories increased by more than 100 percent during the decade. The last category remained the largest, both in absolute numbers and as a percentage of all units, but the percentage of units with 8 or more persons decreased from 36 percent in 1970 to 20 percent in 1980. This decrease in units with more than 7 persons probably indicates the changing life-style in the CNMI to one which is very gradually leaving the traditional and joining the middle-class ideal presented by the American Administration for so long. As the number of rooms per unit is increasing, the number of very large families and households is decreasing. Other data in this report show a decrease in the number of extended families and an increase in the number of nuclear families (see Chapter 3), and the housing data also show this trend.

Except for the "8 or more persons" category, all other categories increased as percentages of the total housing inventory. For units with more than 3 persons, the percentage increase was directly proportional to the number of persons in the unit. That is, while the number of units with 4 persons increased 130 percent, those with 5 persons increased 146 percent, those with 6 persons 152 percent, and those with 7 persons 204 percent. Therefore, although the trend is away from very large households, there were still a very large proportion of moderately large households in the CNMI in 1980.

Table 9.9 Persons in Units: 1970 and 1980
Table inserted here.

Table 9.10 shows that except for the Northern Islands, about one-fifth of the occupied housing units on each of the islands had 8 or more persons in 1980. (In the Northern Islands 8 of the 13 occupied housing units had 8 or more persons.) The medians were also about the same for the three islands - 5.3 persons per unit for Saipan, 5.7 for Rota, and also 5.7 for Tinian.

Table 9.10 Persons per Unit by Island: 1980
Table inserted here.

The change in the life-style in the CNMI is also seen in the number of persons per room (table 9.11). While more than half of all housing units in 1970 had 1.51 or more persons per room, only about one-third of the units were this crowded in 1980. All of the other categories increased during the period, both percentage increase, and as a proportion of all categories. Although the number of units with 1.51 of more persons per room increased by 19 percent during the decade, units with .51 to .75 persons per room, and 1.01 to 1.50 persons per room increased by more than 200 percent during the decade.

Table 9.11 Persons per Room: 1970 and 1980
Table inserted here.

Although about one-third of all occupied housing units in the CNMI in 1980 had more than 1.50 persons per room, the figure was slightly higher for Rota and slightly lower for Tinian (Table 9.12). (For the Northern Islands, 10 of the 13 occupied housing units had 1.50 or more persons per room). At the other extreme, Rota also had the highest proportion of housing units with less than .51 persons per room.

Table 9.12 Number of Persons per Room by Island: 1980
Table inserted here.

Figure 9.2 Persons Per Room: 1970 and 1980
Figure inserted here. Takes one page.

The number of bedrooms in units was asked for the first time in 1980. About 5 percent of all units had no bedrooms at all, which is consistent with the more traditional pattern of having only living areas without defined rooms for various activities. About one-third of the units had 2 bedrooms, and another third had three bedrooms in

1980.

Table 9.13 Bedrooms by Municipality: 1980
Table inserted here.

As noticed earlier, Rota was experiencing a building boom about the time of the 1980 census. Fully 13 percent of Rota's housing was constructed in 1979 or 1980, on the basis of the 1980 census. (Although 3 of the 14 housing units in the Northern Islands were constructed during this period, all of these were metal structures.) About 9 percent of all housing in the CNMI was constructed during the most recent period before the census. Of the three major islands, Tinians's housing was oldest; only 7 percent of the houses were constructed in 1979 or 1980, while 50 percent were built between 1950 and 1969. Only 19 percent of the houses on Tinian were built between 1975 and 1978 compared to 24 percent on Saipan, and 28 percent on Rota (more than 40 percent of all of Rota's houses were built between 1975 and 1980.) It is important to note that less than 1 percent of all houses were built before 1940, showing both the affects of the sea and sun, as well as the bombing and other activities during World War II. Many Federal agencies request information on numbers and percent of housing constructed in 1939 and before and are frequently surprised by the small number of these units.

Table 9.14 Year Structure Built by Municipality: 1980
Table inserted here.

Altogether, 32 percent of the householders in the CNMI had moved into their units in 1979 or 1980 (Table 9.15). Another 34 percent moved in between 1975 and 1978 so almost two-thirds moved in between 1975 and 1980. Rota's householders were the longest term residents in their current homes; only 19 percent moved in in 1979 or 1980 while 11 percent moved in in 1959 or earlier (compared to 6 percent for the whole commonwealth). Although 14 percent of all householders in CNMI moved in between 1960 and 1969, this was true for 23 percent of those on Tinian. Most of the householders on the Northern Islands had moved into their units relatively recently, but this phenomenon has something to do with the type of traditional house construction on these islands; when houses are constructed of less technologically complex materials, they wear out faster, so new houses are built, and householders move into these houses closer to census date.

Table 9.15 Year Householder Moved into Unit by Island: 1980
Table inserted here.

In this monograph, we are not considering the differences between owner-occupied housing units and renter occupied housing units because the definitions the U.S. Bureau of the Census used for the mainland census did not always apply in the Commonwealth of the Northern Mariana Islands (Table 9.16). If a family builds a house on communal land, paying only for the materials, and lives in the unit, the Census Bureau considers that house as being renter-occupied without payment of cash rent because no mortgage or other bank or other payments are involved. There were 697 of these units in 1980 (23 percent of the total). If these units are included with rental units, then about 60 percent of all occupied housing units in 1980 were "owner-occupied". The percent of owner-occupied units varied from 73 percent for Rota and 11 of the 13 units in the Northern Islands, to 63 percent for Tinian and 58 percent for Saipan.

An average of 5.4 persons lived in all occupied units in 1980; of these the average for owner-occupied units was 6.2 persons per unit and the average for renter-occupied units was 4.2 persons. The average for renter-occupied units was 5.2 on Tinian, probably because of the large dairy farm requiring more crowded conditions for persons working at the farm (but living in households rather than in group quarters - which are excluded from these calculations.) On the other hand, the average persons per unit in "owner-occupied units in the Northern Islands was 9.2 persons (probably because the enumerator here placed these units in the owner rather than renter occupied status.)

Table 9.16 Tenure and Persons per Occupied Housing Units: 1980
Table inserted here.

The change in plumbing facilities shows specific as well as general changes in the living conditions in an area. The Commonwealth of the Northern Mariana Islands is no exception.

The percent of housing units with complete plumbing doubled between 1970 and 1980, from about 1 in 4 units to 1 in 2. The percents in the subcategories also doubled, with units with both hot and cold running water increasing from 15 to 30 percent (so that 3 in every 10 housing units in the CNMI in 1980 had hot and cold running water), and units with only cold running water increasing from 9 to 20 percent.

Table 9.17 Plumbing Facilities: 1970 and 1980
Table inserted here.

Figure 9.3 Plumbing Facilities: 1970 and 1980
Figure inserted here.

Data for the different islands varied considerably. Only 2 of the 14 units in the Northern Islands had complete plumbing in 1980 (Table 9.18). Of the three major islands, Saipan had the largest percentage of complete plumbing with 52 percent, followed by Rota with 41 percent, and Tinian with only 31 percent. Fully 11 percent of the units on both Tinian and Rota had no plumbing facilities at all (compared to 7 percent for Saipan.) Also, although 2 percent of the units on Saipan had complete plumbing with only cold running water, this was true for 19 percent of the units on Rota and 21 percent of those on Tinian.

Table 9.18 Plumbing Facilities by Municipality: 1980
Table inserted here.

The percentage of units with hot and cold water almost doubled between 1970 and 1980, from 17 percent to 32 percent (Table 9.19). On the other hand, the percent of units with no piped water at all also increased during the period, from 5 percent to 8 percent. This phenomenon might be partially explained by the tremendous growth in the Commonwealth during the period, with facilities not keeping up with population growth and pressure on resources.

Table 9.19 Water Supply: 1970 and 1980
Table inserted here.

In 1980, 9 of the 14 units in the Northern Islands were recorded as having hot and cold water (all 9 being heated by electricity) (Table 9:20). The trend for the other islands follows the other trends for plumbing. Essentially no other means besides electricity was used to heat hot water - gas was used by only 3 units, and solar energy by another 2. About 12 percent of the units on Tinian had hot and cold piped water, compared to 23 percent for Rota, and 34 percent for Saipan. Once again, 12 percent of the units on Rota and 11 percent of those on Tinian had no piped water at all, compared to 8 percent on Saipan.

Table 9.20 Water Supply by Island: 1980
Table inserted here.

About 57 percent of year-round housing units in the CNMI in 1980 had a bathtub or shower either in the housing unit, or outside (Table 9.21). For the Northern Islands, 9 of the 14 housing units reported having a bathtub or shower, presumably the same 9 units with hot and cold piped water. For the other three islands, Saipan had the largest percent with a bathtub (59 percent). Less than half of the housing units on Rota and Tinian had a bathtub or shower; 44 percent on Rota and 40 percent on Tinian. Presence of a bathtub or shower is a housing indicator, showing transition from traditional to contemporary life-style.

Table 9.21 Bathtub or Shower by Island: 1980
Table inserted here.

More than half of all housing units in the CNMI in 1980 had a flush toilet inside the housing unit, compared

to only about one-fourth in 1970 (Table 9.22). In fact, although only 393 units in 1970 had a flush toilet inside the unit, by 1980, 1784 units fell in this category, an increase of 354 percent. All categories showed increases, but all of the other categories showed smaller increases, and all were smaller percentages of the total for the CNMI. The largest decrease was in the category "outhouse or privy" which decreased from 61 percent of the units in 1970 to only 36 percent of the units in 1980. Altogether 61 percent of the units in 1980 had a flush toilet either inside or outside the unit, compared to only 35 percent in 1970.

Table 9.22 Toilet Facilities: 1970 and 1980
Table inserted here.

Figure 9.4 Toilet Facilities: 1970 and 1980
Figure inserted here.

There was a direct relationship between population size and presence of a flush toilet by island. Of the 14 units in the Norther Islands, only 2 had flush toilets, and all of the others used an outhouse. Almost 6 out of every 10 housing units on Tinian still used a privy, compared to only about 4 of 10 on Rota and 1 in 3 on Saipan. On the other hand, more than half of all the units on Saipan in 1980 had a toilet inside the building, a figure which probably shows the direction for the whole CNMI over the next few years. (The numbers for Rota may be skewed because of the relatively large number of units reporting "other or none"; these may have been units under construction which did not yet having plumbing - the figures reported here are for all year-round housing units, not just occupied units.)

Table 9.23 Toilet Facilities by Island: 1980
Table inserted here.

The data for source of water show that the percentage of housing units connected to a public system changed very little between 1970 and 1980 (Table 9.24). The percentage of persons getting water from private cisterns or tanks decreased considerably, from 42 to 4 units during the period, as did the units obtaining water from a public standpipe (from 56 to 9 units). On the other hand, the number of units obtaining water from an individual well increased from 25 to 143 units, more than doubling its percentage of all units. The data on "other sources" are problematic, since the figure of 110 for 1980 was more than 3 percent of all units. It is not clear what the source of water was for these units, or whether these are vacant units without water.

Table 9.24 Source of Water: 1970 and 1980
Table inserted here.

All 14 of the units in the Northern Islands in 1980 obtained water from catchments, tanks, and drums (more than for Rota and Tinian combined.)

Table 9.25 Source of Water by Island: 1980
Table inserted here.

The question on sewage disposal was asked for the first time in 1980. About 1 in every 4 of the housing units in the CNMI in 1980 were connected to a public sewer, and another 3 in 10 units used a septic tank or cesspool to dispose of waste (Table 9.26). Some of the data are problematic since the 12 units on Rota and 4 on Tinian reporting connection to a public sewer are probably in error. There was no public sewer on these islands in 1980. There was no mechanical means of disposing of sewage in the Northern Islands at all. For the others, 75 percent of the units on Tinian had no mechanical means of disposal, compared to 56 percent on Rota, and 42 percent on Saipan.

Table 9.26 Sewage Disposal by Island: 1980
Table inserted here.

SOCIO-ECONOMIC INDICATORS

Housing data give a number of socio-economic indicators which help determine the relative quality of life,

how it is changing over time, and comparisons for the different islands. By looking at these data, individually and collectively, we can get some insight into the general conditions of housing on the islands and how those conditions have changed, and are likely to continue to change into the future.

The percentage of housing units with electricity remained the same (at 94 percent) between 1970 and 1980 (Table 9.27). The proportion of units with cooking facilities decreased slightly during the decade (which might be partially attributable to the large number of houses under construction at the time of the 1980 census). On the other hand, the percentage of units with a refrigerator increased dramatically, from 71 percent in 1970 to 89 percent in 1980.

Table 9.27 Electricity, Cooking Facilities, and Refrigerator: 1970 and 1980
Table inserted here.

There were large differences in source of electricity between the islands in 1980 (Table 9.28). Apparently 9 of the 14 units in the Northern Islands were connected to electricity by a "public system"; the others had no electric power. Although 6 percent of all units in the CNMI had no electric power in 1980 (and 5 percent on Saipan), 14 percent of the units on Tinian and 13 percent of the units on Rota had no electric power.

Table 9.28 Electric Power by Island: 1980
Table inserted here.

About 1 in 4 housing units in the CNMI in 1980 had air conditioning - either from a central system or individual room units (Table 9.29). None of the housing units in the Northern Islands had air conditioning, while 12 percent of those on Tinian, 16 percent on Rota, and 26 percent on Saipan had air conditioning. It should be noted that there is a high correlation between presence of electricity and air conditioning, since air conditioning is not possible without electricity.

