

MICHAEL J LEVIN
POPULATION DIVISION
BUREAU OF CENSUS
WASHINGTON, DC 20233

A STATISTICAL PROFILE OF
SAMOANS IN THE UNITED STATES

Part I: Demography

Geoffrey Hayes
East-West Population Institute
Honolulu, Hawaii 96848

and

Michael J. Levin
Racial and Ethnic Statistics Programs
Population Division
Bureau of the Census
Washington, D.C. 20233

This paper is in draft, written for the Northwest Regional Educational Laboratories, Portland, Oregon. The numbers in the text and tables have not been verified. PLEASE DO NOT CITE.

12/7/83

INTRODUCTION

The selected category "Samoan" appeared for the first time as a separate category on a United States census in 1980. Before 1980, estimates of the number of Samoans in the United States were little more than approximations based on a limited supply of poor quality migration statistics, some community-level studies, and the assessments of community leaders. The 1980 census was therefore the first actual count of Samoans using a specified category, and the first to describe the demographic and socio-economic characteristics of this immigrant group.

The numbers of Samoans, both total counts and for selected characteristics, in this paper have been derived from the "race" question on the U.S. Census. The race question was asked of all persons in the United States. The numbers for any particular ethnic or racial category will depend on the definition employed. The concept of race used by the Census Bureau is based on self-identification, that is, the data represent self-classification by people according to the race with which they identify. Race does not denote any clear-cut scientific definition of biological stock. Since no attempt is made to distinguish number of generations or degree of affiliation, other definitions of Samoan ethnicity may result in different numbers.

Although the 1980 census is the principal source of data on Samoans, information can also be taken from ethnographic and social surveys conducted in the recent past. This paper is intended to provide a broad overview of the demographic and economic situation of Samoans in the United States

rather than a detailed analysis of any one issue or community. For this reason, not all of the community-level data contained in the references have been used. Although the 1980 United States census reported Samoans in every state, a state-by-state comparison is beyond the scope of this paper. Rather, we have focussed particularly on the Samoan populations of Hawaii, California and Washington, with the remainder of the population treated as one group - despite the geographical dispersion. In some subject areas the population of American Samoa in 1980 is also described to provide comparative perspective.

TOTAL POPULATION

The 1980 census counted 41,948 Samoans living in the United States on April 1, 1980 (Table 1). Intercensal comparative methods cannot be used to determine the relative accuracy of this figure because Samoans were not treated as a separate category in 1970. The growth of the Samoan population since the 1980 census also cannot be determined since there are no accurate immigration statistics. Assuming that immigration continued at the same estimated rate of 1900 per year as in the 1976-79 period and that natural increase averaged 3.0 percent per year, a 1983 population of about 50,000 would be possible. Until more precise immigration figures become available, this 1983 population estimate should be used cautiously.

POPULATION DISTRIBUTION

Although the 1980 census found Samoans in every state, about 90 percent were in the Western region of the country. The most important concentrations were in California (48 percent), Hawaii (33), and Washington (4). These three states accounted for 86 percent of the population; no other state contained more than 2 percent of the total (Table 1). The Samoan population of the United States outnumbered the population of American Samoa by almost 10,000, or about 30 percent.

The Samoan population of the United States is highly urbanized. About 96 percent of Samoans lived in urban areas in 1980 and 87 percent lived either in central cities (43 percent) or on the fringe of such cities. Only 4 percent (1,643) lived in rural areas in 1980.

AGE COMPOSITION

High rates of natural increase among Samoans in Samoa and among immigrants have produced a very young Samoan population in the United States. As table 1 shows, the median age of Samoans was 19.5 in 1980, substantially below the United States median of 30 years (U.S. Bureau of the Census, 1983:23). Of all the selected racial groups reported in the 1980 census, Samoans had the lowest median age and the next youngest group - Eskimos - had a median age almost two years higher (USBC, 1983:50).

