LTCSRMig

Version 5.20

Step-By-Step Guide

(1) On the INPUT sheet (Figure 1), enter census years in cells E6 and E29. The length of the intercensal interval is used to determine whether to use the 5- or 10-year formulas.

Figure 1. INPUT Sheet: Census Dates and Populations

	A	B	C	D	E
3	Table				
4	Republic of Demographica				
5	Survival Ratio Methods for Estimating Migration				
6	**A. Reported Population by Age, Sex, and Residence at Earlier Date**				2010.50
7		**Republic of Demographica**		**Rural**	
8	**Age**	**Male**	**Female**	**Male**	**Female**
9	0-4	2,161,336	2,087,606	1,126,455	1,088,081
10	5-9	1,899,250	1,838,461	958,345	927,089
11	10-14	1,680,335	1,624,821	825,279	796,248
12	15-19	1,475,798	1,416,874	693,199	666,189
13	20-24	1,271,343	1,214,202	566,750	548,939
14	25-29	1,071,358	1,035,490	463,835	459,181
15	30-34	901,311	881,882	385,808	388,883
16	35-39	760,158	748,488	324,139	330,065
17	40-44	640,751	633,507	275,186	282,477
18	45-49	538,190	535,793	235,233	244,151
19	50-54	445,569	449,183	199,021	209,993
20	55-59	360,099	370,873	163,572	176,874
21	60-64	277,344	295,132	125,781	140,780
22	65-69	199,867	222,356	89,588	104,888
23	70-74	130,174	153,212	58,119	72,093
24	75-79	72,434	91,716	33,045	43,915
25	80+	43,921	63,828	20,727	30,764
26					
27	Total	13,929,238	13,663,424	6,544,082	6,510,610
28					
29	**B. Reported Population by Age, Sex, and Residence at Later Date**				2015.50
30		**Republic of Demographica**		**Rural**	
31	**Age**	**Male**	**Female**	**Male**	**Female**
32	0-4	2,376,562	2,294,912	1,103,904	1,060,063
33	5-9	2,109,467	2,042,433	1,009,902	968,528
34	10-14	1,882,564	1,823,643	900,843	866,212
35	15-19	1,664,109	1,610,697	780,267	751,883
36	20-24	1,454,638	1,399,663	595,309	574,790
37	25-29	1,249,214	1,195,975	459,012	443,632

(2) Enter national and subarea populations by age and sex for the first census into ranges B9:C25 and D9:E25, respectively. Enter national and subarea populations for the second census in ranges B32:C48 and D32:E48.

(3) Enter national and subarea life table ${}_nL_x$ values for ages 0, 1-4, 5-9 … and 80+, plus e(80) in range B55:C74 and D55:E74, respectively (Figure 2).

Figure 2. INPUT Sheet: Life Table Inputs

	A	B	C	D	E
52	C. Life Table nLx by Age and Life Expectancy at age 80 (e80), by Sex and Residence				2010-2015 centered on 2013.00
53		Republic of Demographica		Rural	
54	Age	Male	Female	Male	Female
55	Under 1	94,421	95,266	93,849	94,659
56	1-4	363,134	368,699	356,786	362,402
57	5-9	446,984	454,288	437,729	444,803
58	10-14	443,030	450,585	433,155	440,296
59	15-19	438,673	446,572	428,219	435,481
60	20-24	432,273	441,031	421,037	428,930
61	25-29	424,651	434,294	412,462	421,049
62	30-34	416,450	426,623	403,214	412,168
63	35-39	406,924	417,826	392,539	402,133
64	40-44	395,022	407,525	379,411	390,649
65	45-49	379,502	394,961	362,721	377,051
66	50-54	358,653	378,609	340,880	359,770
67	55-59	330,440	356,699	312,052	337,036
68	60-64	292,739	326,500	274,337	306,213
69	65-69	244,323	284,791	226,798	264,518
70	70-74	185,941	229,165	170,606	210,259
71	75-79	122,169	161,378	110,446	145,765
72	80+	93,398	146,897	81,382	126,997
73					
74	e80	5.20	5.87	5.07	5.68

(4) Choose one of two means for estimating migrants at the youngest ages using child-woman ratios (CWRs, see Figure 3):

- Cells B80:C81 contain the estimated values of the CWR based on the average of the census age distributions for the subarea. If these are thought to be acceptable, select the “Observed” radio button in cell E80. If you have adjusted values from an age distribution corrected for age-and-sex-specific coverage error, replace the census data with the adjusted figures and select the “Observed” radio button.

