A Brief Description of the Methodology for the 2000 Census-Based Population Projections

The 2000 Census-Based Population Projections basically utilizes the Cohort-component Method. Population change is the result of three demographic processes namely: fertility, mortality and migration. The methodology involves projecting the levels and trends of these three components. The last component, migration, is not considered at the national level of population projections since it is assumed that international migration has as yet very little effect on the national total population.

A. Base Population

The base population used in these projections was the population enumerated during the 2000 Census of Population and Housing (CPH). The final population count as of May 1, 2000 was 76,504,077 which was forward-survived to July 1, 2000 after evaluating the age-sex distribution using indexes in assessing the quality of age-sex data. These indexes include the UN Age-Sex Accuracy Index, Myer's Index, Whipple and Bachi indexes.

Although the indexes indicated minimal age heaping and digit preference, the proportion of population aged 0-4 years was smaller than the proportion of population aged 5-9 years in 58 out of 79 provinces. This is inconsistent with the still relatively high and slowly declining fertility observed at the national and regional levels based on the quinquennial National Demographic Surveys conducted from 1968 to 2003, implying a young population or specifically a larger population aged 0-4 compared to the population aged 5-9. A close examination of the census survival ratios for these age groups and fertility and migration rates revealed a likely larger population aged 0-4 than what was reported in the census for the same age group. The smaller size of the population aged 0-4 compared to the population aged 5-9 for the 58 provinces in question implies under-enumeration of population aged 0-4 years. As observed in most countries, the population below age 1 is the most under-enumerated. To adjust the population below 1 year of age, the number of births at the national level for year 2000 was estimated based on estimates of total fertility rates (TFRs) and age specific fertility rates (ASFRs) from the 1998 and 2003 National Demographic and Health Survey (NDHS). In order to obtain an estimate of the population below 1 year of age (Po) in 2000, these births were forward-survived to age below 1 year by applying the 1995 life table values of the proportion of infants born in a year who will survive to the end of that year calculated by Flieger and Cabigon (1999).

The difference between the estimated Po and the enumerated Po in year 2000 totaled 146,582. This number was added to the July 1, 2000 population aged 0 after extrapolating the enumerated May 1, 2000 population using the average annual population growth rate between May 1, 1990 and May 1, 2000. The 146,582 difference in Po was distributed to all provinces based on their population size, except for the NCR and ARMM provinces. The populations aged 0-4 and 5-9 for the NCR were not adjusted. However, a separate method was used to adjust the age distributions of the ARMM provinces as they greatly deviated from the general expectation of a pyramid-like age distribution.

B. Fertility

The national and regional age-specific fertility rates (ASFRs) and total fertility rates (TFRs) estimated from the 2003 NDHS, 2000 Census, the 2000 Family Planning Survey (FPS) and the 2000 Vital Registration System were examined to arrive at the most reasonable level and age pattern of fertility around 2000 as the base for projecting fertility. The national estimates from the cited sources are shown in Table 1. It will be noted that the FPS and the Vital Registration System yielded similar ASFRs and TFR while the CPH showed much higher ASFRs at ages 30 and over; thus yielding the highest TFR. The 2003 NDHS revealed the highest ASFRs at the two youngest age groups but the ASFRs at the older ages lie between the estimates from the other three sources.

The 2003 NDHS national and regional estimates of fertility were adopted as the base fertility estimates for the nation as a whole and for each of the regions, respectively. The reasons are as follows: (1) the ASFRs at the younger ages are consistent with what has been observed with earlier NDHSs and with those of most developing countries; (2) the ASFRs at older ages and the TFR lie between estimates from the other sources implying that the true estimates may lie between the highest and the lowest estimates; and (3) the source of the estimates is a pregnancy history from which fertility can be estimated for various periods before the survey which may be more stable compared to the point estimate derived from the Vital Registration System, recent births from the FPS and the indirect estimates from the CPH.

Table 1. National ASFRs and TFRs by Data Source: Around 2000

Age Group	2000 FPS	2000 Vital Registration	2000 CPH	2003 NDHS
15-19	0.02	0.03	0.03	0.05
20-24	0.12	0.14	0.13	0.18
25-29	0.17	0.16	0.19	0.19
30-34	0.14	0.13	0.17	0.14
35-39	0.10	0.09	0.14	0.10
40-44	0.05	0.04	0.09	0.04
45-49	0.01	0.01	0.07	0.01
TFRs	3.04	3.00	4.07	3.54

Table 2 depicts the regional baseline estimates of TFR based on the 2003 NDHS.

Table 2. Baseline Regional Total Fertility Rates

Region	TFR (2003 NDHS)
National Capital Region	2.8
Cordillera Autonomous Region	3.8
I – Ilocos	3.8
II – Cagayan Valley	3.4
III – Central Luzon	3.1
IVA – CALABARZON	3.2
IVB - MIMAROPA	5.0
V – Bicol	4.3
VI – Western Visayas	4.0
VII – Central Visayas	3.6
VIII – Eastern Visayas	4.6
IX – Zamboanga Peninsula	4.2
X – Northern Mindanao	3.8
XI – Davao	3.1
XII – SOCCSKSARGEN	4.2
XIII – Caraga	4.1
ARMM	4.2

For future trends of fertility for the country as a whole, three assumptions were made based on the time when replacement-level fertility, that is, NRR=1.0 will be attained. For the LOW series (rapid pace of fertility decline), NRR=1.0 was targeted for the year 2030. For the MEDIUM series (moderate pace of fertility decline), NRR=1 was targeted for the year 2040 and for the HIGH series (slow pace of fertility decline), NRR=1.0 by 2050. The TFRs in Table 3 were projected to follow an exponential growth curve to the year 2040. The 2003 NDHS age pattern of fertility was assumed to be the same up to the year 2040.