Table 9.29 Air Conditioning by Island: 190
Table inserted here.

About 4 percent of the housing units in the CNMI in 1980 had no cooking facilities, a percentage heavily influenced by the 13 percent for Rota (which undoubtedly included a number of unfinished housing units) (Table 9.30). About 88 percent of all the units had cooking facilities located inside the building, although this was true for only 75 percent of the units on Rota (where 12 percent used outside cooking facilities). A large majority (64 percent) of units used electricity for cooking, although 11 percent used kerosene and more than 20 percent used "other" means, including 38 percent on Rota.

Table 9.30 Cooking Facilities by Island: 1980
Table inserted here.

In 1980, only 11 percent of the housing units did not have a refrigerator. Only 6 of the 13 units in the Northern Islands had a refrigerator. For the large islands, while 17 percent of the units on Rota and Tinian had no refrigerator, only about 10 percent of Saipan were without this appliance.

Table 9.31 Refrigerator by Island: 1980
Table inserted here.

Presence of a radio, telephone where telephone service is available, and a television where electricity is available also show socio-economic attainment. In 1980, about 1 in 4 housing units had a telephone, 6 out of 7 had a radio, and 7 in 10 had a television (Table 9.32).

There were no telephone on either the Northern Islands or Rota in 1980, and although 28 households recorded having a telephone in 1980, actually there was no telephone service on Tinian in 1980. About 28 percent of the households on Saipan had a telephone in 1980. Since 1980 was the first time the question was asked, no

comparative data are available.

All households in the Northern Islands had a radio in 1980. For the other islands, the percentage without a radio ranged very little, from 12.4 percent on Rota to 14.7 percent in Tinian.

Table 9.32 Telephone, Radio, and Television by Island: 1980
Table inserted here.

Data on housing characteristics on the elderly were also collected for the first time in 1980 (Table 9.34). Only 269 of the 3,028 occupied housing units (8.9 percent) had a householder 65 years or older in 1980. Of these, 80 percent were owner-occupied housing units (although the definition of "Owner" has to be considered ambiguous in light of the fact that many people construct housing on communal lands and were therefore placed in the "Renter not paying rent" category in 1980).

Summary characteristics for the elderly show differences from the characteristics for all households. For example, 54 percent of the elderly households lacked complete plumbing compared to 50 percent for all households. Similarly, although 15 percent of households in the CNMI in 1980 did not have access to a vehicle, this was true for 35 percent of the elderly households. While 14 percent of the total households had no radio, 25 percent of the elderly households were in this category. Finally, 76 percent of all households did not have air conditioning compared to 90 percent of the elderly households.

Because of the small numbers of elderly households on Rota, Tinian, and the Northern Islands, island comparisons are not possible for the elderly.

Table 9.34 Characteristics of Housing Units with Householders or Spouse 65 Years and Over by Island: 1980
Table inserted here.

Finally, a limited number of financial characteristics for housing data were collected in 1980. Altogether, value of the unit was collected for 1,229 of the 1809 owner-occupied units (90 percent) (Table 9.35). The median value of the housing in the CNMI in 1980 was $10,400. The units on Saipan had the highest value at $12,236. By 1980, 12 percent of the units on Saipan were valued at $50,000 or more.

Table 9.35 Value of Owner-occupied Housing Units by Island: 1980
Table inserted here.

Table 9.36 Contract Rent by Island: 1980
Table inserted here.

Table 9.36 shows the amount of contract rent paid for renter-occupied housing units. The median contract rent for the CNMI in 1980 was $125 and varied from $100 on Saipan to $414 on Tinian. About 11 percent of all the rent-occupied units had contract rent of less than $50, but this was true for 21 percent of the units on Rota. Of course, 57 percent of the units paid no cash rent at all.

CONCLUSIONS

The data presented here show that while the Commonwealth of the Northern Mariana Islands probably has a better housing inventory than many developing countries, there are a number of areas where improvement is still needed. While 61 percent of the housing units have flush toilets, for example, that still means that 39 percent do not. A large number of housing units still do not have kitchen facilities or complete plumbing. On the other hand, a balance must be maintained for the island ecosystem. The effects of large numbers of vehicles, central air conditioning, and frost-free refrigerators have not been adequately measured, and energy use and consumption must

be considered for planning and policy use.

Figure 9.5 Percent of Year-Round Housing Units With Air-Condition: 1980

Figure (Map) inserted here. Takes one page.

Figure 9.6 Percent of Year-Round Housing Units Built After 1969: 1980

Figure (Map) inserted here. Takes one page.

Chapter 10.

Ethnicity and Language

In Chapter 1 we traced the history of Chamorros and Carolinians in the Northern Mariana Islands from Spanish times, through the German and Japanese Administrations, and into the American Administration. In this chapter we will be looking at the current social and economic situation of the various ethnic groups in the Northern Mariana Islands, but will be spending most of the time looking more closely at the Chamorros and Carolinians.

The data on ethnicity for the 1980 Census of the Commonwealth of the Northern Mariana Islands were derived from the answers to question 4. The 1980 census marked the first time that a general question on ethnicity was asked in a decennial census. The question was based on self-identification and was open-ended (respondents were required to provide the answer). Ethnicity refers to a person's island or atoll of birth or affiliation, nationality, or country in which the person or person's parents were born. Thus, persons reported their ethnic group regardless of the number of generations removed from their country of origin. Furthermore, responses to the ethnicity question reflected the ethnic group(s) with which persons identified and not necessarily the degree of attachment or association the persons had with the particular group(s).

Ethnicity is different from other population characteristics that are sometimes regarded as indicators of ethnicity, namely country of birth and language spoken at home.

A large number of persons reported their ethnicity by specifying a single ethnic group, but some reported two, three, or more ethnic groups. All responses were coded manually by a procedure that allowed for identification of all single ethnic groups reported. In addition, selected two- and three-part combinations of ethnicity were identified by unique coded (these categories were selected since they were reported frequently in Census Bureau surveys taken prior to the 1980 census). All other multiple responses were coded according to the first ethnic category reported.

In published tabulations, multiple groups were designated in general open-mined categories such as "Chamorro and other groups," rather than in specific multiple ethnic groups such as "Chamorro-Carolinian." A persons who reported "Chamorro-Carolinian" ethnicity, for example, was included in the category "Chamorro and other groups" and in the category "Carolinian and other groups."

Chamorro was the largest ethnic group reported in the 1980 census (Table 10.1). Of the 16,780 persons in the CNMI in 1980, 9522 or 57 percent reported single Chamorro ethnicity, that is, Chamorro and no other ethnicity. Another 526 persons (3 percent) reported as Chamorro in combination with other ethnicity responses.

The second largest group was the Carolinians. In 1980, there were 2280 Carolinians identified by single ethnicity (14 percent of the total population), and 292 (2 percent) identified with some other group. Persons who identified as Chamorro-Carolinian or vice versa would have been reported twice, in both groups. In fact, since 526 of the 553 multiple responses involved Chamorro ethnicity, it is likely that most of the multiple Carolinian responses were in combination with Chamorro responses.

In 1980, 1685 persons (10 percent) of all respondents were Filipino. Almost all of the Filipinos were migrants. Although 92 percent of persons reporting single Chamorro ethnicity and 97 percent of those reporting single Carolinian ethnicity were born in the CNMI, only 6 percent of the Filipinos were born in the CNMI. Also, while Filipinos constituted 10 percent of the total CNMI population, they were less than 1 percent of the CNMI-born population, compared to 33 percent (1 out of every 3) of the population born outside the CNMI. No other group is having such a profound demographic effect on the CNMI population.

Table 10.1 Ethnicity by Birthplace: 1980
Table inserted here.

As the TTPI headquarters administration was winding down, the proportion of the population from other areas in the old TTPI was probably also decreasing, at least temporarily (the affects of the Compacts are yet to be felt in terms of returning and new migration for the higher standard of living found in the CNMI. The largest TTPI group in 1980 was the Palauans with the 735 persons making up 4 percent of the population total for the CNMI. Many Palauans were long term residents, with about 1 in 5 having been born in the CNMI. There were 129 Marshallese (1 percent of the total CNMI population), and 561 from the Federated States of Micronesia (3 percent of the total). There were 26 Kosraeans, 198 Pohnpeians, 248 Trukese, and 89 Yapese (although some of the Yapese from the Outer Islands may have been included in the Carolinian category, since Woleaian and Ulithian were coded there). Thus, the 1,425 persons from the old TTPI were 8 percent of the total population in 1980 and formed the fourth largest group.

Most of the other groups were very small. Only 60 persons were reported in the "European" categories, where Whites would be expected to be reported. It is very likely that many Whites did not report or reported an ambiguous entry and, therefore, were recorded in the "Not Specified" and "Not reported" categories.

As was usually found in the States, persons reporting multiple ethnicity responses were more likely to have been born in the CNMI, than those who reported only a single entry. Of all persons who reported a single entry, 73 percent were born in the CNMI (compared to 72 percent of all persons), while 88 percent of those reporting a multiple ethnic response were born in the CNMI. Almost all persons in the largest groups, however, were born in the CNMI. While 97 percent of the single Carolinian ethnic responses were for persons born in the CNMI as were 93 percent of the persons reporting multiple ethnic responses, 92 percent of the single Chamorros and 90 percent of the multiples were born in the CNMI.

The median age for both Chamorros and Carolinians was younger than for the population as a whole in 1980. While the median age for the whole population was 19.6 years, it was 16.5 for both Chamorros and Carolinians (Table 10.2). As noted earlier, persons reporting single ethnicity responses tended to be younger than those reporting multiple ancestry responses. So, while the median age for Chamorros reporting a single ethnicity was 17.0, the median age for those reporting Chamorro and some other group was 9.4; the comparable median ages for Carolinians were 17.4 and 11.3, respectively. On the other hand, since most of the Filipinos were migrants, with few children, the median age was higher, at 34.0 years.

While about 15 percent of the population was less than 5 years old in 1980, about 17 percent of the Chamorros and 16 percent of the Carolinians were in this age group (and only 6 percent of the Filipinos). Almost 30 percent of the multiple Chamorro ethnicity persons were under 5 as well as 24 percent of the multiple Carolinian ethnicity persons. Altogether more than half of the persons claiming multiple Chamorro ethnicity were under 10, as were 44 percent of the Carolinians.

In general, the age structure for both Chamorros and Carolinians was regular, with proportions of the population decreasing with age. The structures for the multiples were somewhat more peaked than the singles. The Filipino age structure was very different, with small number of young and elderly, and most of the people bunched in the middle. More than in every 4 Filipinos was between 35 and 44 in 1980, creating a large bulge in the age structure for the total population of the CNMI as well (more than 1 in 10 for the whole population). Almost 3 out of every 4 Filipinos, in fact, were between 25 and 54 in 1980.

Table 10.2 Ethnicity by Age and Sex: 1980
Table inserted here.

The data used to create Table 10.2 also show that the middle ages have a different distribution by ethnicity than the young and older ages. Almost 60 percent of the total CNMI population was Chamorro, 15 percent was Carolinian, and 10 percent was Filipino. For persons less than 20, more than 2/3s were Chamorro, and 1 in 6 were Carolinians (with less than 1 in 20 being Filipino). However, the proportions Carolinian and especially Chamorro decreased after that. For the 35 to 44 year age group only 2 in 5 were Chamorro, and only 1 in 10 were Carolinian, while more than 1 in 4 were Filipino. From there, the proportions of Chamorros and Carolinians increased, reaching

73 percent Chamorro and 16 percent Carolinian for the oldest group.

Of the 14,316 persons 5 years and over in 1980, 710 (5 percent) spoke only English at home (table 10.3). Most of these people were not native to the CNMI. In fact, 94 Chamorros and only 6 Carolinians spoke English at home in 1980. On the other hand, more than 5 percent of the Filipino were in this category; we cannot determine how much of this English speaking had to do with intermarriage causing English to become the language for communication.

Of the 95 percent of the population which did not speak English at home in 1980, only a small proportion spoke English. About 3 percent of the total population who spoke a language other than English at home, spoke English more frequently than that other language, but this was true for only 2 percent of the Chamorros, and less than 1 percent of the Carolinians. About 5 percent of the Filipinos spoke English more frequently than the other language. Another 14 percent of the Filipinos spoke English and the other language equally often, compared to 9 percent for the total population (and 6 percent of the Chamorros and 4 percent of the Carolinians). Although 87 percent of the total population who did not speak English at home spoke the other language more frequently than English, 90 percent of the Chamorros and 93 percent of the Carolinians were in this category. About 2 percent of the total population, the Chamorros, and the Carolinians did not speak English at all.

Table 10.3 Ethnicity by Language and Ability to Speak English: 1980
Table inserted here.

Although 64 percent of the population 16 years and over was in the labor force in 1980, this was true for only 58 percent of the Chamorros and 50 percent of the Carolinians (Table 10.4). On the other hand, 90 percent of the Filipinos were in the labor force, probably because so many were immigrants, and they had to work in order to stay in the CNMI. Also, Filipinos are not part of either traditional; Chamorro or the Carolinian culture, so they cannot rely on relatives to take care of them when they are not working.

Almost everyone in the CNMI who wanted a job could get one in 1980. The total unemployment rate was only 2.4 percent. The rate was only marginally higher for Chamorros at 3.0 percent, and for Carolinians was 3.4 percent (the rate for Filipinos was only .6 percent - only 8 Filipinos were reported as unemployed).