- If you think that the census values are too biased and you do not have adjusted age distributions, you can use estimated values based on regressions of calculated child-woman ratios on total fertility rates from the Census Bureau’s International Data Base, the June 2012 update. Enter an estimated total fertility rate in cell D89 and choose the “TFR” radio button in cell E84. This would be an appropriate choice for a country with child-woman ratios dissimilar to those in the same region.

Figure 3. INPUT Sheet: Child-Woman Ratio Estimates

	A	B	C	D	E
76	D. Alternate Child-Woman Ratio (CWR) Estimates			2010-2015 centered on 2013.00	
77	Age of	Rural			
78	children	Male	Female	Additional inputs	Select estimate
79	Observed (average of 2010.5 and 2015.5)				
80	0-4	0.4053	0.3903		Observed
81	5-9	0.4284	0.3546		
82					
83	Derived from Subarea Total Fertility Rate (TFR) =			5.6222	
84	0-4	0.4130	0.4065		TFR
85	5-9	0.4298	0.4250		
86					

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(5) LTCSRMig calculates nine sets of migrants by age and sex for the intercensal interval in the OUTPUT sheet (Figure 4). The first three sets of estimates (rows 11 through 29) are based on forward surviving the first census population to the time of the second census. Census survival ratio (columns B to D), life table survival ratio (columns E to G), and composite survival ratio-based estimates (columns H to J) are presented.

Figure 4. OUTPUT Sheet: Forward Survival Estimates

	A	B	C	D	E	F	G	H	I	J
3	Table									
4	Republic of Demographica									
5	Survival Ratio Methods for Estimating Migration									
6	E. Estimated Annual Net Migrants for Rural, by Method, Sex, and Age: 2010-2015									
7	Age	Census Survival Ratio Method			Life Table Survival Ratio Method			Composite Survival Ratio Method		
8		Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
9										
10	Forward Survival									
11	0-4	-47,795	-24,346	-23,449	-46,210	-23,539	-22,671	-47,211	-23,605	-23,605
12	5-9	-28,802	-13,860	-14,941	-27,363	-13,178	-14,185	-27,193	-13,083	-14,109
13	10-14	-17,697	-8,613	-9,085	-17,024	-8,310	-8,714	-17,069	-8,330	-8,739
14	15-19	-24,574	-12,499	-12,075	-23,891	-12,187	-11,703	-23,957	-12,219	-11,738
15	20-24	-36,620	-18,582	-18,037	-35,906	-18,246	-17,660	-35,968	-18,276	-17,692
16	25-29	-30,722	-15,581	-15,141	-30,042	-15,256	-14,786	-30,095	-15,281	-14,814
17	30-34	-17,076	-8,906	-8,171	-16,439	-8,597	-7,842	-16,491	-8,623	-7,868
18	35-39	-9,090	-4,860	-4,230	-8,492	-4,559	-3,933	-8,541	-4,585	-3,957
19	40-44	-5,231	-2,808	-2,422	-4,678	-2,518	-2,160	-4,724	-2,543	-2,181
20	45-49	-3,349	-1,763	-1,586	-2,830	-1,485	-1,344	-2,875	-1,509	-1,366
21	50-54	-2,370	-1,197	-1,173	-1,865	-934	-931	-1,908	-955	-953
22	55-59	-1,792	-857	-935	-1,294	-613	-681	-1,331	-629	-703
23	60-64	-1,376	-622	-754	-903	-405	-498	-927	-412	-515
24	65-69	-1,018	-437	-582	-621	-264	-357	-619	-258	-360
25	70-74	-699	-285	-413	-414	-168	-247	-383	-151	-232
26	75-79	-457	-180	-277	12	18	-6	-217	-84	-133
27	80+	-310	-113	-197	7	11	-4	-147	-53	-94
28										
29	Total	-228,978	-115,510	-113,469	-217,952	-110,228	-107,724	-219,655	-110,596	-109,059

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(6) Reverse-survived and average forward- and reverse-survival-based migrants are presented in the second and third panels of the OUTPUT sheet (rows 32 to 50 and 53 to 71, respectively).