Table 3. Projected Total Fertility Rates for the National Population Under Varying Assumptions

Period	LOW	MEDIUM	HIGH
2000-2005	3.37	3.41	3.44
2005-2010	3.07	3.18	3.25
2010-2015	2.79	2.96	3.07
2015-2020	2.54	2.76	2.90
2020-2025	2.31	2.57	2.74
2025-2030	2.10	2.39	2.58
2030-2035	1.91	2.23	2.44
2035-2040	1.73	2.07	2.31

Note: NRR=1.0 was targeted for the year 2030 for the low series, 2040 for the medium series and 2050 for the high series

In projecting the TFR estimates at the regional level for each quinquennium from 2000 to 2040, only the medium assumption on fertility was adopted. The end period TFR estimates (i.e. for year 2040) were computed by maintaining the ratio of the regional TFRs for the base period to the national base period estimate (See formula below). The ratio method ensured that the projected regional TFRs shown are consistent with the projected national TFRs. In short, the degree of relationship between a regional TFR and the national TFR as of the base year, which is 2000, was maintained up to the end-year of the projection period, that is, year 2040, under the medium series.

$$TFR_{Regional,\,2040} = \frac{TFR_{Regional,\,2003\,NDHS}}{TFR_{National,\,2003\,NDHS}} * TFR_{National,\,2040}$$

To ensure that the overall projected regional births per quinquennium of the projection period was consistent with the corresponding projected national births, the projected regional TFRs were adjusted. This was done after deriving the quinquennial births at the national and regional levels.

The baseline provincial estimates of TFR were derived using the regional and provincial TFR estimates calculated by Palmore et al. (1993) and the regional TFR estimates from 2003 NDHS, and applying the following formula:

$$TFR_{Provincial,\,2000} = \frac{TFR_{Provincial,\,1990\,Palmore}}{TFR_{Regional,\,1990\,Palmore}} * TFR_{Regional,\,2003\,NDHS}$$

Meanwhile, the end-year provincial estimates (i.e. for year 2040) of TFR were derived by the following formula:

$$TFR_{Provincial,\,2040} = \frac{TFR_{Provincial,\,2000}}{TFR_{Regional,\,2003\,NDHS}} * TFR_{Regional,\,2040}$$

The projected provincial TFR estimates for each quinquennium were calculated using the exponential growth curve equation in the PEOPLE Software, with the base period and end-period TFR estimates for the provinces as input. The results of this calculation are shown in Table 4. The age pattern of fertility (as measured by ASFR) of the region was adopted for its provinces.

Table 4. Projected Total Fertility Rates by Region and by Province: 2000-2040 (Medium Assumption)

Region	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040
NCR	2.66	2.48	2.31	2.15	2.00	1.86	1.74	1.62
CAR	3.66	3.40	3.17	2.95	2.75	2.56	2.38	2.22
Abra	3.46	3.22	3.00	2.79	2.60	2.42	2.26	2.10
Apayao	3.94	3.67	3.42	3.18	2.96	2.76	2.57	2.39
Benguet	3.17	2.95	2.75	2.56	2.38	2.22	2.07	1.93
Ifugao	4.29	4.00	3.73	3.47	3.23	3.01	2.80	2.61
Kalinga	4.32	4.02	3.75	3.49	3.25	3.02	2.82	2.62
Mountain Province	4.24	3.94	3.67	3.42	3.18	2.96	2.76	2.57
Region 1	3.63	3.38	3.14	2.93	2.72	2.54	2.36	2.20
Ilocos Norte	3.17	2.95	2.75	2.56	2.38	2.22	2.07	1.93
Ilocos Sur	3.20	2.98	2.78	2.59	2.41	2.25	2.09	1.95
La Union	3.59	3.34	3.11	2.90	2.70	2.51	2.34	2.18
Pangasinan	3.87	3.60	3.36	3.13	2.91	2.71	2.53	2.35
Region 2	3.28	3.05	2.84	2.65	2.47	2.30	2.14	1.99
Batanes	3.36	3.13	2.91	2.71	2.52	2.35	2.19	2.04
Cagayan	3.46	3.23	3.00	2.80	2.61	2.43	2.26	2.10
Isabela	3.19	2.97	2.77	2.58	2.40	2.24	2.08	1.94
Nueva Vizcaya	3.28	3.05	2.84	2.65	2.47	2.30	2.14	1.99
Quirino	3.30	3.07	2.86	2.66	2.48	2.31	2.15	2.00
Region 3	3.01	2.81	2.61	2.43	2.27	2.11	1.97	1.83
Aurora	4.11	3.83	3.57	3.32	3.09	2.88	2.68	2.50
Bataan	2.83	2.63	2.45	2.29	2.13	1.98	1.85	1.72
Bulacan	2.95	2.75	2.56	2.38	2.22	2.07	1.93	1.79
Nueva Ecija	3.00	2.80	2.60	2.42	2.26	2.10	1.96	1.82
Pampanga	3.00	2.80	2.60	2.42	2.26	2.10	1.96	1.82
Tarlac	3.10	2.89	2.69	2.50	2.33	2.17	2.02	1.89
Zambales	3.06	2.85	2.65	2.47	2.30	2.14	1.99	1.86
Region 4A	3.04	2.83	2.64	2.45	2.28	2.13	1.98	1.84
Batangas	3.13	2.91	2.71	2.52	2.35	2.19	2.04	1.90
Cavite	2.79	2.60	2.42	2.26	2.10	1.96	1.82	1.70
Laguna	2.71	2.53	2.35	2.19	2.04	1.90	1.77	1.65
Quezon	3.66	3.40	3.17	2.95	2.75	2.56	2.38	2.22
Rizal	2.97	2.77	2.58	2.40	2.23	2.08	1.94	1.80
Region 4B	4.81	4.48	4.17	3.88	3.62	3.37	3.14	2.92
Marinduque	4.62	4.30	4.01	3.73	3.48	3.24	3.02	2.81
Occidental Mindoro	4.88	4.55	4.23	3.94	3.67	3.42	3.18	2.96
Oriental Mindoro	4.76	4.43	4.13	3.84	3.58	3.33	3.10	2.89
Palawan	5.09	4.74	4.41	4.11	3.82	3.56	3.32	3.09
Romblon	5.08	4.73	4.40	4.10	3.82	3.56	3.31	3.09
Region 5	4.20	3.91	3.64	3.39	3.16	2.94	2.74	2.55
Albay	3.76	3.51	3.27	3.04	2.83	2.64	2.46	2.29
Camarines Norte	4.04	3.77	3.51	3.27	3.04	2.83	2.64	2.46
Camarines Sur	4.05	3.78	3.52	3.28	3.05	2.84	2.65	2.47
Catanduanes	4.37	4.07	3.79	3.53	3.29	3.06	2.85	2.65
Masbate	4.98	4.64	4.32	4.02	3.75	3.49	3.25	3.03
Sorsogon	4.49	4.18	3.89	3.62	3.37	3.14	2.93	2.73
Region 6	3.86	3.59	3.35	3.12	2.90	2.70	2.52	2.34
Aklan	4.01	3.74	3.48	3.24	3.02	2.81	2.62	2.44
Antique	4.55	4.24	3.95	3.68	3.43	3.19	2.97	2.77
Capiz	3.88	3.61	3.36	3.13	2.91	2.71	2.53	2.35