Chamorros were more likely than the total population or than Carolinians to take part-time rather than full-time employment. Although 6 percent of the total employed work force was working part-time, 7 percent of the Chamorros only worked part-time, compared to 4 percent of the Carolinians and 2 percent of the Filipinos.

Table 10.4 Ethnicity by Labor Force Participation: 1980
Table inserted here.

A discussion of Chamorro and Carolinian distribution in the various industries appears in Table 13.7 in the industry chapter. Table 10.5 shows the distribution for industries for single and multiple ethnicity for Chamorros and Carolinians, and for Filipinos.

For Chamorros, about 1/4 of all persons were in public administration in 1980, and this percentage was about the same for both single and multiple ethnicity Chamorros. The next largest category for the single ethnicity Chamorros was professional and related industries at 18 percent, while only 10 percent of the multiples were in entertainment and related activities compared to 11 percent of the singles, which may have something to do with the age distribution.

For Carolinians there were also some discrepancies. Although 21 percent of the single ethnicity Carolinians were in professional and related industries, this was true for only 9 percent of the multiple ethnicity Carolinians.

Figure 10.1 Ethnicity by Labor Force Participation: 1980
Figure inserted here. Takes one page.

Exactly half of the Filipinos were working in construction in 1980, compared to 17 percent of the Total population (and 7 percent of the Chamorros and 5 percent of the Carolinians). Another 15 percent were in entertainment and personal services, and 14 percent were in retail trade. Therefore, almost 80 percent of the Filipinos were in these three industry categories.

Table 10.5 Ethnicity by Industry: 1980
Table inserted here.

We have briefly described a few of the characteristics for the three major ethnic groups in the Commonwealth as of 1980. Since 1980 was the first time that a decennial census collected ethnicity data for the CNMI, these data are only a first step in analyzing the characteristics of the various ethnic groups.

Figure 10.2 Ethnicity by Industry: 1980
Figure inserted here. Takes one page.

Finally, we want to touch briefly on language use in the CNMI again (see Table 10.3). Table 10.6 shows the distribution of languages spoken by age. People between 25 and 44 years were the most likely to speak English at home (as well as persons 5 to 14, presumably the children of the former group). The age structure for Chamorro and Carolinian speakers was about the same as for the total population, while Philippines language speakers were even more bunched up in the middle ages - 28 percent were between 35 to 44, another 19 percent were 45 to 54, and 18 percent were between 25 to 34.

Table 10.6 Language Spoken at Home by Age: 1980
Table inserted here.

In this chapter we have briefly described the ethnic and language distribution of the CNMI population. The 1990 data will allow us to analyze the changes in the groups.

Figure 10.3 Speak Only Chamorro at Home by Age: 1980
Figure inserted here. Takes one page.

Figure 10.4 Speak Only English at Home by Age: 1980
Figure inserted here. Takes one page.

Chapter 11.

Education

Educational data from the 1980 census can be divided into three sets of characteristics: educational input, educational progression and educational output of the population. Educational characteristics, particularly educational attainment, play an important role in determining economic and social change, growth rates and trends of a population. Current educational activities are not always reflected because of the relatively long time span between censuses. Census data show long term trends; current published and unpublished daily, weekly, monthly and yearly information from local education agencies provide short term data for planning and decision making. Data collected from these various sources often lack comparability because of the variations in the population covered, accuracy and the definitions of data collected.

The educational system of the Commonwealth of the Northern Mariana Islands is currently the same as that used in most of the States, having developed during the period of the Trusteeship. Data on education collected in the census include school enrollment, years of school completed, literacy, and vocational education:

School Enrollment. The data on school enrollment were derived from answers to questions 7 and 8. Persons were classified as enrolled in school if they reported attending a "regular" school or college at any time between February 1, 1980 and the time of enumeration. Regular schooling was defined as pre-kindergarten, kindergarten, elementary school, and schooling which led to a high school diploma or college degree. Schooling in trade or business schools, company training, or schooling obtained through a tutor was to be reported only if the course credits obtained were regarded as transferable to a regular elementary school, high school, or college. Children were included as enrolled in pre-kindergarten only if the school included instruction as an important and integral phase of its program. Children enrolled in "Head Start" programs, or similar programs sponsored by local agencies to provide preprimary education to young children, were included as enrolled in school.

Persons who had been enrolled in a regular school since February 1, 1980, but who had not actually attended, for example, because of illness, were counted as enrolled in school. Schooling which was generally regarded as not "regular" included that given in a pre-kindergarten which simply provided custodial day care; in special vocational, trade, or business schools; in on-the-job training; and through correspondence courses.

Public, Church-Related, or Other Private School. Persons who were enrolled in school were also classified as attending a public, church-related, or other private school. In general, a 'public" school was defined as any school which was controlled and supported primarily by a government agency. A "church-related" school was defined as a private school which was controlled or supported primarily by a religious organization. An "other private" school was defined as a school controlled or supported primarily by private groups other than religious organizations.

In using the public/private school distinction for college enrollment, some caution should be exercised, since the classification of individual schools may not be entirely clear, and census data may differ considerably from administrative figures.

Level and Year of School in Which Enrolled. Persons who were enrolled in school were classified according to the level and year of school in which they were enrolled, as reported in question 8. The levels which were separately identified were pre-kindergarten, kindergarten, elementary school, high school, and college. Children in "Head Start" or similar programs were counted under "Pre-kindergarten" or "Kindergarten" as appropriate. Elementary school included grades 1 to 8, and high school included grades 9 to 12. Persons attending junior high school were reported in elementary or high school according to their grade. The term "college" included junior or community college, 4-year colleges, universities, and graduate or professional schools.

Years of School Completed. The data on years of school completed were derived from answers to questions 8 and 9. These questions on educational attainment applied only to progress in "regular" schools as

defined under the definition for school enrollment. The first question called for the highest grade attended, regardless of "skipped" or "repeated" grades. Persons whose education was received in foreign school systems or an ungraded school were expected to report the approximate equivalent grade in the regular school system. An instruction printed on the form "If high school was finished by equivalency test (GED), mark '12'" (meaning grade 12), was to ensure that persons who dropped out of school before high school graduation but later earned a diploma with an equivalency test would be counted as high school graduates. Those diploma recipients who also attended college would be credited with college attendance as reported.

The second question on educational attainment asked whether or not the highest grade attended had been finished. It was to be answered "Finished," if the persons had successfully completed the entire grade or year indicated in question 8. If the persons had completed only part of the year, had dropped out, or failed to pass the last grade attended the question was to be answered "Did not finish." If the persons was still attending school in that grade, he or she answered "Now attending." The number in each category of highest grade of school completed represented the combination of (a) persons who reported the indicated grade as the highest grade attended and that they had finished it, (b) those who had attended the next highest grade but had not finished it, and (c) those still attending the next highest grade. Persons who have not completed the first year of elementary school are classified as having no years of school competed.

For census purposes, "percent high school graduates" included persons who completed 4 years of high school by graduation or an equivalency test and persons who reported that they had attended some level or college.

Ability to Read and Write - Literacy. The data on ability to read and write were derived from answers to question 17. This question was asked of persons 5 years old and over. Ability to read and write was not limited to any particular language. Consequently, the category "Able to read and write," included persons who were able to read and write in English, Chamorro, Carolinian, Philippines languages, etc. Persons who could only rad and those who could write only their own names were classified as "Unable to read and write."

Vocational training. The data on vocational training were derived from answers to questions 20a and 20b, which were asked for the first time in the 1980 census. Persons were included in the tabulations only if they had completed the requirements for a vocational program at a trade school, business school, hospital or some other kind of school for occupational training. Vocational training was defined as a school program designed to prepare a person for work in an occupational field. Thus, training which led to certification to practice carpentry, electronics, nursing, or accounting was vocational, provided a baccalaureate degree was not granted for that training. Included as "vocational training" were formal vocational training programs received in high school, through an apprenticeship program, in a school or business in a nursing school or trade school, in a technical institute, in the U.S. Armed Forces, in the Job Corps, and in a correspondence course. Excluded from "vocational training" programs were single courses which were not part of an organized program of study, on-the-job training, and basic training in the U.S. Armed Force. Persons who had completed a vocational training program were asked to designate the kind of school where the training was received (e.g., business school, trade school, 2-year college, high school, training program at place of work).

SCHOOL ENROLLMENT

The school enrollment is dependent on the school age population of a population. The potential school age population of the CNMI - those persons 5 to 19 years old - was 36 percent of the total population in 1980 compared to 40 percent in 1973. The educational attainment of the 3 and 4 year olds was included in the 1980 census to collect data in pre-kindergarten and nursery schools. Data on persons 20 years old and above were also collected for people attending colleges and universities at older ages.

The proportion of the population which was in the compulsory school attendance age group, those 6 to 14 years old, also decreased between 1973 and 1980 (Table 11.1). As we have noted in the discussions of age, sex, and birthplace, the large number of post-school age migrants and the reduction in fertility, have affected the relative size of the school age populations. The percentage of those in the compulsory age group decreased from 27 percent to 22 percent during the 6 1/2 year period between the censuses. The percentage decrease for males was about 5

percentage points and for females was more than 6 points.

About 23 percent of Saipan's population was in the age group, as were 22 percent for Rota, 26 percent for Tinian, and 38 percent for the Northern Islands, again showing the unbalanced distribution on the Northern Islands.

Table 11.1 Compulsory School Age Population: 1973 and 1980
Table inserted here.

Educational Input Educational input is school enrollment in any regular educational institution, public and private with systematic instruction at any level during a defined time period. As noted earlier, regular school is defined by the U.S. Census Bureau as prekindergarten, kindergarten, elementary school and schooling which leads to a high school diploma or college degree. Schooling in trade or business schools, company training, or schooling obtained through a tutor was reported if the course credits obtained were transferable to regular elementary school, high school or college. Children enrolled in the Head Start program were included as enrolled in school. Vocational, trade or business courses were not recorded as regular school.

School enrollment was obtained from all persons 3 years old and older. As would be expected, there were more people reported not being in school (64.6 percent) as in school (35.4 percent) in 1980 (Table 11.2). The percentage of persons in school in the compulsory age bracket (those 6 to 14 years old) 94.2 percent compared to 5.8 percent reported as not in school. The percentage school age population (5-9) in school was slightly lower than that of the compulsory age group. Many of the children below the age of six who could have been attending kindergarten were probably at home having informal lessons or no lessons at all. Also as people reached the age of 18 they began to leave school to enter the labor force.

Figure 11.1 Persons in School 3 to 30 Years Old
by Age: 1980
Figure inserted here. Takes one page.

The crude enrollment rate for CNMI in 1980 was 32.7 percent, only 3 out of 10 persons in the CNMI were in school. The age specific enrollment rate for the compulsory age group ranged from 86.4 at 6 years old to 98.6 percent at 10 years old, and then started to decrease at the age of 15 where about 12 percent were out of school. About half of the 16 years old were not in school. After that, the older the persons, the less likely he or she was to be in school. Enrollment in college was very low, of course, simce there was no college in the Northern Mariana Islands in 1980; extension courses were possible, and some students were on leave from school or temporarily on island during the census; only 1 percent of the population 18 to 56 was in school.

Educational Progression

Children start school in different years,m depending partly on their readiness for the material, and partly on the basis of the relationship of their birthday to the legally drfined entrance age. Educational progression is the balance between (1) scholastic retardation, including school retentions and dropouts as well as the persistence of an age group in school and (2) scholastic acceleration, which is advancement, grade progression. Education input and progression are very highly correlated. If the enrollment rate at a specific age level is low because choldren are held back since they could not master the material, then scholastic retardation for that age level should be high; if choldren advance more rapidly because they master the material more quickly than expected, then acceleration rates would go up. Census data are not very useful in computing retention rates dor educational progression, but we can obtain indirect measures from the censud data by focussing on the out-of-level enrollment below or above a specific grade level; persons out-of-level create the scholastic retardation and acceleration rates for the population. These measurements commonly apply to the elementary and secondary grades.

It seems that entry level criteria were not strictly enforced, because there was considerable variation in ages for each grade. For example, children in pre-kindergarten and kindergarten ranged in age from at least 3 to 6 (Table 11.3). The variation also continued in the elementary school grades (Table 11.4) and in junior and senior high school (Table 11.5).

Although many 3 and 4 year olds were not enrolled in school for one reason or anther, more than half of the 5 years olds were either in pre-kindergarten or kindergarten in 1980, with about 1 in 5 of all 5 years olds in pre-kindergarten and 2 in 5 in kindergarten. Almost 8 percent of the 6 year olds were in pre-kindergarten, these being already behind in grade.

Figure 11.2 Males in School 3 to 20 Years Old by Age: 1980
Figure inserted here. Takes one page.

Figure 11.3 Females in Schook 3 to 20 Years Old by Age: 1980
Figure inserted here. Takes one page.

Table 11.3 Pre-Kindergarten and Kindergarten Enrollment: 1980
Table inserted here.

About 86 percent of the children 6 to 13, those who would normally be in elementary school were actually attending elementary school in 1980. Only 58 percent of the 6 year olds and 49 percent of the 13 year olds were in elementary school, but more than 95 percent of the 7 to 12 year olds were in school between February 1 and April 1, 1990.

Table 11.4 Elementary School Enrollment by Age: 1980
Table inserted here.