The median age of Samoans in Hawaii (17.5 years) was two years below the total Samoan population (19.5) and slightly more than one year

below the median of 18.8 reported for American Samoa. Hawaii's lower median age implies either that fertility was higher there than elsewhere in the United States or that Hawaii attracted younger immigrants from Samoa - or some combination of the two. The median age of Samoans outside of the major concentrations in the West (22.7 years) was substantially higher than that reported for the Samoan population as a whole, California or Washington, pointing to important differences in population dynamics of the various areas.

The median age was about the same for males and females except in Hawaii where the male median was slightly lower than the female (tables 2 and 3). This age differential also appeared in the American Samoa data.

Hawaii's slightly younger population showed a greater concentration in the 0-14 year age group than in the other locations (Table 4). The 0-4 age group was 15.3 percent of the total in Hawaii compared to 13.0 percent in California and 13.8 percent in the total Samoan population. The proportion of the Hawaii population aged 0-4 was not only greater than reported elsewhere in the United States, but was also higher than in American Samoa (14.8 percent). While the difference between the two figures may not be statistically significant, it nevertheless would appear that in this respect at least the structure of the Samoan population in Hawaii is more like that of American Samoa than the Samoan population on the mainland. Census data do not show that Samoans in Hawaii have higher fertility rates than their counterparts in California, elsewhere in the United States, or in American Samoa, although they do tend to have their children at younger ages. It is possible that more American Samoan women with younger children immigrate to Hawaii, an easier and

less expensive trip than to California or Washington. It is also possible that young children from other families accompany families to Hawaii to take advantage of better schools and medical facilities; they obtain the advantages of a more developed economy, while remaining a fairly short plane trip away from home.

Since in broad terms the age structure of the males and female population was identical (tables 5 and 6), if immigration was selective of one age-sex category over others it was not evident in the age structure.

Some variation between regions is apparent in the proportion of the female population in the child-bearing years (15-44). Hawaii had the smallest proportion (46 percent) while the highest was found in the group of states other than California, Hawaii, and Washington (table 6). In this respect Hawaii was more like American Samoa than California or the other states.

There was little regional variation in the proportion of the Samoan population 65 years and over, although Washington had the smallest (2 percent) and American Samoa the largest (3 percent). Hawaii was no different than California or the Samoan population as a whole. The Samoan population is basically a young, migrating population, so that too few families have become established to create an aging population, one with a large proportion of older people.

The 15-64 age group, normally the most active economically, varied from 55 percent in Hawaii to 68 percent of the population outside the major concentrations (Table 4). This variation was also apparent in the "dependency ratio" which shows the number of "dependents" which must be supported by every 100 "workers". This ratio was 83 in Hawaii compared to 71 in California, 69 in Washington and 78 in American Samoa. The

balance of the states taken together had a ratio of 48. By contrast, the dependency ratio for the total United States population in 1980 was 51, indicating that every two workers had to support approximately one dependent. In Hawaii, every two Samoans of working age had to support about 1.7 dependents, a considerably greater burden than for the United States as a whole or for Samoans elsewhere (including American Samoa).

The contrast between the age structure of the Samoan population of the United States and the total United States population is illustrated by Table 7 and Figure 1. A much larger proportion of Samoans was under 20 years of age while a larger proportion of the total United States population was over age 44. The nature of the "dependency burden" in the two populations is therefore quite different: Samoans face a "youth dependency" problem characteristic of many developing countries; the United States has an "aged dependency" problem typical of industrialized countries which have passed through the demographic transition.

In summary, the Samoan population was the youngest of all the selected Asian-Pacific minorities in the United States in 1980 with those in Hawaii tending to be younger than their counterparts elsewhere. The dependency burden faced by working-age Samoans is greater than for most other groups in the United States and is greater for Samoans in Hawaii than elsewhere. So far the burden of dependency is from youth, rather than from the aged.