Table 4. Projected Total Fertility Rates by Region and by Province: 2000-2040 (Cont.)
(Medium Assumption)

Region	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040
Guimaras	3.70	3.44	3.21	2.99	2.78	2.59	2.41	2.25
Iloilo	3.51	3.27	3.05	2.84	2.64	2.46	2.29	2.13
Negros Occidental	3.83	3.57	3.32	3.10	2.88	2.69	2.50	2.33
Region 7	3.45	3.22	2.99	2.79	2.59	2.42	2.25	2.09
Bohol	3.56	3.32	3.09	3.56	2.68	2.50	2.33	2.17
Cebu	3.27	3.05	2.84	3.27	2.46	2.29	2.14	1.99
Negros Oriental	3.72	3.47	3.23	3.72	2.80	2.61	2.43	2.26
Siquijor	3.22	3.00	2.80	3.22	2.42	2.26	2.10	1.96
Region 8	4.39	4.09	3.81	3.55	3.31	3.08	2.87	2.67
Biliran	4.35	4.05	3.77	3.51	3.27	3.05	2.84	2.64
Eastern Samar	4.66	4.34	4.04	3.76	3.50	3.26	3.04	2.83
Northern Samar	5.20	4.84	4.51	4.20	3.91	3.64	3.39	3.16
Leyte	4.01	3.73	3.47	3.24	3.01	2.81	2.61	2.44
Southern Leyte	3.63	3.38	3.15	2.93	2.73	2.54	3.27	2.21
Western Samar	5.02	4.67	4.35	4.05	3.77	3.51	3.27	3.05
Region 9	4.03	3.76	3.50	3.26	3.03	2.82	2.63	2.45
Basilan	4.09	3.81	3.55	4.09	3.08	2.87	2.67	2.49
Zamboanga del Norte	4.16	3.87	3.61	4.16	3.13	2.91	2.71	2.53
Zamboanga del Sur	3.93	3.66	3.41	3.93	2.95	2.75	2.56	2.38
Region 10	3.65	3.40	3.16	2.95	2.74	2.56	2.38	2.22
Bukidnon	4.29	4.00	3.73	3.47	3.23	3.01	2.80	2.61
Camiguin	4.14	3.86	3.59	3.35	3.12	2.90	2.70	2.52
Lanao del Norte	3.49	3.25	3.03	2.82	2.63	2.45	2.28	2.12
Misamis Occidental	3.56	3.32	3.09	2.88	2.68	2.50	2.33	2.17
Misamis Oriental	3.32	3.09	2.88	2.68	2.50	2.33	2.17	2.02
Region 11	3.04	2.83	2.64	2.45	2.28	2.13	1.98	1.84
Davao del Norte	3.17	2.96	2.75	2.56	2.39	2.22	2.07	1.93
Davao del Sur	2.83	2.63	2.45	2.29	2.13	1.98	1.85	1.72
Davao Oriental	3.64	3.39	3.15	2.94	2.73	2.55	2.37	2.21
Compostela Valley	3.17	2.96	2.75	2.56	2.39	2.22	2.07	1.93
Region 12	4.04	3.77	3.51	3.27	3.04	2.83	2.64	2.46
Cotabato City	2.90	2.70	2.52	2.34	2.18	2.03	1.89	1.76
North Cotabato	4.16	3.87	3.61	3.36	3.13	2.91	2.71	2.53
Sarangani	4.59	4.28	3.98	3.71	3.45	3.22	2.99	2.79
South Cotabato	3.74	3.49	3.25	3.03	2.82	2.63	2.45	2.28
Sultan Kudarat	4.21	3.92	3.65	3.40	3.17	2.95	2.75	2.56
ARMM	3.96	3.68	3.43	3.20	2.98	2.77	2.58	2.40
Lanao del Sur	4.87	4.54	4.23	3.94	3.67	3.42	3.18	2.96
Maguindanao	4.13	3.85	3.58	3.34	3.11	2.89	2.69	2.51
Sulu	3.12	2.90	2.70	2.52	2.35	2.19	2.04	1.90
Tawi-tawi	4.05	3.78	3.52	3.28	3.05	2.84	2.65	2.47
Caraga	4.06	3.78	3.52	3.28	3.05	2.84	2.65	2.47
Agusan del Norte	3.76	3.51	3.27	3.04	2.83	2.64	2.46	2.29
Agusan del Sur	4.29	4.00	3.73	3.47	3.23	3.01	2.80	2.61
Surigao del Norte	3.83	3.57	3.32	3.10	2.88	2.69	2.50	2.33
Surigao del Sur	4.12	3.84	3.58	3.33	3.10	2.89	2.69	2.51

C. Mortality

The life expectancy at birth (e_0) is the basic indicator used for both the base and the projected estimates of mortality. For the base period estimates, this indicator necessitated the construction of life tables separately for males and females for the year 2000. Given the incomplete registration of deaths in the Philippines, the death statistics by age and sex for ages 5 and over had to be corrected using the estimated level of completeness yielded by the Preston and Coale Method for the nation as a whole.

For ages 0 and 1-4, the resulting age-specific death rates for age group 5-9 for males and females using the deaths adjusted for incompleteness of registration were used to locate the model age-sex–specific death rates at age 0 and 1-4 from the United Nations (UN) Model Life Tables. The UN General Life Tables were used for this purpose since the age-sex specific death rates calculated using 2000 data on registered deaths exhibited an age pattern of mortality closer to that of the UN General pattern than to UN Latin American pattern. The UN Model Life Tables classified the Philippine mortality pattern as more akin with the UN Latin American pattern when they subjected Philippine mortality data in their iterative modeling and regressions.

Before the life tables were finally constructed, the resulting age-specific death rates from the deaths adjusted for incompleteness of registration for ages 55 years and over did not conform with the expected U-shaped death function. Hence, they had to be smoothed using the Gompertz model.