About 2 out of every 3 teenagers (those 13 to 19) attending school in 1980. Although more than 4 out of 5 of the 14 to 16 year olds were attending, the percentages dropped off after that, to about half of the 18 year olds, and only about 1/4th of the 19 year olds (who would normally by out of school, unless held back for some reason.)

Figure 11.4 School Enrollment at Pre-School and Elementary (1-7), Age: 1980
Figure inserted here. Takes one page.

Equal proportions of this age group were attending junior and senior high school (which actually demonstrates a falloff in attendance since junior high school only had two grades compared to the three for senior high school).

Table 11.5 Junior ande Senior High School Enrollment by Age: 1980
Table inserted here.

A largest percentage of male than female teenagers were attending school (Tables 11.6 and 11.7). About 7 in 10 of the males were attending schho, equally divided between junior and senior high school. At age 19, 1 in 3 males were still in school.

Table 11.6 Junior and Senior High School Male Enrollment by Age: 1980
Table inserted here.

The females were not present in school as much in the older ages, either because they had already graduated, or because they had dropped out. Again, the females were represented in approximately equal proportions in the junior and senior high schools.

Table 11.7 Junior and Senior High School Female Enrollment
by age: 1980
Table inserted here.

The retardation rate for the whole NMI for children 6 to 18 years old was about 9 percent. Retardation rates were generally lowest of the youngest ages and highest for the oldest ages. Although 7 year olds only had a 1 percent retardation rate, and 8 year olds a 3 percent rate, 15 year olds had an 18 percent rate, and 1/4 of all 16 and 17 year olds were behind the appropriate level. When there were differences between the sexes, boys tended to have higher retardation rates than girls, especially at the older ages. For example, 32 percent of the boys 17 years old, but only 23 percent of the 17 year old girls were in this category.

The acceleration rate for CNMI in 1980 was 5 percent, about 4 percent for the boys and 6 percent for the girls. The data fluctuated quite a bit, but with 6 and 7 year old girls and 13 year old boys having the highest rates.

Table 11.8 Retardation and Acceleration Rates (in Percent)
1980
Table inserted here.

Figure 11.5 Retardation Rates: 1980
Figure inserted here.

Figure 11.6 Acceleration Rates: 1980
Figure inserted here. Takes one page.

Educational Output

Educational attainment is the measure of educational output in a population. Data on the educational output were derived from questions 8 and 9 of the census questionnaire. The educational attainment of a population group is one indicator of socio-economic trends.

Out of the 9172 persons 15 years old and older in 1980, 41 percent were high school graduates and 8 percent were college graduates (Table 11.9). About 6 in every 10 of the 20 to 24 year olds were college graduates as were 45 percent of all persons in 25 years and older category. The highest number and percent of high school graduates were in the 25 to 29 years old age group with 996 (68 percent) graduates out of 1,463 persons. Persons 25 years to 44 years had high percentages of college graduates ranging from 11 to 16 percent. The percent of high school and college graduates started to decrease from the 40 years old age group.

Table 11.9 High School and College Graduates by Age and
Sex: 1980
Table inserted here.

Figure 11.7 High School Graduates by Age: 1980
Figure inserted here. Takes one page.

Figure 11.8 High School Graduates for Males by Age: 1980
Figure inserted here. Takes one page.

Figure 11.9 High School Graduates for Females by Age: 1980
Figure inserted here. Takes one page.

Chapter 12.

Labor Force Participation

As the Commonwealth of the Northern Mariana Islands develops economically, labor force participation provides a measure of how well the government and the private sector are doing in providing jobs for the population. Although some data on labor force participation are obtained from periodic surveys in the Commonwealth, data for the whole population can be obtained only from a census. Since the decennial census us, by definition, collected once each decade, it provides a measure every ten years of labor force participation at the particular point in time. By the same token, since the census is only a snapshot, it does not provide temporal data; we cannot see change in the labor force characteristics over time, and the data themselves are extremely affected by temporary ups and downs in the economic situation in the Commonwealth as well as in the United States. In fact, as is sometimes noted, when the United States sneezes economically, the CNMI gets a severe case of pneumonia.

less than half of the population aged 16 years and over in 1970 was in the labor force, compared to almost two-thirds in 1980 (Table 12.1). Both Saipan and Rota had 64 percent of its adult population in the labor force compared to 57 percent on Tinian and 28 percent in the Northern Islands. Only 24 persons were recorded as being in the U.S. Armed Forces in 1970 and 13 in 1980. (These 13 were at a Coast Guard Station in the San Antonio area of Saipan and were not native to the area.)

Table 12.1 Labor Force Participation by Island: 1970 and 1980
Table inserted here.

The unemployment rate in 1970 was 2.8 percent and in 1980 was 2.4 percent, essentially the same. "Unemployment" in the CNMI is problematic, however, since persons doing subsistence or not otherwise in the labor force may be included in the "not in the labor force" category rather than in the labor force, but unemployed, so the "real" unemployment rate was probably considerably higher than that obtained from the census.

The labor force participation of males in the CNMI continued to be much higher than for females. In 1970, 69 percent of the males 16 years and over were in the labor force, which increased to 77 percent in 1980 (Table 12.2). Rota had the highest male participation rate of 79 percent, followed by Saipan at 77 percent, and Tinian at 73 percent. Only 11 of the 25 males in the age group in the Northern Islands were recorded as in the labor force.

The unemployment rate for males for 1970 was slightly lower than that of the whole population, but was essentially the same as for the whole population in 1980. Again, these figures mean very little in the case of the Northern Mariana Islands because of so many other factors which much be considered. The rates for all islands were low.

Table 12.2 Male Labor Force Participation by Island: 1970 and 1980
Table inserted here.

The labor force participation of females remained much lower than that of males, as is usually the case, since females are more likely to move in and out the labor force as they have babies, and take care of their children. However, although only about 1 in every 4 women in 1970 was in the labor force, by 1980, almost 1 in every 4 women was in the labor force, which shows real, rather than merely statistical, change. It is clear that a larger proportion of females actually were involved in work-for-pay activities in 1980 than in 1970.

It is also clear that the islands which provided the greatest variety of work options for women, also had the highest labor force participation rates. Saipan had the highest participation rate for women of 49 percent in 1980, followed by 44 percent for Rota, and 35 percent for Tinian. No women in the Northern Islands were in the labor

force in 1980 (Table 12.3).

The unemployment rate for females in 1980 (2.6 percent) was exactly half what it was in 1970 (5.2 percent), probably indicating the greater variety of job options open to women in 1980 than were unavailable in 1970.

Table 12.3 Female Labor Force Participation by Island:
1970 and 1980
Table inserted here.

The labor force participation of females used to be somewhat dependent on whether they had young children. The traditional communal society found in the Northern Mariana Islands would have freed women to work because of elderly people being built-in babysitters, but women would be unlikely to join the labor force because they would normally be expected to take care of their young children. Part-time paid employment also is a recent development in the Pacific, so females would probably not have been able to avail themselves of many work opportunities in the past.

The percentages of females 16 years and over with own children less than 18 years old increased from 50 percent in 1970 to 63 percent in 1980 (Table 12.4). The percentages of these women with children under 18 who were also in the labor force, however, increased ever more, from 12 percent in 1970 to 30 percent in 1980. That is, in 1970, about 1 in every 8 females 16 years and over had a child and was also in the labor force compared to 1 in 3 in 1980.

Another way of looking at these data is to look only at the group of females 16 years and over who actually had a child under 18 years old. Of the 1127 females in this category, the 260 who were in the labor force in 1970 constituted 23 percent of that population; this percentage more than doubled in 1980 to 47 percent - almost half of all women 16 years and over with a child under 18 in 1980 were in the labor force.

The percentage of adult females with own children under 6 increased from 34 percent in 1970 to 42 percent in 1980. About 9 percent of all adult females in 1970 had a child under 6 years old and were in the labor force compared to 20 percent in 1980. More adult females in 1980 than in 1970 had a child under 6 and more of them were in the labor force as well. Women with children 6 to 17 years old only had similar increases, with the proportion of these women in the labor force tripling from 3 to 10 percent.

The percentage of adult females with own children under 6 and who were also in the labor force increased from 25 percent of the women in this group in 1970 to 48 percent in 1980. Similarly, the percentage of adult females with own children 6 to 17 years only and who were also in the labor force increased from 18 percent to 46 percent of the women in this group during the decade (Table 12.4).

Table 12.4 Females with Own Children by Labor Force:
1970 and 1980
Table inserted here.

There were also differences in female labor force participation by island. Tinian had the largest proportion of females 16 years old and over with children under 18 years, and also had the smallest percentage of them in the labor force - only 23 percent. (This excludes the Northern Islands where 2/3s of the females had children under 18, but none of the women were in the labor force.) About 3 of every 10 women on Saipan and Rota had children under 18 and were also in the labor force.

As seen in Table 12.4, 47 percent of the females with children under 18 were in the labor force. On Tinian (Table 12.5), less than one-third (32 percent) of the females with children under 18 were in the labor force, compared to 45 percent for Rota and 48 percent for Saipan. The percentages for females with children under 6 and for females with children 6 to 17 only were similar.

The Commonwealth of the Northern Mariana Islands also experienced growth in the labor force at almost all age ages. The data for 1970 and 1980 are difficult to compare for some age groups, because not all comparable age groups could be obtained from the data a available. Labor force participation at all age groups for each sex either stayed the same or increased during the decade (except for females 16 to 19 who decreased slightly, although probably not significantly). For the youngest group aged 16 to 19, for example, 1 in every 4 males in both 1970 and 1980 was in the labor force, and so were about the same proportion of females. Until the age group 35 to 44, the peak period for employment (when people have sown their oats and are earning for themselves and their growing families), the percentage in the labor force increased for each age group, and then gradually dropped off.

Table 12.5 Females with Own Children by Labor Force Participation: 1980
Table inserted here.

Again, except for females in the younger age group, the percentage of males in the labor force was always greater than the percentage of females, and for some ages the differences were significant. For example, in 1970 only 25 percent of the females 35 to 44 were in the labor force compared to 93 percent of the males. While the percentage of males in this age group only increased to 94 percent during the decade, the percentage of females more than doubled to 54 percent (but this is still significantly less than the male labor force participation rate for the age group) (Table 12.5).

Both men and women seemed to be working much longer than they used to. The proportion of males 45 to 64 years old in the labor force increased from 73 to 82 percent during the decade, while the female labor force participation jumped from 13 percent to 32 percent.

Table 12.6 Labor Force Participation by Age and Sex: 1970 and 1980
Table inserted here.

The trend for labor force participation by age is seen more clearly in the smaller age ranges (Table 12.7). By 20 to 24 years old, 2 out of every 3 persons in the Northern Marianas were in the labor force in 1980, including 3 of every 4 males, and about 6 of every 10 females. The proportions increased for every age group to the 45 to 54 year olds, and then dropped off progressively. These trends were seen for both males and females, although the females started decreasing after the 35 to 44 year old age group, perhaps because women were dropping out of the labor force to care for their growing children.

Table 12.7 Age and Sex by Labor Force Participation: 1980
Table inserted here.

Figure 12.1 Labor Force Participation by Age: 1980
Figure inserted here. Takes one page.

Figure 12.2 Labor Force Participation for Females by Age: 1970 and 1980
Figure inserted here. Takes one page.

Figure 12.3 Labor Force Participation for Males by Age: 1970 and 1980
Figure inserted here. Takes one page.

As might be expected, there was a direct correlation between educational attainment and labor force participation (albeit with a slight dip for persons with exactly 3 years of high school) (Table 12..8). More than 8 in every 10 of CNMI high school graduates over 25 years old in 1980 were in the labor force, including about 19 of every 20 males and more than 7 in 10 females. Lack of educational attainment affected female labor force

participation much more than it did males. Although more than half of the males with no education were in the labor force, this was true for only 15 percent of the females. At every level of educational attainment, females had lower participation rates than males; however, the gap between the two sexes closed quite a bit for the higher levels of education, from a 40 percentage point difference for the lowest levels of educational attainment, to less than 20 percentage points for some of the higher levels of education (and less than 10 points for persons with 5 or 6 years of college).

Table 12.8 Years of Schooling Completed by Labor Force Status: 1980
Table inserted here.

Birthplace had different affects on the labor force participation. Many immigrants to the CNMI seemed to come specifically to work here for better wages and working conditions than they had in their home countries, so their labor force participation rates were naturally higher. About 57 percent of the adults born in the CNMI were in the labor force in 1980, including 69 percent of the males and 45 percent of the females (Table 12.9). (Although not shown separately here, 58 percent of all adult Chamorros were in the labor force, and 50 percent of the Carolinians.) The highest labor force participation rates in 1980 were for Asians - 97 percent for the males, and 66 percent for females. As might be expected, the rates for Philippine migrants were highest of all tabulated groups - 98 percent for males, and 74 percent for females. The rates for persons born in the United States were similarly high. On the other hand, only 56 percent of the males and 30 percent of the females born on Guam were in the labor force, and while 3 of every 4 males from the old Trust Territory areas (excluding CNMI) were in the labor force, this was true for only about 4 of every 10 TTPI females.

Table 12.9 Birthplace by Labor Force Participation: 1980
Table inserted here.

Figure 12.4 Years of Schooling by Labor Force Status: 1980
Figure inserted here. Takes one page.