SEX COMPOSITION

The Samoan population of the United States had a sex ratio of 103 in 1980, virtually identical to that of American Samoa (table 8). California had the most even balance between the sexes while Washington and the other states showed considerable male-dominance. Hawaii differed from

the other regions in that its sex ratio of 98 showed a small surplus of females. The relative surplus was particularly noticeable in the 40-54 age group and since this is the same group which had a high sex ratio in California, male out-migration from Hawaii to California seems likely. In broad terms, the working-age Samoan population appears to be female-dominant in Hawaii and male-dominant in California. While the difference between the sex ratios of the 15-64 population in the two states was not large (103 in California compared to 96 in Hawaii), an additional measure of dependency in Hawaii beyond that seen in the age composition is implied.

FERTILITY

While information on the fertility of Samoan women has been collected in a number of surveys (Cook, 1983; Lyons, 1980; Harbison and Weishaar, 1981), not all of it has been published and no studies have focussed on mainland Samoans. The 1980 census is therefore the only source of fertility data for the total Samoan population in the United States.

Samoans have high fertility relative to other ethnic groups reported in the 1980 census. Although the number of children ever born to women aged 15-24 was higher among Aleuts and Eskimos, no other racial group had higher fertility than Samoans in the 25-34 and 35-44 age groups (table 9). If the number of children ever born to women aged 35-44 is taken as an indicator of completed fertility, the average Samoan woman would have about 4.3 children at 1980 fertility rates. By contrast, Japanese and Korean women in the United States would have about 2 children. Of the other Asian and Pacific Islander groups, only Guamanians had a completed fertility rate approaching 4. The Hawaiian rate of 3.3 was exactly one child less than the Samoan rate.

There was little difference in the fertility rates of Samoan women in Hawaii and California. Although those aged 15-34 in Hawaii had more children on average than their counterparts in California, the number of children ever born to women aged 35-44 was similar (table 9).

Some variation between the fertility levels of Samoans living in different communities on the island of Oahu has been noted by Harbison and Weishaar (1981). Migrants who settle in the more cohesive, conservative and less urbanized Samoan communities tend to have higher fertility than those who settle in the less integrated, urbanized communities near Honolulu. This difference appears to be partly attributable to migrant pre-selection rather than to the effects of migration itself. Migrants to the more urban communities tend to have higher pre-migration education levels and lower pre-migration fertility than other immigrants. Those who migrate to the less urban communities have generally spent a larger proportion of their reproductive lives under the influence of rural Samoan norms regarding family size and contraceptive practice - both because they migrate later than other women and because they are less exposed to modernizing influences in Hawaii (Harbison and Weishaar, 1981:270-272).

Migrant pre-selection may also account for the higher fertility of Samoan women aged 15-34 in Hawaii compared to those in California. Families and individuals of rural origin and higher fertility may find it easier to migrate to Hawaii which has more of the socio-cultural character of Samoa than can be found in California. Furthermore, since in 1980 a larger proportion of Hawaii's Samoan population was Samoa-born than is the case in California (61.5 percent compared to 48.6 percent), it is likely that Samoan women in Hawaii had been less exposed to those aspects of urban

life which are usually associated with fertility decline than their counterparts in California.

Analysis of 1980 census data using the "own children" method (Levin and Retherford, 1983), indicates that the fertility rate of Samoan women in the United States has been declining since the mid-1960s. The total fertility rate (TFR) decreased from 5.6 children in the 1965-69 period to 4.1 in 1974-78, a 27 percent reduction during the period (table 10). Fertility decline was particularly apparent among women aged 30 years and older although only a small decrease had occurred in the 15-29 age group.

Although information is lacking on the contraceptive practices of Samoan women throughout the United States, survey data from Hawaii indicate that two-thirds of Samoan women have used contraceptives at some stage of their reproductive lives (Harbison and Weishaar, 1981:270). Baker (1976:14), using the same data set, reported that only 20 percent of women aged 18 and over used contraceptives, a figure presumably referring to the proportion currently practising contraception whereas the former figure refers to the proportion which had ever used contraception. There is some evidence to indicate that contraceptive use by Samoan women in Hawaii is greater in the more urbanized communities than in the more conservative rural ones (Harbison and Weishaar, 1981:270).