The resulting baseline estimate of e_0 for males is 63.11 and that for females is 69.14. The e_0 values for the projection periods (2005 -2040) were derived using the UN Working Model for quinquennial gains in life expectancy (Table 5) as a basis but adopting only the middle assumption. This assumption also implies that the present government health programs are continued and improved with an increase in resource allocation. For example, the estimated life expectancy for 2005 for males is 64.11. Since 64.11 is bracketed in the range of 62.5-65.0, the increase in life expectancy is 2 under the middle assumption and the resulting projected value for the 2000-2005 is 66.11. The projected values of e_0 s for the country are shown in Table 6.

Table 5. Working Model for Mortality Improvement, Quinquennial Gains (in years) in Life Expectancy at Birth (e^0_0) According to Initial Level of Mortality

Initial Mortality Level (e^0_0, in years)	Fast		Middle		Slow	
	Male	Female	Male	Female	Male	Female
55.0-57.5	2.5	2.5	2.5	2.5	2.0	2.0
57.5-60.0	2.5	2.5	2.5	2.5	2.0	2.0
60.0-62.5	2.5	2.5	2.3	2.5	2.0	2.0
62.5-65.0	2.3	2.5	2.0	2.5	2.0	2.0
65.0-67.5	2.0	2.5	1.5	2.3	1.5	2.0
67.5-70.0	1.5	2.3	1.2	2.0	1.0	1.5
70.0-72.5	1.2	2.0	1.0	1.5	0.8	1.2
72.5-75.0	1.0	1.5	0.8	1.2	0.5	1.0
75.0-77.5	0.8	1.2	0.5	1.0	0.3	0.8
77.5-80.0	0.5	1.0	0.4	0.8	0.3	0.5
80.0-82.5	0.5	0.8	0.4	0.5	0.3	0.3
82.5-85.0	-	0.5	-	0.4	-	-
85.0-87.5	-	0.5	-	0.4	-	0.3

Note: Lower limit is inclusive of the value while upper limit is exclusive of the value.
E.g. the range 65.0-67.5 means from 65.0 to less than 67.5
Source: United Nations (1989), 1988 World Population Prospects, Table 1.4

Table 6. Projected Values of Life Expectancy at Birth by Sex, Philippines: 2000-2040

Period	Life Expectancy at Birth	
	Male	Female
2000-2005	64.11	70.14
2005-2010	66.11	71.64
2010-2015	67.61	73.14
2015-2020	68.81	74.34
2020-2025	70.01	75.54
2025-2030	71.01	76.54
2030-2035	72.01	77.54
2035-2040	73.01	78.30

Baseline Regional Life Expectancy at Birth

Regional registered deaths for ages 5 and over for the year 2000 (2000 Vital Statistics Report) were also corrected for under-registration using several techniques (Table 7). The same steps for generating the age-specific death rates for ages 0 and 1-4 using the UN General Pattern based on the adjusted age-specific death rate and of smoothing the age-specific death rates for ages 55 and over using the Gompertz model with the national life tables were followed. Table 7 lists the baseline life expectancy at birth for each region.

Table 7. Baseline Life Expectancy at Birth by Region with the Corresponding Method of Estimating Level of Death Registration by Sex

Region	Method of Estimating Level of Death Registration	Life Expectancy at Birth	
		Male	Female
NCR	Gray 2	65.36	72.55
CAR	Preston & Coale (cumulative)	62.86	68.23
Region 1	Brass	66.12	72.92
Region 2	Brass	63.80	68.72
Region 3	Gray 1	65.27	72.26
Region 4A	Gray 2	65.14	72.07
Region 4B	Preston & Coale (actual)	63.91	69.04
Region 5	Brass	63.11	68.09
Region 6	Brass	63.51	70.72
Region 7	Brass	64.91	70.44
Region 8	Preston & Coale (cumulative)	61.60	67.00
Region 9	Preston & Coale (cumulative)	61.46	67.03
Region 10	Preston & Coale (cumulative)	62.23	67.46
Region 11	Preston & Coale (cumulative)	62.47	66.76
Region 12	Preston & Coale (actual)	62.91	67.84
ARMM	Preston & Coale (actual)	55.69	56.68
Caraga	Brass	60.49	65.84

Baseline Provincial Life Expectancy at Birth

Baseline provincial estimates of life expectancy at birth for males and females were computed using the same procedure used for estimating the national and regional baseline figures. The average of the baseline estimates for the provinces in the same region was compared with the corresponding baseline estimate for the region. In general, these averages differ substantially from their corresponding baseline regional estimates. Thus, an alternative procedure was adopted. The provincial estimates of life expectancy at birth were derived using the baseline regional estimates of life expectancy and the 1990 life table estimates for the regions and provinces by Flieger and Cabigon (1994). For provinces which were created after 1990, the 1995 life table estimates, also by Flieger and Cabigon (1999), were used. The following formulas were used:

$$\text{Life Expectancy at Birth } (e^o_0)_{\text{Provincial, 2000}} = \left(\frac{e^o_{0\ \text{(Provincial, 1990)}}}{e^o_{0\ \text{(Regional, 1990)}}} \right) * e^o_{0\ \text{(Regional, 2000)}}$$

or

$$\text{Life Expectancy at Birth}(e^o_0)_{\text{Provincial, 2000}} = \left(\frac{e^o_{0\ \text{(Provincial, 1995)}}}{e^o_{0\ \text{(Regional, 1995)}}} \right) * e^o_{0\ \text{(Regional, 2000)}}$$

Projected Regional and Provincial Life Expectancy at Birth

As stated earlier, only one assumption was used in projecting future changes in mortality for the national, regional and provincial aggregations with the life expectancy at birth as indicator. Tables 8 and 9 present the regional and provincial projected values of male and female life expectancy at birth for each of the five-year periods of the projection cycle.

An iterative adjustment procedure was employed to make the overall total of provincial deaths consistent with the total deaths of the region to which they belong and in the same manner make the overall deaths of the regions correspond to the total deaths for the entire country. The iterative adjustment procedure involves linking two softwares PEOPLE and MORTPAK. MORTPAK contains a MATCH computer program which generates the new life table from which the age-specific death rate for age group 5-9 ($_5M_5$) was used as the basic reference in determining the final life table that would yield the expected deaths per province which when summed would be equal to the e_o based on this final regional projected deaths. The final ($_5M_5$) served as an input into PEOPLE to generate the final parameters needed for the projection cycle.