About 3500 persons 16 years and over were not in the labor force in the week before the census (Table 12.10.) Of these, 62 percent had never worked. About half of those persons who did report a year last worked, selected 1970 or 1980. All of the those not in the labor force in the Northern Islands last worked in either 1979 or 1980. More than 7 in 10 of the non-workers on Rota last worked in one of these two years, with 40 percent of those who worked before having worked in 1980. Although about 1 in 6 of those who did not work in the week before the census had last worked between 1975 and 1978, about 1 in 3 had not worked since 1974 or before that. Of the three large islands, the smallest proportion of these long-term out-of-the-labor-forcers were on Rota (less than 10 percent), and the largest percent (more than 40 percent) were on Tinian.

Figure 12.5 Birthplace by Labor Force Participation: 1980
Figure inserted here. Takes one page.

Table 12.10 Year Last Worked for Persons Not in Labor Force: 1980
Table inserted here.

Figure 12.6 Year Last Worked for Persons Not in Labor Force: 1980
Figure inserted here.

LABOR FORCE PARTICIPATION IN 1979

In addition to information on labor force participation in the week before the census, the 1980 census also collected information on labor force participation in all of 1979 (the year before the census.) Labor force participation in the week before the census allows us to obtain data about the labor force once every decade, as a sort

of snapshot for that week, but the week may not be representative of labor force participation over a year, so another series of questions is used to obtain that type of information.

The data on labor force status in 1979 were derived from answers to question 29 on the 1980 census. Persons 16 years old and over were classified as in the labor force in 1979" if (a) in 1979 they worked 1 or more weeks for pay or profit (including weeks on paid vacation or on paid sick leave) or in a family business, or were on active duty in the U.S. Armed Forces; or (b) had any weeks of unemployment in 1979. The categories "Worked in 1979" and "With unemployment in 1979" were not mutually exclusive.

About 65 percent of the population 16 years and over were in the labor force in 1979 (Table 12.11). Rota had the highest percentage in the labor force in 1979 (67 percent), followed by Saipan (65 percent), and Tinian (60 percent). Slightly more than half of this age group in the Northern Islands were in the labor force in 1979.

Table 12.11 Labor Force Participation in 1979 by Island: 1980
Table inserted here.

In order to have "worked in 1979", a persons had to have worked at least one week for pay or profit (including paid vacation and sick leave) or worked without pay on a family farm or in a family business. Persons who did only subsistence activity in 1979 were tabulated in the category "Did not work in 1979." (It is probable that the number of persons who worked in 1979 and the number of weeks worked are understated since there is some tendency for respondents to forget intermittent or short periods of employment or to exclude weeks worked without pay).

Of the 5471 persons in the labor force in the CNMI in 1979, 5318 worked in 1979 (97.2 percent). Of these only 149 (2.8 percent) experienced some unemployment. Also, there were 153 additional people (2 percent of the total population 16 years and over) who did not work in 1979 by this definition, but who were "unemployed" for at least some part of the year. The data on "unemployment in 1979" pertain to the number of weeks during 1979 in which a persons did not work or did subsistence activity only, but spent any time looking for work to earn money or on layoff from a job.

For Saipan and Rota, unemployment was very low in 1979. The rates of unemployment were higher on Tinian and the Northern Islands, but the numbers were so small, that it is difficult to comment on any real unemployment problems. Most people in the Northern Islands did considerable subsistence even though it was evidently not reported as such in the census. Tinian also has a developing economy, but many individuals continue primarily to grow agricultural products for home use, and may not have been actively involved in the labor force. As was noted earlier, it is sometimes difficult to use the United States definition of unemployment in a transitional economic situation.

As was true for labor force participation in the week before the census, male labor force participation in 1979 was greater than female labor force participation (Table 12.12). About 79 percent of all adult males in CNMI were in the labor force in 1979 as were about 49 percent of all adult females. The rates by island were comparable to those seen for the total population. Unemployment rates were low for both males and females. It is interesting to note that for Rota, the male unemployment rate was higher than for females.

Table 12.12 Labor Force Participation in 1979 by Sex:
1980
Table inserted here.

The definition of weeks worked was presented earlier. Respondents were also asked to give the numbers of hours they usually worked each week in 1979. These data pertained to the number of hours a person usually worked during the weeks worked in 1979. The respondent was to report the number of hours worked per week in the majority of the weeks he or she worked in 1979. If the hours worked per week varied considerably in 1979, the respondent was to report an approximate average of the hours worked per week.

Persons 16 years old and over who reported that they usually worked 35 or more hours each week during the weeks they worked were classified as "Usually worked full-time"; persons who reported that they usually worked 1 to 34 hours were classified as "Usually worked part time". Persons who usually worked 35 hours or more per week for 50 to 52 weeks in 1979 were classified as "Year-round full-time workers".

Figure 12.7 Labor Force Participation in 1979 by Sex: 1980
Figure inserted here.

About 80 percent of the males who worked in 1979 worked between 50 and 52 weeks (Table 12.13). On the other hand, about 12 percent worked less than half the year (1 to 26 weeks). Except for the Northern Islands, Rota had the smallest percentage of males who worked the whole year (73 percent), and the largest percentage who worked less than half the year (18 percent).

Table 12.13 Males who Worked in 1979 by Usual Hours
Worked Per Week in 1979 by Weeks in 1979:
1980
Table inserted here.

Fully 96 percent of the males worked full-time (35 or more hours per week) during 1979. Of these, most (82 percent) worked the whole year, so are considered year-round full-time workers. Again, except for the Northern Islands, Rota had the smallest proportion of year-round full-time workers, and Tinian had the highest percent. Very few males in the Commonwealth worked only part-time in 1979.

Fewer of the females worked for the whole year (71 percent) (Table 12.14). No women in the Northern Islands were working in 1979. Only about 6 of every 10 women who worked in 1979 and lived on Rota in 1980 worked the whole year, while 1 in 4 on Rota and Tinian worked for less than half the year. Rota also had the smallest proportion of full-time female workers. Although 92 percent of all CNMI women who worked, worked full time, this was true for only 89 percent of the women on Rota.

Table 12.14 Females who Worked in 1979 by Usual Hours
Worked per Week in 1979 by Weeks in 1979:
1980
Table inserted here.

As noted earlier, 63 percent of the adults in the CNMI worked in 1979 (Table 12.15). Of those who did not work, only 94 (2.7 percent) were recorded as having done subsistence in 1979. It is clear that either much less subsistence was being carried out in 1979 than was previously thought, or these activities were not reported, or they were not recorded, coded, and tabulated.

It is very unlikely that no one in the Northern Islands was doing subsistence activities in 1979 since much of the food is only obtainable from subsistence for much of the year. Apparently there was some confusion either about what was meant by subsistence, or whether subsistence was to be recorded.

Table 12.15 Labor Force Status and Activity Status in 1979:
1980
Table inserted here.

CLASS OF WORKER

Class of worker allowed general grouping of people by economic activity. The six categories in 1980 were private wage and salary worker, Federal government employee, local government employee, self-employed, unpaid family worker, and subsistence activity workers (Table 12.16). Once again, the category for subsistence did not obtain reliable data; the number of unpaid family workers was also unaccountably low, but may be explained by

persons, usually the children or wife of the owner of a business or farm, not reporting this work.

Table 12.16 Class of Worker: 1970 and 1980
Table inserted here.

In 1970, almost 6 of every 10 employed persons 16 years and over worked for the local (Territorial) government. Only abut 1 in 3 worked for private wage or salary. By 1980, the data were almost reversed, with 56 percent working for private wage and salaries, and only 38 percent working for the local government. Federal workers included post office employees, Interior and State Department contacts and others, and the percent of those decreased slightly.

No one in the Northern Islands worked for private wages or salary in 1980 (Table 12.17). Of the 11 workers, 1 worked for the Federal government, and the other 10 worked for the Commonwealth government (mostly as teachers and health aides). Of the other islands, Tinian had the highest proportion of local government workers (53 percent - more than half), and the smallest percentage of private wage and salary workers (45 percent). On the other hand, only 36 percent of the workers on Saipan worked for the local government, while 57 percent worked for private wages and salaries. About 2 percent of the workers on Saipan and Rota were self-employed. Saipan had the largest proportion of Federal government employees - 1 in every 20 workers on Saipan worked for the U.S. Federal government.

Figure 12.8 Class of Worker: 1970 and 1980
Figure inserted here.

Table 12.17 Class of Worker by Island: 1980
Table inserted here.

Finally, the distribution of the labor force was greatly affected by birthplace (Table 12.18). Almost half of all employed persons 16 years and over who were born in the Commonwealth of the Northern Mariana Islands worked in local government in 1980 (compared to 23 percent of those not born in the CNMI). On the other hand only 43 percent of those born in the CNMI were in private wage and salary employment, compared to 71 percent of those born outside the CNMI. The absolute counts are also important - while 1412 of the 3308 total wage and salary workers in the CNMI in 1980 (43 percent) were born in the CNMI, fully 57 percent were born outside. On the other hand, 1603 of the 2225 local government workers (72 percent) were born in the CNMI. The percentage of local-born Federal government employees (6 percent of all local born), was roughly double that of the non-local born.

Migrants from the Philippines went almost exclusively into wage and salary employment. Fully 92 percent of all employed Philippine-born persons were in wage and salary employment (compared with only 51 percent of all other persons not born in the CNMI). On the other hand, 40 percent of the non-Philippine off-islanders were in local government, compared with only 6 percent of the Philippine-born persons.

Table 12.18 Class of Worker by Birthplace: 1980
Table inserted here.

In this chapter we have looked at the labor force participation in the Commonwealth of the Northern Mariana Islands in 1980. There are no intercensal estimates, so the census data have to be used to interpret the labor force status of the CNMI population even though it is known that the Commonwealth has experienced massive immigration since 1980 which has heavily affected the labor force participation.

Figure 12.9 Class of Worker by Birthplace: 1980
Figure inserted here.

Chapter 13.

Industry and Occupation

Industry and occupation data were collected for the first time in 1980 for the CNMI, so the series is very short. Data collected in 1973 were not strictly comparable with data from the decennial censuses.

The questions in the 1980 census for occupation and industry (as well as for class of worker) were used to obtain information for the employed, the experienced unemployed, and experienced workers not currently in the labor force. The last tow categories apply to persons who had worked at some time during the previous 5 years (before the census). All three items related to one specific job held during the reference week. Those who were employed at two or more jobs reported the job at which they worked the greatest number of hours during the reference week. For experienced unemployed persons and for those not in the labor force, the information referred to the last job that they held.

Clerical staff in the Census Bureau's processing office in California converted the written industry and occupation descriptions from the questionnaire to identifying codes by relating these descriptions to an entry in the 1980 Census of Population: Alphabetical Index of Industries and Occupations (PHC80-R3).

In addition to the regular codes, special codes were included for subsistence. "Subsistence activities" included activities such as cutting and selling copra, making or selling handcrafts, fishing for one's own food, and growing food for one's own use. As we have already discussed, the 1980 Census questionnaire for the Outlying Areas did not elicit very accurate data on subsistence. Only 6 people were reported as having done subsistence in the occupation and industry items.

INDUSTRY

The industry classification system developed for the 1980 Census of Population consisted of 231 categories classified into 13 major industry groups. Since 1940, in the United States, the industrial classification has been based on the Standard Industrial Classification Manual (SIC). The 1980 census classification was developed from the 1972 SIC and a 1977 supplement.

Altogether, there were 5,941 employed persons 16 years and over in 1980, which was 62 percent of all persons in the age group (Table 13.1). The largest industry category in 1980 was public administration, which was also the largest category in 1970, but while in 1970 3 or every 10 workers was in this category, only 2 of every 10 were in the category in 1980. The second largest category - professional and related services - also decreased, from 20 percent of the employed adults in 1970 to 15 percent in 1980. In fact, in 1980, construction had moved into second place among industry categories, at 17 percent, up from 13 percent in 1970. That is, 1 of every 6 workers in 1980 was in construction. The construction boom had to do with the formation of the Commonwealth government, and increased tourism and related activities.

The increase in tourism also was seen in two other categories - retail trade and personal entertainment, and recreational services. The percent of the population involved in retail trade doubled between 1970 and 1980, from 7 to 14 percent. Similarly, the percent in personal, entertainment, and recreational services increased from 7 percent of the workers in 1970 to 13 percent in 1980.

These real changes in the work force are representative of a changing economy in the CNMI, from one that was primarily government based before Commonwealth, to one that is more and more oriented to the private sector. Mostly the great increase in the private sector has caused the recorded changes in the distribution of industry categories.

For example, the number of persons in public administration actually increased from 654 to 1264 (610

persons or 93.3 percent), but this was more than offset just by the increase of the 725 more construction workers (264 percent). Also, even with dramatic increases in the educational services (119 percent), and health services (95 percent), these areas still provided smaller proportions of the total labor force.

Table 13.1 Industry: 1970 and 1980
Table inserted here.

The industry data do not bode well for economic development in the Commonwealth. Only 110 persons in 1980 were involved in manufacturing, up from 34 in 1970, but still less than 2 percent of all employed workers. Business and repair services constituted another 3 percent of the work force. And, for all practical purposes, agriculture and fishing are now effectively dead in the CNMI. While 7 percent of the population was engaged in these activities in 1970, the percentage had dropped to 2 percent in 1980, and the number of persons had actually decreased - from 142 to 126 (and the data for 1970 are generally assumed to be low in any case.)