The ideal family size for Samoan women in Hawaii in 1975 ranged from an average of 4.4 for women aged 25-30 to 9.3 for women 50 years and older (Baker 1976:15). It is extremely unlikely that this difference was simply a function of age. Rather, younger women accepted family-

size norms closer to (but still higher than) the urban ideal, whereas older Samoan women beyond their child-bearing years probably recall the reproductive values of their rural past.

Whether we use the TFR calculated from vital statistics (table 11) or the number of children ever born to women nearing completed fertility (table 9), Samoan women in Hawaii around 1980 were having an average of just over four children. Although the TFR is not a direct reflection of ideal family size, the broad implication is that Samoan women in Hawaii were on average having about the number of children they desired.

As table 11 shows, the overall fertility of Samoans in the United States in the late 1970s was lower than in American Samoa (TFRs of 4.1 and 4.7, respectively), but not by a very large margin. Below the age of 25, Samoans in the United States had higher fertility rates than their age-mates in American Samoa, but above the age of 30 the reverse was true.

In summary, the fertility of Samoans in the United States is high by United States standards. Samoan women were having just over four children on average in the late 1970s which is approximately double the number necessary for replacement. The crude birth rate in 1980 of 35.1 per 1,000 and the crude death rate of 5.2 per 1,000, made about 3.0 percent natural increase. At this rate of increase, the Samoan population would double in 23 years from natural increase alone - even if immigration ceased. It is more likely, however, that fertility will continue to fall during the 1980s. If the TFR declines at the same rate as it did during the 1970s, Samoan women would be having one less child on average by 1990 (TFR of 3.0); but at this rate of decline Samoan fertility would not reach the level presently experienced by some Asian

minority groups (e.g., Chinese and Filipino) until the end of the century.

Because such a large proportion of the Samoan population of the United States has recently immigrated, reproductive attitudes and values formed in the Samoan islands will have as much effect on fertility as the socio-cultural conditions migrants encounter in the United States. Of course, fertility levels have been dropping steadily in American Samoa over the past two decades (figure 2). Fertility decline in Western Samoa has lagged behind American Samoa by about a decade but a steady decrease was also apparent there during the 1970s. If these trends continue, it can be expected that new immigrants to the United States will bring with them family-size norms somewhat closer to those of the United States as a whole.

MORTALITY

Samoa mortality statistics are not available for the United States as a whole, so a detailed analysis of Samoan mortality patterns for the total population is not possible. In Hawaii, where Samoan deaths have been reported since 1963, the crude death rate in 1980 was 5.2 per 1,000, up from an estimated 4.8 per 1,000 in 1975 (Franco n.d.:45). If we apply the age-specific death rates derived from registered deaths in Hawaii to the total population of the United States, the result is a crude death rate of 5.3 per 1,000. This relatively low death rate is partly a function of the large proportion of the Samoan population in those young age

groups which tend to have low mortality rates. If the 1980 age-specific death rates of Samoans in Hawaii are applied to the total United States population, a crude death rate of 15.5 per 1,000 is obtained compared to the 8.8 per 1,000 which was observed. Samoan mortality seems to be actually higher than total United States mortality, although the crude death rate is lower.

The data presently available are insufficient to explain Samoan mortality patterns in any detail, but some survey data from Hawaii may apply to the Samoan situation as a whole. While there is evidence to suggest that Samoans in Hawaii have difficulty using modern health care facilities effectively and tend to seek professional treatment much later in the course of a disease than other ethnic groups (Cook, 1982:138), there is no evidence to indicate that this affects mortality rates. The infant mortality rate for Samoans in Hawaii during the 1975-78 period (10.3 per 1,000 live births) was lower than the state average (12.6) and comparable to Caucasian and Japanese rates (Gannaway et al., 1981). Although the neonatal mortality rate (deaths to infants under 28 days per 1,000 live births) may have been higher among Samoans than in the state as a whole (9.2 compared to 8.8), because of the small number of cases the difference is probably insignificant and the Samoan rate is the same as for Filipinos and Koreans (Gannaway et al., 1981).