Table 8. Male Life Expectancy at Birth by Region and Province: 2000-2040 (Medium Assumption)

Region	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040
NCR	66.11	67.61	68.81	70.01	71.01	72.01	73.01	73.81
CAR	63.86	65.86	67.36	68.86	70.06	71.06	72.06	73.06
Abra	63.54	65.54	67.04	68.54	69.74	70.94	71.94	72.94
Benguet	67.01	68.51	69.71	70.91	71.91	72.91	73.71	74.51
Ifugao	60.10	62.40	64.70	66.70	68.20	69.40	70.60	71.60
Kalinga	60.89	63.19	65.19	66.69	68.19	69.39	70.59	71.59
Mountain Province	61.05	63.35	65.35	66.85	68.35	69.55	70.75	71.75
Apayao	61.57	63.87	65.87	67.37	68.87	70.07	71.07	72.07
Region 1	66.87	68.37	69.57	70.77	71.77	72.77	73.57	74.37
Ilocos Norte	67.77	68.97	70.17	71.17	72.17	73.17	73.97	74.77
Ilocos Sur	63.96	65.96	67.46	68.96	70.16	71.16	72.16	73.16

La Union	67.62	68.82	70.02	71.02	72.02	73.02	73.82	74.62

Table 8. Male Life Expectancy at Birth by Region and Province: 2000-2040 (Cont.) (Medium Assumption)

Region	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040
Pangasinan	67.41	68.91	70.11	71.11	72.11	73.11	73.91	74.71
Region 2	64.81	66.81	68.31	69.51	70.71	71.71	72.71	73.51
Batanes	63.22	65.22	66.72	68.22	69.42	70.62	71.62	72.62
Cagayan	62.75	64.75	66.75	68.25	69.45	70.65	71.65	72.65
Isabela	65.34	66.84	68.34	69.54	70.74	71.74	72.74	73.54
Nueva Vizcaya	64.18	66.18	67.68	68.88	70.08	71.08	72.08	73.08
Quirino	63.31	65.31	66.81	68.31	69.51	70.71	71.71	72.71
Region 3	66.02	67.52	68.72	69.92	71.12	72.12	73.12	73.92
Aurora	61.14	63.44	65.44	66.94	68.44	69.64	70.84	71.84
Bataan	64.51	66.51	68.01	69.21	70.41	71.41	72.41	73.41
Bulacan	66.59	68.09	69.29	70.49	71.49	72.49	73.49	74.29
Nueva Ecija	65.87	67.37	68.87	70.07	71.07	72.07	73.07	73.87
Pampanga	67.91	69.11	70.31	71.31	72.31	73.31	74.11	74.91
Tarlac	65.46	66.96	68.46	69.66	70.86	71.86	72.86	73.66
Zambales	64.04	66.04	67.54	68.74	69.94	71.14	72.14	73.14
Region 4A	65.89	67.39	68.89	70.09	71.09	72.09	73.09	73.89
Batangas	67.88	69.08	70.28	71.28	72.28	73.28	74.08	74.88
Cavite	65.93	67.43	68.93	70.13	71.13	72.13	73.13	73.93
Laguna	65.22	66.72	68.22	69.42	70.62	71.62	72.62	73.42
Quezon	64.42	66.42	67.92	69.12	70.32	71.32	72.32	73.32
Rizal	66.89	68.39	69.59	70.79	71.79	72.79	73.59	74.39
Region 4B	64.91	66.91	68.41	69.61	70.81	71.81	72.81	73.61
Marinduque	65.44	66.94	68.44	69.64	70.84	71.84	72.84	73.64
Occidental Mindoro	64.75	66.75	68.25	69.45	70.65	71.65	72.65	73.45
Oriental Mindoro	65.85	67.35	68.85	70.05	71.05	72.05	73.05	73.85
Palawan	63.62	65.62	67.12	68.62	69.82	71.02	72.02	73.02
Romblon	64.07	66.07	67.57	68.77	69.97	71.17	72.17	73.17
Region 5	64.11	66.11	67.61	68.81	70.01	71.01	72.01	73.01
Albay	65.13	66.63	68.13	69.33	70.53	71.53	72.53	73.33
Camarines Norte	61.64	63.94	65.94	67.44	68.94	70.14	71.14	72.14
Camarines Sur	66.20	67.70	68.90	70.10	71.10	72.10	73.10	73.90
Catanduanes	62.59	64.59	66.59	68.09	69.29	70.49	71.49	72.49
Masbate	61.80	64.10	66.10	67.60	68.80	70.00	71.00	72.00
Sorsogon	64.30	66.30	67.80	69.00	70.20	71.20	72.20	73.20
Region 6	64.51	66.51	68.01	69.21	70.41	71.41	72.41	73.41
Aklan	61.70	64.00	66.00	67.50	68.70	69.90	71.10	72.10
Antique	61.04	63.34	65.34	66.84	68.34	69.54	70.74	71.74
Capiz	62.82	64.82	66.82	68.32	69.52	70.72	71.72	72.72
Guimaras	64.45	66.45	67.95	69.15	70.35	71.35	72.35	73.35
Iloilo	66.60	68.10	69.30	70.50	71.50	72.50	73.30	74.10
Negros Occidental	65.56	67.06	68.56	69.76	70.96	71.96	72.96	73.76
Region 7	65.91	67.41	68.91	70.11	71.11	72.11	73.11	73.91
Bohol	65.28	66.78	68.28	69.48	70.68	71.68	72.68	73.48
Cebu	67.99	69.19	70.39	71.39	72.39	73.39	74.19	74.99
Negros Oriental	63.00	65.00	66.50	68.00	69.20	70.40	71.40	72.40
Siquijor	61.63	63.93	65.93	67.43	68.93	70.13	71.13	72.13
Region 8	62.75	64.75	66.75	68.25	69.45	70.65	71.65	72.65
Biliran	64.73	66.73	68.23	69.43	70.63	71.63	72.63	73.43
Eastern Samar	60.38	62.68	64.68	66.68	68.18	69.38	70.58	71.58

Table 8. Male Life Expectancy at Birth by Region and Province: 2000-2040 (Cont.) (Medium Assumption)