(7) Graphical presentation of the output is provided in the GRAPHS sheet (Figure 5). One or more output estimates can be plotted using the macro buttons to the right of the graph. This allows the user to view and compare the migration patterns calculated with the various methods, as well as alternative estimates that can be entered on the sheet COMPARE.
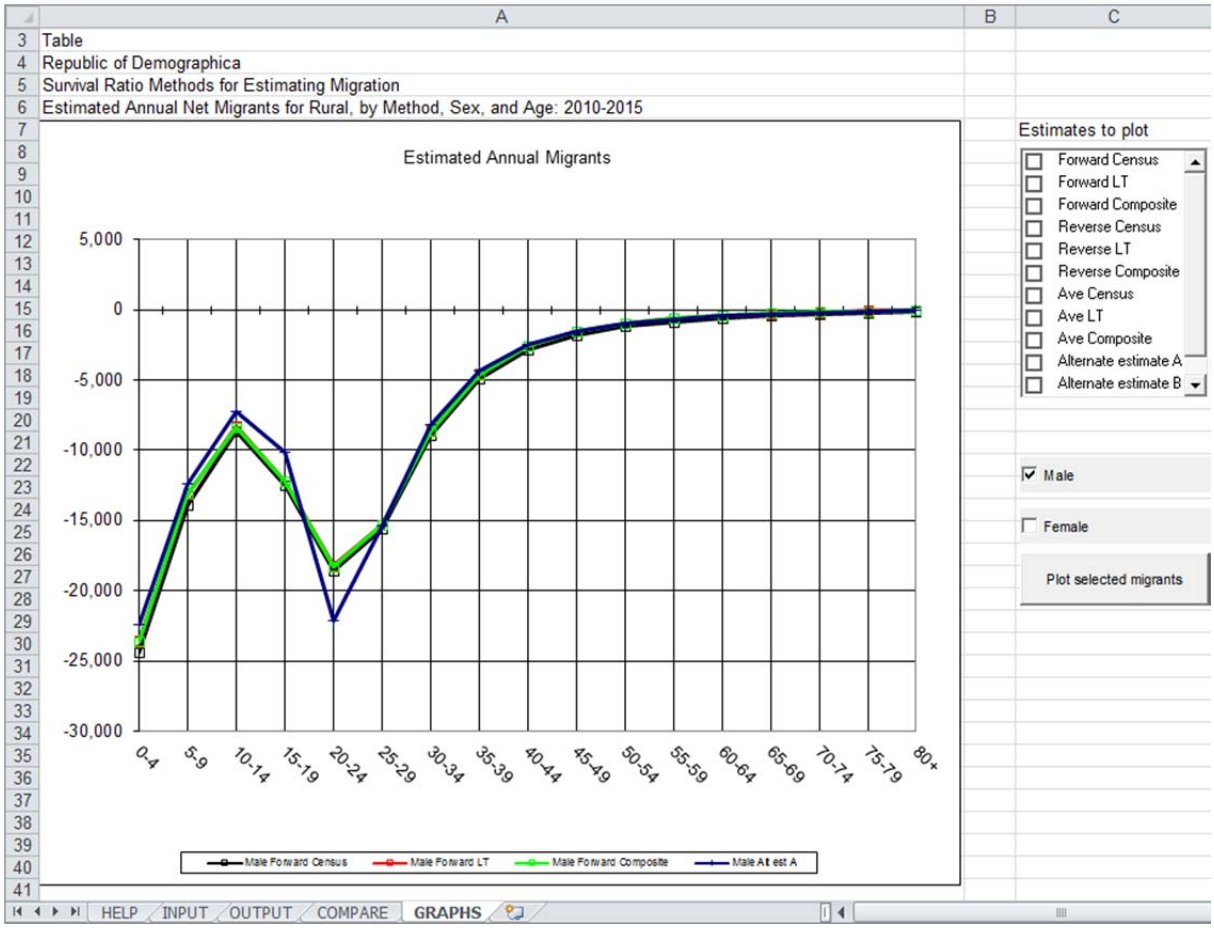
Figure 5. GRAPHS Sheet: Dynamic Graphs of Estimated Migration Patterns