While this evidence is far from conclusive for Samoans elsewhere, it appears unlikely that infant mortality can account for the relatively higher mortality among Samoans as a whole compared to the U.S. total population. The hypothesis that Samoans have higher than average adult mortality is somewhat more plausible.

Several researchers (Prior et al, 1966; Beaglehole et al., 1980) have studied the tendency toward obesity, hypertension and high rates of circulatory disease in Polynesian populations. Recent studies of migration and "modernization" on blood pressure, body weight and hypertension levels of Samoan migrants to Hawaii have produced ambiguous results (McGarvey and Baker, 1979; Hanna and Baker, 1979). The degree to which blood pressure increases following migration appears to depend on the region of Samoa from which migrants originated: those from rural areas exhibited increased blood pressure while those from more urbanized areas of Samoa were no different from their counterparts in Samoa who did not emigrate (McGarvey and Baker, 1979:475). Furthermore, Samoan migrants living in urban Honolulu had lower age adjusted blood pressure than migrants living in the presumably less stressful rural districts of Oahu (Hanna and Baker, 1979:491). In fact, the findings suggest a curvilinear relationship between modernization and blood pressure in Samoans. Samoans least integrated into modern life seem to have the lowest pressure, Samoans intermediate in exposure to modern life seem to have the highest levels of blood pressure, while those most integrated into modern life in Hawaii seem to have somewhat lower blood pressure levels (McGarvey and Baker, 1979:475).

One of the difficulties in interpreting these results is that those migrants with highly elevated blood pressure may already have died, thus biasing the sample of survivors. Unpublished cause of death statistics reported by Hanna and Baker (1979:493) indicate that a significant number of Samoans below age 50 died of "cardiovascular insult" in Hawaii between 1974 and 1978. The authors point out that the younger age groups of Samoans seem to have higher mortality rates from cardiovascular disease than might be expected.

MIGRATION

Of the 42,000 Samoans counted in the 1980 census, 22,600 (54 percent) were born in either American or Western Samoa and were therefore "lifetime" migrants to the United States (table 12). The Western Samoa born numbered 13,200 or about 59 percent of all migrants while the balance were born in American Samoa. Almost one-third of all Samoans in the United States in 1980 were born in Western Samoa while less than one-fourth (22 percent) were born in American Samoa.

The minority status of the American Samoa born is particularly apparent in California where this group comprised only 16 percent of the Samoan total. While half of all Western Samoa born were in California, only one-third of American Samoa born were there. On the other hand, half of the American Samoa born were in Hawaii. Although there were more Samoan born in California than Hawaii, the proportion of Samoan born was much larger in Hawaii (62 versus 49 percent). Conversely, a larger proportion of California's Samoan population was born in the United States (51 percent compared to 49 percent).

In the absence of cross-tabulations by place of birth and socio-economic characteristics, it is impossible to determine the extent to which Samoans born in Western Samoa differ from those born in American Samoa. It should be noted, however, that place of birth cannot be directly translated into place of long-term residence or citizenship. In Shu and Satele's 1976 study of 410 Samoan households in Southern California, 65 percent of householders had spent the major part of their lives in American Samoa and only 7 percent in Western Samoa (1977:75). Many of those who were born

in Western Samoa may have spent sufficient time in American Samoa to acquire similar educational or occupational characteristics as the American Samoa born.