Region	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040
Northern Samar	60.45	62.75	64.75	66.75	68.25	69.45	70.65	71.65
Leyte	64.73	66.73	68.23	69.43	70.63	71.63	72.63	73.43
Southern Leyte	63.76	65.76	67.26	68.76	69.96	71.16	72.16	73.16
Western Samar	60.16	62.46	64.76	66.76	68.26	69.46	70.66	71.66
Region 9	62.61	64.61	66.61	68.11	69.31	70.51	71.51	72.51
Basilan	59.30	61.80	64.10	66.10	67.60	68.80	70.00	71.00
Zamboanga del Norte	62.04	64.34	66.34	67.84	69.04	70.24	71.24	72.24
Zamboanga del Sur	63.51	65.51	67.01	68.51	69.71	70.91	71.91	72.91
Region 10	63.38	65.38	66.88	68.38	69.58	70.78	71.78	72.78
Bukidnon	63.90	65.90	67.40	68.90	70.10	71.10	72.10	73.10
Camiguin	62.10	64.40	66.40	67.90	69.10	70.30	71.30	72.30
Lanao del Norte	61.73	64.03	66.03	67.53	68.73	69.93	71.13	72.13
Misamis Occidental	63.17	65.17	66.67	68.17	69.37	70.57	71.57	72.57
Misamis Oriental	65.26	66.76	68.26	69.46	70.66	71.66	72.66	73.46
Region 11	63.62	65.62	67.12	68.62	69.82	71.02	72.02	73.02
Davao	61.16	63.46	65.46	66.96	68.46	69.66	70.86	71.86
Davao del Sur	65.93	67.43	68.93	70.13	71.13	72.13	73.13	73.93
Davao Oriental	62.97	64.97	66.97	68.47	69.67	70.87	71.87	72.87
Compostela Valley	61.16	63.46	65.46	66.96	68.46	69.66	70.86	71.86
Region 12	63.91	65.91	67.41	68.91	70.11	71.11	72.11	73.11
Cotabato City	64.23	66.23	67.73	68.93	70.13	71.13	72.13	73.13
North Cotabato	63.77	65.77	67.27	68.77	69.97	71.17	72.17	73.17
Sarangani	64.06	66.06	67.56	68.76	69.96	71.16	72.16	73.16
South Cotabato	65.01	66.51	68.01	69.21	70.41	71.41	72.41	73.41
Sultan Kudarat	62.15	64.45	66.45	67.95	69.15	70.35	71.35	72.35
ARMM	56.94	59.44	61.94	64.24	66.24	67.74	68.94	70.14
Lanao del Sur	59.37	61.87	64.17	66.17	67.67	68.87	70.07	71.07
Maguindanao	57.80	60.30	62.60	64.60	66.60	68.10	69.30	70.50
Sulu	54.47	56.97	59.47	61.97	64.27	66.27	67.77	68.97
Tawi-tawi	53.63	56.13	58.63	61.13	63.43	65.43	66.93	68.43
Caraga	61.64	63.94	65.94	67.44	68.94	70.14	71.14	72.14
Agusan del Norte	61.51	63.81	65.81	67.31	68.81	70.01	71.01	72.01
Agusan del Sur	59.89	62.39	64.69	66.69	68.19	69.39	70.59	71.59
Surigao del Norte	62.96	64.96	66.96	68.46	69.66	70.86	71.86	72.86
Surigao del Sur	60.06	62.36	64.66	66.66	68.16	69.36	70.56	71.56

Table 9. Female Life Expectancy at Birth by Region and Province: 2000-2040 (Medium Assumption)

Region	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040
NCR	73.15	74.35	75.55	76.55	77.55	78.35	79.15	79.95
CAR	69.23	71.23	72.73	73.93	75.13	76.13	77.13	78.13
Abra	68.89	70.89	72.39	73.89	75.09	76.09	77.09	78.09

Table 9. Female Life Expectancy at Birth by Region and Province: 2000-2040 (Cont.)
(Medium Assumption)

Region	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040
Benguet	72.67	73.87	75.07	76.07	77.07	78.07	78.87	79.67
Ifugao	65.12	67.42	69.72	71.72	73.22	74.42	75.62	76.62
Kalinga	65.98	68.28	70.28	71.78	73.28	74.48	75.68	76.68
Mountain Province	66.15	68.45	70.45	71.95	73.45	74.65	75.85	76.85
Apayao	66.73	69.03	71.03	72.53	73.73	74.93	76.13	77.13
Region 1	73.52	74.72	75.92	76.92	77.92	78.72	79.52	80.32
Ilocos Norte	74.75	75.95	76.95	77.95	78.75	79.55	80.35	80.85
Ilocos Sur	73.13	74.33	75.53	76.53	77.53	78.33	79.13	79.93
La Union	74.40	75.60	76.60	77.60	78.40	79.20	80.00	80.50
Pangasinan	73.94	75.14	76.14	77.14	78.14	78.94	79.74	80.54
Region 2	69.76	71.76	73.26	74.46	75.66	76.66	77.66	78.46
Batanes	67.99	69.99	71.99	73.49	74.69	75.89	76.89	77.89
Cagayan	70.44	71.94	73.44	74.64	75.84	76.84	77.84	78.64
Isabela	72.11	73.61	74.81	76.01	77.01	78.01	78.81	79.61
Nueva Vizcaya	69.05	71.05	72.55	73.75	74.95	76.15	77.15	78.15
Quirino	66.50	68.80	70.80	72.30	73.80	75.00	76.20	77.20
Region 3	73.01	74.21	75.41	76.41	77.41	78.41	79.21	80.01
Aurora	67.82	69.82	71.82	73.32	74.52	75.72	76.72	77.72
Bataan	70.86	72.36	73.86	75.06	76.06	77.06	78.06	78.86
Bulacan	73.38	74.58	75.78	76.78	77.78	78.58	79.38	80.18
Nueva Ecija	72.23	73.73	74.93	76.13	77.13	78.13	78.93	79.73
Pampanga	75.22	76.22	77.22	78.22	79.02	79.82	80.62	81.12
Tarlac	71.07	72.57	73.77	74.97	76.17	77.17	78.17	78.97
Zambales	69.62	71.62	73.12	74.32	75.52	76.52	77.52	78.32
Region 4A	72.82	74.02	75.22	76.22	77.22	78.22	79.02	79.82
Batangas	74.55	75.75	76.75	77.75	78.55	79.35	80.15	80.65
Cavite	73.78	74.98	76.18	77.18	78.18	78.98	79.78	80.58
Laguna	72.06	73.56	74.76	75.96	76.96	77.96	78.76	79.56
Quezon	70.23	71.73	73.23	74.43	75.63	76.63	77.63	78.43
Rizal	73.50	74.70	75.90	76.90	77.90	78.70	79.50	80.30
Region 4B	70.04	71.54	73.04	74.24	75.44	76.44	77.44	78.44
Marinduque	70.34	71.84	73.34	74.54	75.74	76.74	77.74	78.54
Occidental Mindoro	70.05	71.55	73.05	74.25	75.45	76.45	77.45	78.45
Oriental Mindoro	70.69	72.19	73.69	74.89	76.09	77.09	78.09	78.89
Palawan	68.91	70.91	72.41	73.91	75.11	76.11	77.11	78.11
Romblon	69.71	71.71	73.21	74.41	75.61	76.61	77.61	78.41
Region 5	69.09	71.09	72.59	73.79	74.99	76.19	77.19	78.19
Albay	70.87	72.37	73.87	75.07	76.07	77.07	78.07	78.87
Camarines Norte	65.88	68.18	70.18	71.68	73.18	74.38	75.58	76.58
Camarines Sur	71.95	73.45	74.65	75.85	76.85	77.85	78.65	79.45
Catanduanes	67.31	69.61	71.61	73.11	74.31	75.51	76.51	77.51
Masbate	66.27	68.57	70.57	72.07	73.57	74.77	75.97	76.97
Sorsogon	69.70	71.70	73.20	74.40	75.60	76.60	77.60	78.40
Region 6	71.47	72.97	74.17	75.37	76.37	77.37	78.37	79.17
Aklan	68.60	70.60	72.10	73.60	74.80	76.00	77.00	78.00
Antique	67.99	69.99	71.99	73.49	74.69	75.89	76.89	77.89
Capiz	69.35	71.35	72.85	74.05	75.25	76.25	77.25	78.25
Guimaras	70.92	72.42	73.92	75.12	76.12	77.12	78.12	78.92
Iloilo	73.68	74.88	76.08	77.08	78.08	78.88	79.68	80.48