The 3902 employed males 16 years and over in 1980 made up 66 percent of the total work force (Table 13.2). The largest proportion of these males were in construction, 25 percent. That is, 1 in every 4 employed makes in 1980 was working in construction, a phenomenal proportion considering that construction work tends to be cyclical at best, and the CNMI must consider the implication of this skewing of the labor force over the longer term. The number of males in construction increased from 265 to 972 (267 percent) during the decade.

Table 13.2 Industry for Males: 1970 and 1980
Table inserted here.

The second largest industry category for males was public administration, also containing about 1 in every 4 males, but down from about 1 in 3 in 1970. Decreases were also seen in the proportion of professionals in health and educational services as well (although the numbers increased). Besides construction, large increases were also seen in personal, entertainment, and recreation, and in retail trade.

As we have discussed throughout the monograph, the large increase in the female labor force was one of the most important findings of the 1980 census. The number of employed females in 1980 was 2,039, up from 570 in 1970 (258 percent increase) (Table 13.2). About 1 in every 3 females in 1970 was in professional and related services, most of them in health services (as nurses and nurse's aides) and educational services (as teachers and teacher's aides) - "traditional" industries for women. Although the number of women in these sub-categories increased from 186 to 483 (160 percent) between 1970 and 1980, the proportion decreased from about 1 in 3 to 1 in 4. The percentage of women in health services decreased from 10 to 6 percent, and for educational services from 19 to 13 percent.

Table 13.3 Industry for Females: 1970 and 1980
Table inserted here.

On the other hand, the percentage of women in retail trade more than doubled, from more than 10 percent to 23 percent. More than 400 more women were engaged in retail activities in 1980 than in 1970. There were also large increases in personal, entertainment, and recreational services, increasing from 15 percent to 21 percent during the decade. Very few women entered the "traditional" male activities as construction workers (1 percent), or transportation (3 percent compared to 7 percent for the males).

The male-female differences can be seen even more starkly in Table 13.4. Here we have presented the 1980 industry data by sex, giving the percentages by industry, but have also included the percent female for each of the industry categories, and sub-categories included.

Altogether, females made up 34 percent of the work force (about 1 in every 3 employed workers). As would be expected, females contributed large proportions of the "traditional" female industries, and smaller proportions of the "male" industries. Females constituted more than half of the workers in retail trade, finance, personal, entertainment, and recreational services, and health and educational services.

Table 13.4 Industry by Sex: 1980
Table inserted here.

Without crossing the industry data by occupation data, it is difficult to really assess the in-roads females are making in the labor force. For example, although 59 percent of the category finance, insurance, and real estate were women, most of these women may have been bank clerks rather than in administrative positions.

Figure 13.1 Females in Industry: 1980
Figure inserted here. Takes one page.

On the other hand, females made up only 3 percent of the construction workers (and secretaries in companies would be included in this category), 5 percent of persons doing agriculture and fishing, and 15 percent of business and repair workers.

Because Saipan the industrial as well as political capital of the Commonwealth, it is not surprising that it skews the distribution of persons working in various industries (Table 13.5). For example, although public administration is the largest category on Saipan, with 1 in every 5 workers, the percentage is still smaller than for either of the other two of the large islands. More than 1 in 3 workers on Tinian were in public administration, as were 22 percent of those on Rota.

Table 13.5 Industry by Island: 1980
Table inserted here.

Although all three large islands were experiencing building booms in 1980, the effects were stronger on Rota and Tinian than on Saipan. Almost 1 in every 3 workers on Rota were in construction in 1980, and almost 1 in 4 on Tinian (compared to the 15 percent - less than 1 in 6 - on Saipan). On the other hand, while 15 percent of the workers on Saipan were in retail trade, this was true for only about 7 percent of the workers on Rota and Tinian.

Almost 88 percent of all employed persons were working on Saipan in 1980; another 8 percent were on Rota, 4 percent were on Tinian, and less than 1 percent were on the Northern Islands. As would be expected, the largest percentages of persons working in each industry worked on Saipan. Although more than 95 percent of employees in manufacturing, wholesale trade, and finance, insurance and real estate were on Saipan, about one-third of all persons working on agriculture and fishing were on Tinian, and 14 percent of all CNMI construction workers were on Rota, with another 6 percent being on Tinian.

About 55 percent of all employed persons in the Commonwealth in 1980 were born in the Northern Mariana Islands (Table 13.6). The distribution for native born was different from those born outside the CNMI. For example, the largest percent of native persons were working in public administration - twice the percentage of the non-natives in that industry. The second largest percentage of native born were working in professional and related services, followed by those working at retail trades.

Figure 13.2 Industry by Birthplace: 1980
(Percent Born in CNMI)
Figure inserted here.

The largest percentage of non-natives in construction, with 3 of every 10 non-natives working at that activity (compared to less than 7 percent of the natives). The second largest percentage on non-natives were working in personal, entertainment and recreation services, and the third largest were working at retail trades, about the same percentage as for the native born.

Table 13.6 also shows the percentage of each industry that was native born employees. Although the average for all industries was 55 percent, there were wide divergences. As expected, construction was most skewed toward non-natives: only 22 percent of all construction workers in the CNMI in 1980 were native born. The other

industry with a low proportion of native born was manufacturing (both durable and nondurable goods). At the other extreme, 79 percent of persons working in finance, insurance and real estate were natives, as were 75 percent of those in transportation, 73 percent in wholesale trade, and 72 percent in public administration, and health services.

Table 13.6 Industry by Birthplace: 1980
Table inserted here.

In chapter 1 the history of the relationships between the Chamorros and the Carolinians was traced, and Chapter 10 described current characteristics of these two groups. There were also differences in participation in the various industries on the basis of ethnicity. The data presented in Table 13.7 show the distribution of industry for Chamorros and Carolinians. In obtaining these data, persons who responded as Chamorro only or Carolinian only were combined with those responding "Chamorro and another group" or "Carolinian and some other group." Persons who indicated they were Chamorro-Carolinian were therefore counted as both Chamorro and Carolinian. There were an unknown number of these persons in 1980, but the number is probably very small, and unlikely to affect the discussion of ethnicity presented here.

There were 2881 Chamorro workers and 634 Carolinian workers in 1980. The Chamorros made up almost half of all of the workers in the commonwealth. The largest percentage of Chamorros were in public administration (27 percent) and in professional and related services - health and education (18 percent). Another 15 percent of the Chamorros were in retail trade, and 11 percent were in communications and transportation. Only 7 percent were in construction compared to 17 percent for the total population of the CNMI.

On the other hand, more than half of all the Carolinian workers were in just two industries - 3 in 10 were in public administration and 2 in 10 were in professional and related services. Another one-fourth of the Carolinians were in only two other industries, 12 percent in personal, entertainment and recreation activities, and 14 percent in communications and transportation (compared to 9 percent for the Commonwealth's total population). Only 5 percent were in construction.

Figure 13.3 Ethnicity by Industry: 1980
Figure inserted here.

The last column in Table 13.7 shows the proportion of each industry that was Chamorro in 1980. Although slightly less than half of all workers were Chamorro, fully 71 percent of all persons in finance, insurance, and real estate were Chamorro, as were 64 percent of those in wholesale trade, and 61 percent of persons in public administration. At the other end, only 20 percent of employed persons in manufacturing were Chamorro, and only 21 percent of those in construction.

Table 13.7 Industry by Ethnicity: 1980
Table inserted here.

Figure 13.4 Industry by Percent High School Graduates: 1980
Figure inserted here.

There was also a relationship between education and industry (Table 13.8). Altogether 56 percent of employed persons 25 years and over were high school graduates, as were 55 percent of the males and 57 percent of the females. The skewing in favor of females may be due to younger females being more likely than males to take entry level jobs as secretaries and professional aides.

About 3 in every 4 persons working in professional and related services and in finance, insurance and real estate were high school graduates. Also, 63 percent of the public administrators had graduated from high school as did about 62 percent of those in manufacturing. Conversely, only 4 in every 10 persons in agriculture and fishing activities had graduated from high school, and 44 percent of persons in personal, entertainment, and recreational services.

There were differences in educational attainment by sex. Almost 84 percent of males working in finance, insurance and real estate were high school graduates (compared to 64 percent of the females), and the 39 males in wholesale trade were much more highly educated than the 8 women. On the other had, 12 of the 17 women (71 percent) in construction were high school graduates compared to only 40 percent of the 906 men, and 70 percent of the females in communications and transportation completed high school compared to 49 percent of the men in those industries.

Table 13.8 Industry by Percent High School Graduates by Sex: 1980
Table inserted here.

The 1980 census asked a question about vocational education. Of the 5867 employed persons 16 to 64, 1444 had had vocational training (almost 1 in 4) (Table 13.9). About 3 in 10 of those in construction and in professional and related services had had this training, but only 15 percent of those in personal, entertainment, and recreation services, and 17 percent of those in wholesale trades.

Figure 13.5 Industry by Persons Completing Vocational Training: 1980
Figure inserted here. Takes one page.

Of all persons who were trained in some kind of vocational education program, 21 percent were in public administration in 1980, and another 17 percent were in construction.

Table 13.9 Industry by Persons Completing Vocational Training: 1980
Table inserted here.

OCCUPATION

The system developed for the 1980 census for occupation classification consisted of 503 specific occupation categories arranged in 6 summary and 13 major occupation groups. The 1980 Census of Population: Classification Index of Industries and Occupations (PHC80-R4) provides information on the composition of the detailed categories in the census system. The classification was developed to be consistent with the 1980 Standard Occupational Classification Manual (SOC), published by the U.S. Department of Commerce. The 1980 census was the first to use a United States standard in developing the census occupational classification. However, the conversion to the SOC ca;used the 1980 census data not to be comparable with previous data, so comparable data for 1970 cannot be shown. Of course, the 1973 Census of the Trust Territory of the Pacific Islands used yet another classification scheme, so those data also cannot be compared with the 1980 census data.

Slightly more than 1 in 4 of all the employed persons 16 years and over in the CNMI in 1980 were in technical, sales, and administrative support positions, and another one-fourth were in managerial and professional specialties. Another one-fifth were in precision production crafts, and repair, and yet another 1 in 5 were in service occupations. The remaining persons were either doing farming, forestry and fishing (2 percent) or were operators, fabricators, and laborers (10 percent).

The percentage distributions by island were similar to those for the whole commonwealth, with a few exceptions. Because of the construction on Rota, a larger percentage of the employed population were operators, fabricators, and laborers, and precision craftsmen, while a smaller proportion were managers and technical, sales, and administrative support personnel. Because of the peculiar mix of industries on Tinian, a larger proportion of the population were operators, particularly transportation and material movers, while smaller proportions were in service and technical occupations, and managers. The number for the Northern Islands were to small for comparison purposes.

Table 13.10 Occupation by Island: 1980
Table inserted here.

In 1980, 45 percent of employed females were in technical, sales, and administrative (secretarial) occupations (Table 13.11). Another 31 percent were in service occupations, so almost 3 in every 4 employed women were in these two occupational categories. In the service area, every one of the 105 persons working in private households was female. On the other hand, only 2 percent of the women were operators, fabricators, and laborers, and another 2 percent were in precision production craft and repair (compared to 29 percent of the males), while 20 percent were in managerial and professional specialties (compared to 25 percent of the males).

The largest category for males was precision production craft and repair at 29 percent, followed by managerial and professional specialties. Only 16 percent of sales people, and 63 percent of those persons working in administrative support. Females made up only 20 percent of executives and administrators, 5 percent of those working in farming and fishing, and in precision production crafts and repair, 4 percent of those in protective services, and less than 1 percent of the transportation and material movers.

Table 13.11 Occupation by Sex: 1980
Table inserted here.

Of the 55 percent of the employed persons born in the CNMI, one in three were working in technical, sales and administrative support occupations, compared to only 1 in 6 of those born outside the CNMI> These included 1 in every 5 CNMI born who were in administrative support positions (compared to 1 in 10 for those born outside). On the other hand, 3 in every 10 persons born outside the CNMI were in precision production crafts and repair, compared to only 1 in 10 of those born inside.

Figure 13.6 Females by Occupations: 1980
Figure inserted here. Takes one page.

Almost 80 percent of all the persons working in protective service were born in the CNMI, as were 72 percent of the handlers, equipment cleaners, and laborers, and administrative support personnel, and 71 percent of sales people. At the other extreme, only 4 percent of private household workers were born in the CNMI, as were 30 percent of the precision production crafts and repair persons.

Table 13.12 Occupation by Birthplace: 1980
Table inserted here.

The 1980 census data for occupation and industry show an active economy with large numbers of persons working in construction, building the economic base, and in tourism as well as the general infrastructure. We have shown various aspects of the labor force to highlight the differences in the labor force, and to show the general strength of the labor force.

Figure 13.7 Occupation by Birthplace: 1980
Percent Born in CNMI
Figure inserted here. Takes one page.

Chapter 14.

Income and Poverty

The data on income in 1979 were derived from answers to questions 30 and 31. Information on money income received in the calendar year 1979 was requested from persons 15 years old and over. "Total" income is the algebraic sum of the amounts reported separately for wage and salary income; nonfarm net self-employment income; farm net self-employment income; interest, dividend, net royalty or rental income; Social Security or Retirement income; public assistance or welfare income; and all other income (including remittances). "Earnings" is defined as the algebraic sum of wage or salary income and net income from farm and nonfarm self-employment. The earnings figures represent the amount of income received regularly before deductions for personal income taxes, Social Security, bond purchases, union dues, medicare deductions, etc.