The category of "lifetime migrant" includes those who immigrated as young children as well as those who immigrated as adults. Of particular importance to the issue of acculturation and education, however, is the period of time the average immigrant has spent in the United States. The census does not provide much detail, but as table 23 shows, the 18 percent of Samoans over the age of five years in 1980 were abroad in 1975 can be considered recent immigrants. It is important to note that the 22 percent of Hawaii's Samoan population which had immigrated during the five years prior to the 1980 census was a substantially higher proportion than California's 14 percent and four percentage points higher than the Samoan total. Since recent migrants tend to have greater difficulty obtaining employment and housing, these difficulties will affect a larger proportion of Hawaii's than California's Samoans. And although there are more Samoans in California than in Hawaii, these data suggest that the absolute number of recent migrants is larger in Hawaii. Of course, Hawaii has for a long time served as a staging area for onward migration to California (Pierce, 1954).

If the Samoa-born respondents in Shu and Satele's 1976 survey were representative of Samoan migrants in the United States, two-thirds had immigrated to this country during the previous 15 years, and 24 percent in the previous 5 years (table 14). Of the 50 householders interviewed in Hawaii by Franco in 1983, 40 percent had immigrated during the previous nine years (table 15). The sample size in this case is small but the results broadly confirm what the census suggests - that a substantial proportion of Samoan migrants were recent arrivals.

Although the age at which the average Samoan immigrates to the United States is a useful indicator of the stage in the life-cycle when the first direct experience with American society occurs, unfortunately good data on this topic are lacking. Of those Samoan adults in four Oahu communities who were interviewed by Baker in 1975, the average age of migration was 34.5 years for males and 31 years for females (Baker 1976:5). Since these data seem to have been collected only for adults, however, they do not indicate the average age of immigration for the Samoan population at that time, only the age for those who were already adults; as the individuals in migration streams mature the average age of migration can be expected to decrease. In any case, adult Samoans seem to emigrate at older ages than is typical among other Polynesian migrants (Hayes, 1983; Baker, 1976). If these average ages are representative of present migrants in the United States, they carry extremely important implications for education, language acquisition and acculturation in general. These are relatively advanced ages to be learning how to function in a new socio-cultural system, assuming that previously acquired education and experience were inadequate.

Samoan migration is rooted in 19th century international rivalry which resulted in the partition of the islands into two groups which eventually came under the separate control of New Zealand (Western Samoa) and the United States (American Samoa). Historical conditions of a political, economic, and military nature have continued to influence migration patterns, even when subjective motivations of the immigrants are not considered.

The determinants of Samoan migration to the United States include not only those conditions which tend to push migrants from Samoa and pull them into

the United States, but also factors which make emigration to New Zealand attractive. Since 1975, Samoan immigration to New Zealand has slowed substantially because of more restrictive immigration laws and a severe economic recession. As emigration to New Zealand has become more difficult, migration to the United States has increased (Franco, 1979; Hayes and Levin, 1983). While political, legal and economic conditions are fundamental,

While political, legal and economic conditions are fundamental, they are facilitating or retarding factors rather than direct causes. The level of population growth in American Samoa in recent decades has been acceptable in terms of Samoan culture, but the pressure on agricultural resources is evident. Emigration can be seen as a demographic response to a limited resource base.

A large number of surveys have sought information on the subjective motivations of Samoan migrants, but few have handled the topic with much psychological sophistication. Also, since the methods employed are rarely disclosed it is difficult to compare results. In a recent survey of Samoans living in the Kalihi area of Oahu, "kinship-related" reasons were cited by 23 of the 50 respondents, and 17 cited their children's or their own education as the reason for migrating (Franco 1983:11). Education of children appears in a number of surveys as either the primary reason for immigrating or among the most important (Baker, 1976; Alailima, 1966; Ablon, 1971; Enesa, 1977), but the relative weight given to this motivation seems to depend on the way the information was obtained. Some surveys have emphasized "economic" motivation such as the desire for wage employment and the opportunity to increase prestige by the generosity that a money income permits (Alailima, 1966; Baker, 1976; Forster, 1956), while others found

little evidence of similar motives (Franco, 1983; Enesa, 1977). There is also much variation in the emphasis placed on Samoan social structure as a specific motivation for migration. Shu and Satele stress the desire of many young Samoans to "traditional constraints" (1977:10), while Rolff mentioned the wish to escape the "matai system" (1978:58). Other researchers make no mention of such motivations.