Table 9. Female Life Expectancy at Birth by Region and Province: 2000-2040 (Cont.)
(Medium Assumption)

Region	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040
Negros Occidental	72.89	74.09	75.29	76.29	77.29	78.29	79.09	79.89
Region 7	71.19	72.69	73.89	75.09	76.09	77.09	78.09	78.89
Bohol	71.03	72.53	73.73	74.93	76.13	77.13	78.13	78.93
Cebu	73.38	74.58	75.78	76.78	77.78	78.58	79.38	80.18
Negros Oriental	67.42	69.72	71.72	73.22	74.42	75.62	76.62	77.62
Siquijor	66.45	68.75	70.75	72.25	73.75	74.95	76.15	77.15
Region 8	68.15	70.15	71.65	73.15	74.35	75.55	76.55	77.55
Biliran	70.94	72.44	73.94	75.14	76.14	77.14	78.14	78.94
Eastern Samar	66.01	68.31	70.31	71.81	73.31	74.51	75.71	76.71
Northern Samar	66.75	69.05	71.05	72.55	73.75	74.95	76.15	77.15
Leyte	70.94	72.44	73.94	75.14	76.14	77.14	78.14	78.94
Southern Leyte	70.06	71.56	73.06	74.26	75.46	76.46	77.46	78.46
Western Samar	64.79	67.29	69.59	71.59	73.09	74.29	75.49	76.49
Region 9	68.18	70.18	71.68	73.18	74.38	75.58	76.58	77.58
Basilan	65.13	67.43	69.73	71.73	73.23	74.43	75.63	76.63
Zamboanga del Norte	66.51	68.81	70.81	72.31	73.81	75.01	76.01	77.01
Zamboanga del Sur	69.11	71.11	72.61	73.81	75.01	76.01	77.01	78.01
Region 10	68.61	70.61	72.11	73.61	74.81	76.01	77.01	78.01
Bukidnon	68.72	70.72	72.22	73.72	74.92	76.12	77.12	78.12
Camiguin	67.07	69.37	71.37	72.87	74.07	75.27	76.27	77.27
Lanao del Norte	66.40	68.70	70.70	72.20	73.70	74.90	76.10	77.10
Misamis Occidental	68.41	70.41	71.91	73.41	74.61	75.81	76.81	77.81
Misamis Oriental	70.82	72.32	73.82	75.02	76.02	77.02	78.02	78.82
Region 11	67.91	69.91	71.91	73.41	74.61	75.81	76.81	77.81
Davao del Norte	66.56	68.86	70.86	72.36	73.86	75.06	76.06	77.06
Davao del Sur	69.53	71.53	73.03	74.23	75.43	76.43	77.43	78.43
Davao Oriental	68.04	70.04	71.54	73.04	74.24	75.44	76.44	77.44
Compostela Valley	66.56	68.86	70.86	72.36	73.86	75.06	76.06	77.06
Region 12	68.84	70.84	72.34	73.84	75.04	76.04	77.04	78.04
Cotabato City	68.70	70.70	72.20	73.70	74.90	76.10	77.10	78.10
North Cotabato	69.08	71.08	72.58	73.78	74.98	76.18	77.18	78.18
Sarangani	68.75	70.75	72.25	73.75	74.95	76.15	77.15	78.15
South Cotabato	69.80	71.80	73.30	74.50	75.70	76.70	77.70	78.50
Sultan Kudarat	66.92	69.22	71.22	72.72	73.92	75.12	76.12	77.12
ARMM	57.93	60.43	62.93	65.43	67.73	69.73	71.73	73.23
Lanao del Sur	60.24	62.74	65.24	67.54	69.54	71.54	73.04	74.24
Maguindanao	59.15	61.65	64.15	66.65	68.95	70.95	72.45	73.95
Sulu	56.03	58.53	61.03	63.53	66.03	68.33	70.33	71.83
Tawi-tawi	55.00	57.50	60.00	62.50	65.00	67.30	69.60	71.60
Caraga	66.99	69.29	71.29	72.79	73.99	75.19	76.19	77.19
Agusan del Norte	67.58	69.58	71.58	73.08	74.28	75.48	76.48	77.48
Agusan del Sur	65.26	67.56	69.56	71.56	73.06	74.26	75.46	76.46
Surigao del Norte	70.98	72.48	73.98	75.18	76.18	77.18	78.18	78.98
Surigao del Sur	66.94	69.24	71.24	72.74	73.94	75.14	76.14	77.14

D. Migration

The migration data used in these projections were derived from two questions asked during the 2000 Census of Population and Housing (CPH). These questions pertain to the current residence and the residence five years prior to the enumeration. The Small Working Group (SWG) on Migration examined the migration data from the 1990 CPH and 2000 CPH to come up with the robust estimates of the number of migrants by region and by province. Since overseas Filipino workers (OFWs) were included in the census count, it was agreed that international migration could be negligible and would have little effect on the national total populaton. The SWG also estimated interregional and interprovincial migration.