Receipts from the following sources were not included as income: money received from the sale of property (unless the recipient was engaged in the business of selling such property); the value of income "in kind" from food stamps, public housing subsidies, medical care, employer contributions for pensions, etc.; withdrawal of bank deposits; money borrowed; tax refunds; exchange of money between relatives living in the same household; gifts and lump-sum inheritances, insurance payments, and other types of lump-sum receipts.

Since questionnaire entries for income were frequently based on memory and non on records, many persons tended to forget minor or irregular sources of income, and therefore, underreported their income. Underreporting tended to be more pronounced for income sources that were not derived from earnings, dividends, and rentals. In addition, there were errors of reporting due to misunderstanding of the income questions. One such error was the reporting of gross rather than net dollar amounts for the two questions on net self-employment income, which resulted in an overstatement of these items. Another common error was the reporting of identical dollar amounts in two of the seven types of income items where a respondents with only one source of income assumed that the second amount should be entered to represent total income. Such instances of over-reporting would have an impact on the level of mean nonfarm or farm self-employment income and mean total income published for the various geographical subdivisions in the CNMI.

Extensive review procedures were instituted in the coding operation to reduce some of these reporting errors and to improve the accuracy of the income data. Moreover, many reporting errors were rectified through the coding and the computer editing procedures, with the result that consistency of reported income items with work experience, occupation, and class of worker information was improved. For example, if a person reported he or she was self-employed on his/her own farm, not incorporated, but had reported wage and salary earnings only, the latter amount was shifted to net farm self-employment income. Also, if a person reported total income only, the amount was generally assigned to one of the type of income items according to responses to the work experience and class-of-worker questions. Another type of problem involved the non-reporting of income data. Where income information was not reported, computer allocation procedures were devised to impute appropriate values (either no income or positive or negative dollar amounts) for the missing entries.

Only 107 of the 3,028 households (3.5 percent) in the Commonwealth of the Northern Mariana Islands in 1979 received on income at all (Table 14.1). Of those receiving income, 320 households received $25,000 or more from all sources, more than 10 percent of all households. Most of these households were on Saipan, with less than 1 percent of the households on Rota and Tinian receiving this much income, and none of the households in the Northern Islands.

About 1 in 6 households received between $5000 and $7499, which was the largest or modal category. More than 10 percent were in categories of $7500 to $9999, and $10000 to 12499, but also more than 10 percent were in the lowest income category - $1 to $2999 or less.

Table 14.1. Households by Household Income in 1979 by Island: 1980
Table inserted here.

The income data for families showed similar results (Table 14.2). Only 3 percent of all families received no income, while 10 percent received $25000 or more.

Figure 14.1. Households by Household Income in 1979: 1980
Figure inserted here. Takes one page.

Table 14.2. Families by Family Income in 1979 by Island: 1980
Table inserted here.

Unrelated individuals are those who live in households or in group quarters but who are not related to the householder. These people are tabulated separately for various reasons.

Almost 14 percent of the unrelated individuals 15 years and over received no income in 1979 (Table 14.3). Only 1 person in the Northern Islands was in this category, but 14 percent of those on Saipan, 9 percent on Rota, and 19 percent on Tinian had no income in 1979.

On the other hand, about 7 percent of the unrelated persons received $10000 or more in 1979. Almost all of these were on Saipan - only 9 lived on Rota, and 8 on Tinian (each less than 1 percent of the island's unrelated individuals.) A majority of the unrelated persons received less than $4000 in 1979.

Figure 14.2. Families by Family Income in 1979: 1980
Figure inserted here. Takes one page.

Table 14.3. Unrelated Individuals 15 and over by Income in 1979: 1980
Table inserted here.

MEDIAN AND MEAN INCOME

Table 14.4 shows the mean and median household income in 1979 by island and for the whole CNMI. The median income in 1979 was almost $9000, while the mean was almost $13000 for all persons, and more than $13000 when only households actually receiving income are considered. The median was highest for Saipan, at $9,400, and lowest for the Northern Islands, with Rota and Tinian at around $7,000.

Table 14.4. Mean and Median Household Income in 1979 by Island: 1980
Table inserted here.

Figure 14.3 Unrelated Individuals 15 and Over by Income in 1970: 1980
Figure inserted here. Takes one page.

Figure 14.4 Median Household Income in 1979 by Island: 1980
Figure inserted here. Takes one page.

The median income is the amount which divides the distribution into two equal groups, one having incomes above the median and the other having incomes below the median. The median for persons in all areas was based on persons with income. It should be noted that the median income values for persons were computed on the basis of more detailed income intervals than shown in Tables 14.1, 14.2, and 14.3.

The mean income is the amount obtained by dividing the total income of a particular statistical universe by the number of units in that universe. Thus, mean income is obtained by dividing the total number of persons with income.

Care should be taken in using and interpreting mean income values for small populations such as the CNMI. Since the mean is strongly influenced by extreme values in the distribution, it is especially susceptible to the effects of sampling variability, misreporting, and processing errors. The median, which is not affected by extreme values, is therefore a better measure than the mean when the population base is small. The mean, nevertheless, is shown because, when weighted according to the number of cases, the means can be added to obtain summary measures for areas and groups other than those shown.

The mean household income distribution by type also shows variation among the islands (Table 14.5). As would be expected, most income received was from earnings, with relatively small amounts from other sources. The average household in the CNMI which received any interest, dividend or net rental income, received about $2800, with smaller amounts being reported for Social Security, Public Assistance, and all other sources (including remittances).

Table 14.5. Mean Household by Type: 1980
Table inserted here.

Figure 14.5 Mean Household Income by Type: 1980
Figure inserted here. Takes one page.

The median family in 1979 in the CNMI was $9,600, somewhat more than the median household income (Table 14.6). The medians for each island were similar to the household income medians. The mean family income was $12,906 in 1979, also somewhat higher than the mean for households.

Table 14.6. Mean and Median Family Income in 1979 by Island: 1980
Table inserted here.

Table 14.7 shows the mean family income in 1979 by the number of workers in the family. The mean for the Cnmi was $12,900. Of course, families with no workers had a very low mean annual income of only $2000. As would be expected, the more workers in the family, the higher the mean family income, except that families with 2 workers had slightly higher mean incomes than those with 3 workers. (This might be explained by the third person being a young worker, who may have entered the labor force to supplement an already low family income derived from the income of the other two workers.)

Table 14.7. Mean Family Income by Workers in Family in 1979: 1980
Table inserted here.

Figure 14.6 Median Family Income in 1979 by Island: 1980
Figure inserted here. Takes one page.

The income for unrelated persons was lower than for either households or families, because these are single individuals. The mean for all unrelated persons in 1979 was $3300, and the mean was $3900 (Table 14.8).

Table 14.8. Mean and Median Income of Unrelated Individuals in 1979 by Island: 1980
Table inserted here.

Figure 14.7. Median Income of Unrelated Individuals in 1979 by Island: 1980
Figure inserted here. Takes half a page.

The per capita income is a measure of the average income per person in an area and is derived by determining the income of all persons from all sources and dividing by the total number of persons in the area. The per capita income in the Commonwealth of the Northern Mariana Islands in 1979 (as determined by the 1980 census)

was $2418. The per capita income in the United States for 1979 was $7298 and the per capita income on Guam was $4793, so it is evident that the CNMI was poorer than either the U.S. or Guam. In 1979, the per capita income for Saipan was $2542, for Rota was $1717, for Tinian was $1585, and was $429 for the Northern Islands.

In 1969, the per capita income for the Commonwealth was $681, but inflation makes this figure uncomparable with the 1979 figure. However, by adjusting for inflation, that is, multiplying by 1.98 to account for inflation during the decade, the 1969 per capita income would be $1335 in 1979 dollars. Therefore, the change in per capita income between 1969 and 1979 was 81.2 percent, which shows real monetary growth in the Commonwealth during the period. Since the 1969 figure was so low, even with this phenomena) growth, the CNMI was still very poor when compared to any of the States or Guam.

In order to obtain more income data for individuals, another series of tabulations was prepared. There were 5,384 males and 4,591 females over 15 in 1980, and of these 4,258 of the males (79 percent) and 2,446 (53 percent) of the females received income in 1979 (Table 14.9). The median income for all individuals in 1979 was $3800, $4200 for males and $3100 for females. That is, the average female received 73 percent of what the average male in the CNMI received in 1979.

Table 14.9 Income of Persons in 1979 by Sex: 1980
Table inserted here.

The mean income data showed similar results. Although the average income in 1979 was $6100, it was $6900 for males and $4500 for females. About 1 in 4 of the persons received between $5000 and $6900, with a larger proportion of males than females in this category.

The median income of persons born in the CNMI was similar to the median income of those born outside, although persons born inside received slightly smaller incomes (Table 14.10). For the mean, however, the average CNMI-born person received about $2000 less over the year on the average than the average person born outside the CNMI. Some of this difference may be attributable to U.S. contract workers who command higher salaries than local people. Of the 189 persons received $25000 or more in 1979, 130 (68.8 percent) were not born in the CNMI. Also, although 3 percent of all persons in the CNMI received $25000 or more, this was true of almost 5 percent of those born outside (and less than 2 percent of those born inside).

Table 14.10 Income of Persons in 1979 by Birthplace: 1980
Table inserted here.

Two of the largest groups of immigrant workers receiving income in 1979 were from the Philippines and from the Trust Territory of the Pacific Islands (TTPI). Since the TTPI government was still in operation in 1980, and headquartered in Saipan, a relatively large number of persons from that area were employed on Saipan, both directly for that government and for other government and non-government employers.

Of the 9975 persons 15 years and over, 1458 were from the Philippines and 1164 were from the TTPI (Table 14.11). Altogether 1285 persons born in the Philippines (88 percent) received income in 1979, and 716 (61.5 percent) from the TTPI. The median income for persons born in the Philippines was $3400, about $300 less than for those born in the CNMI, and for persons born in the TTPI was $3900, about $200 more than for those born in the CNMI, the latter probably due to higher incomes for TT
I employees since cost of living allowances would be necessary to help pay for rents and other associated costs.

The mean incomes for both persons born in the Philippines and those born in the TTPI were less than for the population as a whole, with the amount for Philippines born being more the $2000 less, indicating that a large number of Philippines were earning small amounts and a few were earning higher incomes. For example, only 2 percent of all Philippines received more than $15000, compared to 7 percent for the population as a whole (and more than 10 percent for all persons born outside the CNMI). Almost 1 in 3 persons born in the Philippines received between $3000 and $5000 in 1979.

Table 14.11 Income of Persons in 1979 by Birthplace: 1980
Table inserted here.

Because of single and multiple ethnicity reporting, data for Chamorros and Carolinians is obscured. However, language use can be used as an indirect measure. For persons speaking Chamorro at home, the median income in 1979 was $3900, slightly more than for the total population; the median for persons speaking Carolinian at home was $2900, about $1000 less than for Chamorro speakers (and $900 less than for all persons) Table 14.12). There could be a relationship between language spoken at home and income. Chamorro speakers had an average income of $5600, about $400 less than the average for all persons in the CNMI, while the average for Carolinian speakers was $3500, about $2500 less than average, again, indicating that a majority of Carolinians were receiving very low incomes and very few were receiving high incomes. Only 4 Carolinian speakers (much less than 1 percent) received more than $15000 in 1979, compared to 180 Chamorro speakers (more than 5 percent). On the other hand, more than 13 percent of the Carolinian speakers earned less than $1000, compared to only 8 percent of the Chamorro speakers.

Table 14.12 Income of Persons in 1979 by Language: 1980
Table inserted here.

About 45 percent of all persons in the CNMI 25 years and over were high school graduates, as were 51 percent of those who received income in 1979 (Table 14.13). Almost 52 percent of the males and 49 percent of the females receiving income were high school graduates.

There was a fairly direct relationship between income and percent high school graduates. Although 29 percent of those persons receiving less than $500 in 1979 were high school graduates, this was true for 85 percent of those with $25000 or more, and 90 percent for those having received $15000 to $24999. More than 3 out of every 4 persons receiving $7000 or more in 1979 were high school graduates. In general, males had higher percentages of high school graduates for a particular income category than females.

Table 14.13 Income of Persons in 1979 by Percent High School Graduates: 1980
Table inserted here.

Poverty status is dependent on number of persons in the family and various income criteria. The same measures for poverty were used in the CNMI as in the States, and are therefore not particularly useful for determining actual financial need in the CNMI.

For example, the poverty definition used in the States placed 59 percent of the CNMI population below poverty in 1979 (Table 14.14). The population on Saipan was least in poverty (56 percent), while 72 percent of those on Rota were in poverty, as well as 77 percent of those on Tinian, and 98 percent of those in the Northern Mariana Islands.

Persons living below 75 percent of the poverty level are considered to be in "extreme poverty". By this criterion, 45 percent of the CNMI population was in extreme poverty. Since subsistence, differences in the standard of living, and other factors are not taken into account, it is difficult to attribute any meaning to this data. In fact, only 15 percent of the total population was at 200 percent or more of poverty.

Figure 14.8 Income of Persons in 1979 by Percent High School Graduates: 1980
Figure inserted here. Takes one page.

Table 14.14. Persons in Poverty by Status and Island in 1979: 1980
Table inserted here.

Table 14.15 shows cumulative percents by poverty level. As noted before, considerably more than half the population in 1980 was in poverty. More than 2 in 3 persons were at 125 percent of poverty, and more than 3 in 4 at 150 percent of poverty.