Studies of migrant motivations are difficult to carry out and none of the surveys on this topic for Samoans can be considered adequate from a socio-psychological viewpoint. Motives for migration will differ according to age, sex, marital status, place of origin and other variables, but a relatively large sample size is required if the results are to be statistically adequate. Most studies have used small samples. Since Samoan immigration to the United States has now achieved the character of a "mass movement", the motivations of individuals are an inadequate basis either for understanding the nature of the movement as a whole or for predicting the future course of immigration.

POPULATION PROJECTIONS

In a population experiencing substantial immigration or emigration, realistic projections are extremely difficult to make. Even without the added complication of migration, a population projection simply indicates the consequences of specific assumptions about fertility and mortality rates and should not be confused with a prediction. Predictions are only possible if some factor is held constant with absolute certainty; this is never realistic in demographic matters.

Table 16 shows the projected population of Samoans in the United States to the year 2000 based on five different sets of assumptions. The 1980 populations have been adjusted upwards by 10 percent to allow for liberal assumptions from various estimates of the Samoan population (see Hayes and Levin, 1983) and rounded to the nearest 500. The total population has been broken down into three categories: Hawaii, California and the balance of the country. The distribution between these areas is assumed constant throughout the projection period and the same rates of increase are applied to each area. If immigration to Hawaii increases or decreases relative to California or the other states then both the populations of the areas and their proportions of the total would change.

The projections were made by simple mathematical methods assuming a geometric rate of change. The assumptions used in the projections are shown in figure 3.

/ Figure 3 about here /

Projection I shows what would happen if all immigration ceased and natural increase continued at the rate of 3.0 percent each year. This is about the rate of increase in the late 1970s so this projection is an approximate indicator of the natural growth potential in the Samoan population exclusive of immigration. By 2000, the total population would increase by 38,000 to 84,000 or 83 percent above 1980. In projection II, the same rate of natural increase is assumed but immigration continues at (or probably somewhat higher than) the rate estimated for the late 1970s providing natural increase remains at 3.0 percent (Hayes and Levin, 1983). In this case the total population would increase to 182,000 by the year 2000 or 98,000 more than without immigration, and would be the gross increase

since it includes, in effect, the children born to immigrants as well as the immigrants themselves.

A declining rate of immigration from an annual rate of 4.1 percent in 1980 to 2.0 percent in 2000 was assumed in projection III along with a 3.0 percent constant annual rate of natural increase. A decline in the absolute number of immigrants is not implied, since the total population is increasing rapidly. The difference between this projection and projection II in the 2000 population is 34,000, showing the reduction to be expected from a declining immigration rate. Both natural increase and immigration are assumed to decrease by 50 percent by 2000 in projection IV, resulting in a total population of 131,000 in the year 2000 or 85,000 more than the estimated 1980 population of 46,000.

In projection V immigration is held constant at 4.1 percent annually while natural increase declines at the same rate as in projection IV. The difference between the 2000 population of projection IV and V (28,000) shows the effects of a continuing high rate of immigration in the context of declining fertility.

It is difficult to know which of these projections contains the most realistic assumptions. Natural increase is unlikely to remain constant at the 3.0 percent rate assumed in the first three projections. The declining rates of projections IV and V are probably more realistic. The constant rate of immigration in the context of an increasing population as in projections II and V is unrealistic since it implies a constantly increasing absolute number of immigrants. The most realistic of these projections, then, is projection IV which implies a total population of 131,000 in 2000. Under these assumptions Hawaii's Samoan population would grow to 44,000, California's to 62,000, and there would be 25,000 elsewhere in the United States.