A migration matrix was constructed using the population five years old and over. The data on current residence in the 2000 CPH was tabulated by residence five years prior to the census. For policy relevance, the new regional grouping was used. This is the same procedure followed for the 1985-1990 migration data obtained in the 1990 CPH, thus making the two censuses comparable. The examination of the trend before 1985 using the 1980 Census was not possible due to the changes in the administrative set-up of the regions over the three inter-census periods.

1. Projections of Regional/Provincial Net Migration Rates

a. Estimating the Net Migration Rates

The baseline regional and provincial net migration rates (NMRs) were generated using this formula.

$$NMR_{1995\text{-}2000} = \frac{NM_{1995\text{-}2000}}{P_{July1997} - (0.5 * NM_{1995\text{-}2000})}$$

Where: $NMR_{1995\text{-}2000}$ = net migration rate for the period 1995-2000

$NM_{1995\text{-}2000}$ = net number of migrants

= no. of in-migrants – no. of out-migrants

$P_{July\ 1997}$ = household population 5 years old and over

This formula was used to compute the overall net migration rates (total, male and female) as well as the baseline age-sex-specific net migration rates.

b. Assumptions

In formulating the migration assumptions, the regions/provinces were classified based on the trend of the overall male and female net migration rates observed between 1985-1990 and 1995-2000. The SWG on Migration identified six categories based on the net migration rates for these two periods as shown in Table 10.

Table 10. Trends in Migration Based on Net Migration Rates for 1985-1990 and 1995-2000

Group	Trend
1	Increasing positive
2	Decreasing positive
3	Increasing negative
4	Decreasing negative
5	Positive to Negative
6	Negative to Positive

The net migration trends for the periods 1985-1990 and 1995-2000 by province and by region were noted. The inclusion of a province/region in a certain group was validated using data from the Regional Development Plans for 2004-2010 from the National Economic and Development Authority and the 2003 Countryside in Figures Report from the National Statistical Coordination Board. The plan is directed towards spreading development and providing new opportunities for growth in the regions. The growth poles between the period 1985-1990 and 1995-2000 remained the same except for the exclusion of the province of Quezon during the 1995-2000.

A regression model was initially estimated to predict net migration rates for each province using the following variables: poverty incidence, ecozones, presence of growth centers, and state colleges and universities, transport infrastructures, palay production and so on. The significant predictors were ecozones and poverty incidence. However, in the absence of targets set for poverty beyond 2015, three possible scenarios on poverty incidence were considered. These are status quo after 2015, decline in the incidence by five percent every 10 years and decline by five percent every 5 years. It was also assumed that the ecozones may have reached its peak 5 years after their establishment. Beyond that time period, such ecozones will have lost their attraction.

Several methods were tried for the provincial projections of net migration rates.

2. **Use of Regression Equation.** Utilizing the migration rates for the periods 1985-1990 and 1995-2000, the net migration rates for the period 1990-1995 was derived by means of linear interpolation. When the derived 1990-1995 net migration rates were then incorporated in the regression model to predict the 1995-2000 net migration rates in each province it was the only significant variable that remained. This may be due to the high correlation among the variables used in the deriving the regression equation. Moreover, 1993 was considered a crisis year which may have brought about a shift in the migration patterns of the population. This could lead to changes in the trends of migration streams between the two-census periods.

The next step taken was to allow the effect of provincial NMRs for the 1990-1995 to vary depending on the NMR trend experienced by the province over the past decade. The final regression equation estimated included dummy variables for the six identified groups based on the 10-year NMR trend and their interactions with the interpolated NMR 1990-1995. The constant and coefficient of the predicted regression equation for each group are listed in Table 11.

Table 11. Regression Coefficients for deriving the Projected Net Migration Rates

Group	Trend	Constant	1990-1995 NMR Coefficient
1	Increasing positive	0.00158	1.27839
2	Decreasing positive	-0.00454	0.88713
3	Increasing negative	0.00116	1.45784
4	Decreasing negative	-0.00114	0.47800
5	Positive to Negative	-0.00795	0.34248
6	Negative to Positive	0.00714	0.47204

The above-mentioned equations were applied to each province depending on which group the province was included. Separate projections were done for male and female.

Migration data from the 2000 Census of Population and Housing were obtained for persons 5 years old and over. The People software required the presence of age group 0-4. Thus, the migration rate for age group 0-4 was estimated using the following formula given by *Shryock and Siegel (1979)*.

$$NMR_{0-4} = CWR_{0-4} * NMR_{(female)15-44}$$

Where NMR_{0-4} = net migration rate for age group 0-4

CWR_{0-4} = child-woman ratio for age group 0-4

$NMR_{(female)\ 15-44}$ = net migration rates for age groups 15-44

For the projected age-specific migration rate, the ratio of each age group to the total (male/female) served as a multiplier to the total (male/female) projected migration rate. It was assumed that the projected age-specific migration rate maintained the 1995-2000 age specific migration distribution.

3. Use of Linear Interpolation. On the initial application of the regression equation to each province, the graphical representation of the provincial rates showed sudden increase/decrease of rates in the projection years. Thus, a ceiling value (+0.40) and a floor (-0.20) were adopted to control the surge of the projected net migration rates. Adjustments were made to the projected NMRs when the resultant overall trend failed to match the pre-determined overall trend.

Not all the net migration rates of provinces were projected using the above mentioned regression equations. Of the 81 provinces, 17 were linearly interpolated. For example, the derived migration rate for the projection period 2000-2005 was placed at the end-period 2035-2040 and using linear interpolation, gradually increased/decreased the rates for the in-between projection periods.

4. Estimating Regional Net Migration Rates. The projected provincial age-sex-specific net migration rates were converted into numbers of male and female net migrants by age group. Net migrants by age group in each region were calculated by adding the net migrants of the provinces in the region. The regional net migrants (males and females) by age group were translated into age-sex-specific net migration rates.