Table 14.15 Persons in Poverty by Status and Island in 1979: 1980
Table inserted here.

Figure 14.9 Persons in Poverty by Status in 1979: 1980
Figure inserted here. Takes one page.

Figure 14.10 Per Capita Income in 1979: 1980
Figure inserted here. Takes one page.

SUMMARY

This monograph has presented historical and contemporary population and housing data for the Commonwealth of the Northern Marianas, based primarily on census data. The statistical profile has been general in nature so that the people of the Northern Mariana Islands could assess our past, our present, and look a little bit into our future.

Chapter 1 presented historical data, covering the periods of Spanish, German and Japanese occupation, the American Administration, and the beginnings of the Commonwealth. The next series of chapters looked at demographic characteristics - age and sex (Chapter 2), households and families (Chapter 3), marital status (Chapter 4), fertility (Chapter 5), mortality (Chapter 6), and migration (Chapter 7). Estimates and projections for the CNMI population were presented in Chapter 8. Chapter 9 discussed housing characteristics. The rest of the monograph has been devoted to the social and economic conditions of the commonwealth - ethnicity (Chapter 10), education (Chapter 11), labor force participation (Chapter 12), industry and occupation (Chapter 13), and income and poverty (Chapter 14).

In this summary, data are presented to help planners and other interested people in the Northern Mariana Islands compare the situation here with that found in the United States and the other U.S. territories - the Virgin Islands, Guam, and American Samoa.

Data for year-round housing units are presented in Table 15.1. The number of housing units in the CNMI (#,373) was the smallest for any of the territories, which is not surprising since we are also the smallest in population. Except for American Samoa, we have the smallest median number of rooms of any of the territories, slightly smaller than the Virgin Islands. Because of our smaller number of rooms, we also had a smaller percentage of units with 3 or more bedrooms than either the United States or Guam.

Table 15.1 Characteristics of Year-round Housing Units:
1980
Table inserted here.

Also, we have the largest proportion of one unit structures (91 percent), except for American Samoa (94 percent) and the smallest proportion of structures with 5 or more units (4 percent), again except for American Samoa (1 percent).

Because of frequent typhoons, both CNMI and Guam had a large proportion of recently constructed houses - almost 6 out of every 10 having been built between 1970 and 1980 compared to only about 1 in 4 in the United States; on the other hand, while about 1 in 4 U.S. units were constructed before 1940, this was true for less than 1 in 100 of our units.

About half of our structures lack complete plumbing, compared to only 3 percent in the United States and 4 percent in Guam, but 56 percent in American Samoa. Except for Guam, more water comes from a public system than any of the other territories, but only about 1 in 4 of our units is connected to a public sewer, compared to about 3 in 4 in the U.S., and only slightly less in Guam. A smaller percent of our units have electricity than either Guam or American Samoa, but while 6 in every 10 units in Guam has air conditioning, only 1 in 4 of our units does (but only 1 in 12 of those in American Samoa.

Table 15.2 Characteristics of Occupied Housing Units:
1980
Table inserted here.

In our occupied housing units, we had a higher median number of persons (4.9) than any of the other territories except for American Samoa (6.6) (Table 15.2). We had about one more person per unit than Guam, 2

more than the Virgin Islands, and 2 1/2 more than the United States median. Also, except for American Samoa, we were the most crowded: although almost 3 in every 4 occupied units in American Samoa had more than 1 persons per room, about half of our units fell in that category, compared to 1 in 4 in Guam and the Virgin Islands, and less than 1 in 20 in the United States.

More than 87 percent of the occupied units in the United States in 1980 had 1 or more vehicles available. The CNMI was just about as mobile (85 percent), more mobile than American Samoa (44 percent) and Virgin Islands (66 percent), but somewhat less mobile than Guam (94 percent).

Our average occupied unit was worth only about 1/5 of units in the United States. In fact, in 1980 our units were worth less, on average, than those of any of the other territories. On the other hand, our contract rent was somewhat more than what American Samoans paid, but quite a bit less than units in the United States, Guam, or the Virgin Islands.

The summary data for housing show that as of 1980 our housing conditions were somewhat better than those in American Samoa, but not as good as the housing conditions in the United States, Guam, or the Virgin Islands.

The 16,780 persons living in the Commonwealth in 1980 constituted the smallest population of any of the U.S. territories (Table 15.3). We had more than twice as many persons per household as in the United States (5.4 compared to 2.8), more than Guam (4.1) or the Virgin Islands (3.3), but less than American Samoa (7.1). A larger part of the population of Guam lived in group quarters than our population, mostly because of the military, but our population in group quarters was more than that found in the United States, probably because of construction and other non-institutional group quarters.

Table 15.3 Selected Demographic Characteristics: 1980
Table inserted here.

Except for American Samoa, we were the youngest population of any of the territories, with our median age of 19.6, about 1 year more than American Samoa, but more than 10 years younger than the 30.0 for the United States in 1980. Almost half of our population was under 18 and only 3 percent was 65 years and over, compared to 28 percent less than 18 and more than 11 percent 65 and over in the States.

Our mean age at first marriage in 1980 fell between that of American Samoa and Guam. Our percents currently married were not very different from the percentages found in the States; adults on Guam were more likely to be married, those in American Samoa and the Virgin Islands less likely to be married.

In 1980, we had higher fertility than the United States or any of the other territories. The average number of children ever born per women 35 to 44 for the CNMI was 5.2 compared to 2.6 for the United States (CNMI having twice the number of children per woman), 3.5 for the Virgin Islands, 2.6 for Guam, and 4.9 for American Samoa. On the other hand the total fertility rate from the 1976 to 1980 period for American Samoa was slightly more than our own. Our younger women were having higher fertility than American Samoan women, but their older women were having higher fertility.

Although it seemed like we were experiencing a wave of immigrants in 1980, actually American Samoa, the Virgin Islands, and Guam all had larger proportions of persons born elsewhere (Table 15.4). In fact, almost half of the populations of Guam and the Virgin Islands were not born there. On the other hand, only 6 percent of the United States population was born elsewhere compared to 28 percent for the CNMI.

Table 15.4 Selected Social Characteristics: 1980
Table inserted here.

On the other hand, our recent movements were very similar to those in the United States. On the other hand a larger percentage of persons on Guam moved in the 5 years before the census (mostly because of the large

proportion of military), but fewer in American Samoa.

Fully 95 percent of the CNMI population 5 years and over spoke a language other than English at home, compared to 96 percent of those in American Samoa, and 64 percent on Guam. Only 11 percent of the United States population and 19 percent of those in the Virgin Islands spoke a language other than English at home.

Slightly more of our males and less of our females were in the labor force in 1980 than the United States labor force population (Table 15.5). For males, only Guam's participation was higher, but for females, only American Samoa had a smaller female labor force participation rate. As noted in chapter 10, our unemployment was artificially low; the same circumstances existed in American Samoa in 1980, also creating an artificially low rate there as well.

Table 15.5 Economic Demographic Characteristics: 1980
Table inserted here.

Our median household and family incomes were the lowest for any of the territories, although our per capita income for 1979 was somewhat more than that found in American Samoa. Also, except for American Samoa which was comparable, we had much larger proportions of our persons and families in poverty.

These summary population measures show that although we had attained Commonwealth status, we cannot say yet that we are in the American mainstream - in demographic, social, or economic terms. As we prepare for the 1990 Census, we will begin to develop a new measuring stick for our progress, to see how the decade of the 1980s has treated us.

SELECTED REFERENCES

Alkire, William
1978 The Coral Islanders, AMH Press.

Anson, (Lord) George
1748 A voyage round the world in the years 1740, 1741, 1742, 1743, 1744 compiled by Richard Walter. John and Paul Knapton, London.

Beers, H. P.
1944 American naval occupation and government of Guam, 1898-1902. Administrative Reference Service Report No. 6. United States Naval Office of Records Administration, Washington.

Brass, William
1975 Methods for Estimating Fertility and Mortality from Limited and Defective data, Chapel Hill: International Program of Laboratories for Population Statistics.

Cho, Lee-Jay
1973 The own-children approach to fertility estimation: An elaboration In International Population Conference, Liege 1973. Liege: International Union for Scientific Study of Population.

Cho, Lee-Jay, Robert Retherford and Minja Kim Choe
1986 The Own-Children Method of Fertility Estimation. Honolulu: University of Hawaii Press.

Coale, Ansley J., and Paul Demeny
1966 Regional Model Life Tables and Stable Population. Princeton: Princeton University Press.

Coale, Ansley J., and James Trussell
1974 Model fertility schedules: Variation in the age structure of childbearing in human population. Population Index 44:203-13.

1975 Erratum. Population Index 41:572.

1978 Technical note: Finding the two parameters that specify a model schedule of marital fertility: Population Index 44:203-13.

Corte Y Rvano Calderon, Felipe Maria dela
1876 Description in general and in Detail of the Mariana Islands. Historia de las Islas Marianas desde la llegada de los Espanoles hasta el 15 de Mayode 1870. n.p. ms.

Freycinet, Louis de
1829 Voyage author du monde fait par order du Roi, sur, les corvet tesde S.M.L.'URANIE et LA PHYSICIENNE, pendent les annees 1817, 1818, 1819, et 1820. Atlas Historique, Paris.

Fritz, G.
1904 Die Chamorro. Eine Geschichte und Ethnographie der Marianen. Ethnology giches Notiblatt, Band, Heft 3, pp. 25-111.

Hajanal, John
1953 "Age at marriage and proportions marrying." Population studies 7(2):111-136.

Henry, Louis
1961 Some data on natural fertility. Eugeunis Quarterly 8:81-91.

Herman, R.
1910 Zur Statistics der Eingeboreneu de deutschen Subsegebretes Zeitschrift for Kolonial politik, Kolonialreeht und Kolonial wissenschaft, pp. 7-8.

Ibanez y Garcia, Luis
1886 Hisotoria de las Islas Marianas con su derrotero y de las Carolinas y Palaos, desde el descubrimiento por Magallanes en el ano 1521, hasta neustra dias.

Levin, Michael J. and R. D. Retherford
1982 The effect of alternative matching procedures on fertility estimates based on the own-children method. Asian and Pacific Census Forum 8(3):11-17.

1986 Recent Fertility Trends in the Pacific Islands, Number 101: Papers of The East-West Population Institute.

Midkiff, Ann A., and Minja Kim Choe
1978 OWCH3: A Program to Compute Estimates of Age-Specific Birth Rates in the Recent Past from Own-Children Tables. Honolulu: East-West Population Institute, East-West Center. Photocopy Office of the Marianas District Planner 1974. Planning report on the Population: Marianas District, Manuscript.

Olive y Garcia, F.
1887 Islas Marianas, translated by M. Driver. M. Perez. Manila.

Retherford, Robert D., and Lee-Jay Cho
1978 Age-parity-specific birth rates and birth probabilities from census or survey data on own children. Population Studies 32:567-81.

Russell, Scott
1982 Of wood ships and iron men: an historical and archeological survey of the Brig Leonora. Saipan, CM: Micronesian Archeological Survey, Office of the High Commissioner, TTPI.

Safford, W. E.
1901 The Mariana Islands: Notes compiled by W. E. Safford from documents in the archives at Agana, the capital of Guam and from early voyages found in the libraries of San Francisco. Tangoed, Chilticothe, Ohio.

Shryock, H. S., Siegel, J. S. and Associates
1976 The Methods and Materials of Demography, (Studies in Population) Condensed Edition by Edward G. Stockwell.

Smith, Jerome
1972 Integenerational land transactions on Rota, Mariana Islands; A Study in Ethnographic History. PhD dissertation, V Arizona, Tucson.

Sphehr, Alexander
1954 Saipan. The ethnology of a war-devastated island. Fieldiana: Anthropology, Vol. 41. Chicago.

1957 Marianas prehistory, Archaeological survey and excavation on Saipan, Tinian and Rota. Fieldiana: Anthropology, Vol. 48. Chicago.

Taeuber, I, and C. C. Han

1950 Micronesian islands under United States Trusteeship: Demography paradox. Population Index 16:93-155.

Taylor, J. L.
1951 Saipan: A study in land Utilization. Economic Geography 27(4):340-347.

Thompson, L.
1945 The native culture of the Marianas. Bernice P. Bishop Museum Bulletin 185. Honolulu.

Underwood, Jane H.
1973 Population History of Guam: Context of Microevolution. Micronesica 9(1):11-44.

Wheeler, J.
1900 Report on the island of Guam. Military Information Bulletin 21, War Department Document 123. Washington.

UNITED NATIONS PUBLICATIONS:

Annual Reports to League of Nations, on the Administration of the South Sea Islands under Japanese Mandate: 1920, 1924-30, 1934-37.

Annual Reports to the United Nations on the Administration of the Trust Territory of the Pacific Islands under the United States Government.

U.S. BUREAU OF THE CENSUS PUBLICATIONS:

Census Report, 1967.

Census Reports, 1970 Decennial Census.

Census Report, 1973.

Census Reports, 1980 Decennial Census:

PC80-1-A57A, Number of Inhabitants
PC80-1-B57A, General Population Characteristics
PC80-1-C/D57A, Detail Social and Economic Characteristics
HC80-1-A57A, General Housing Characteristics
HC80-1-B57B, Detailed Housing Characteristics
Summary Tape File 1
Summary Tape File 3

Census Reports, Estimates and Projection Series P25, No. 1009.