

Workshop on Population Projections

Projecting Migration



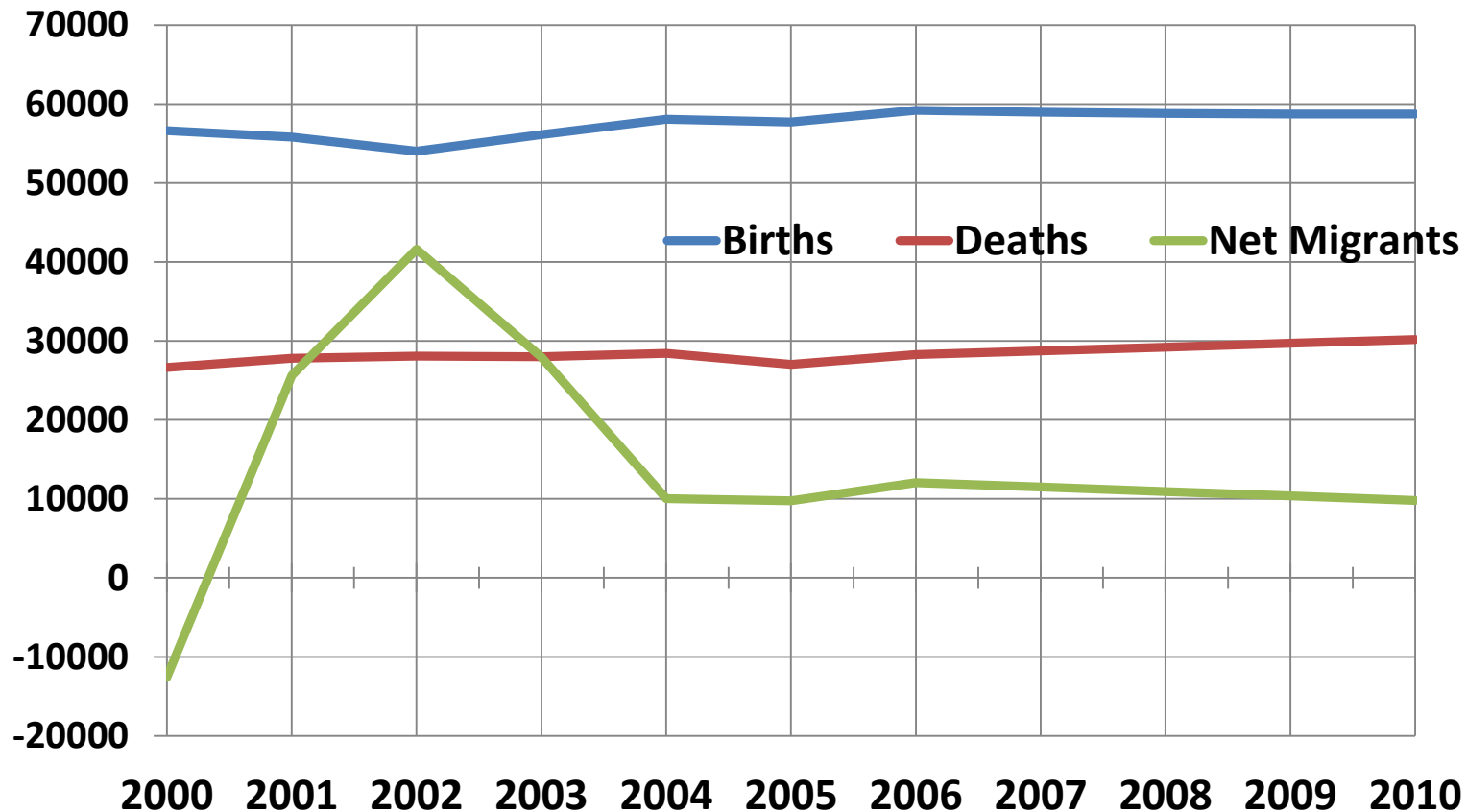
Projecting Migration: Introductions

Earlier, we considered how to estimate migration in the recent past.

- Will these recent patterns persist into the future?
- Should we change those assumptions?
- If so, how do we change those assumptions?

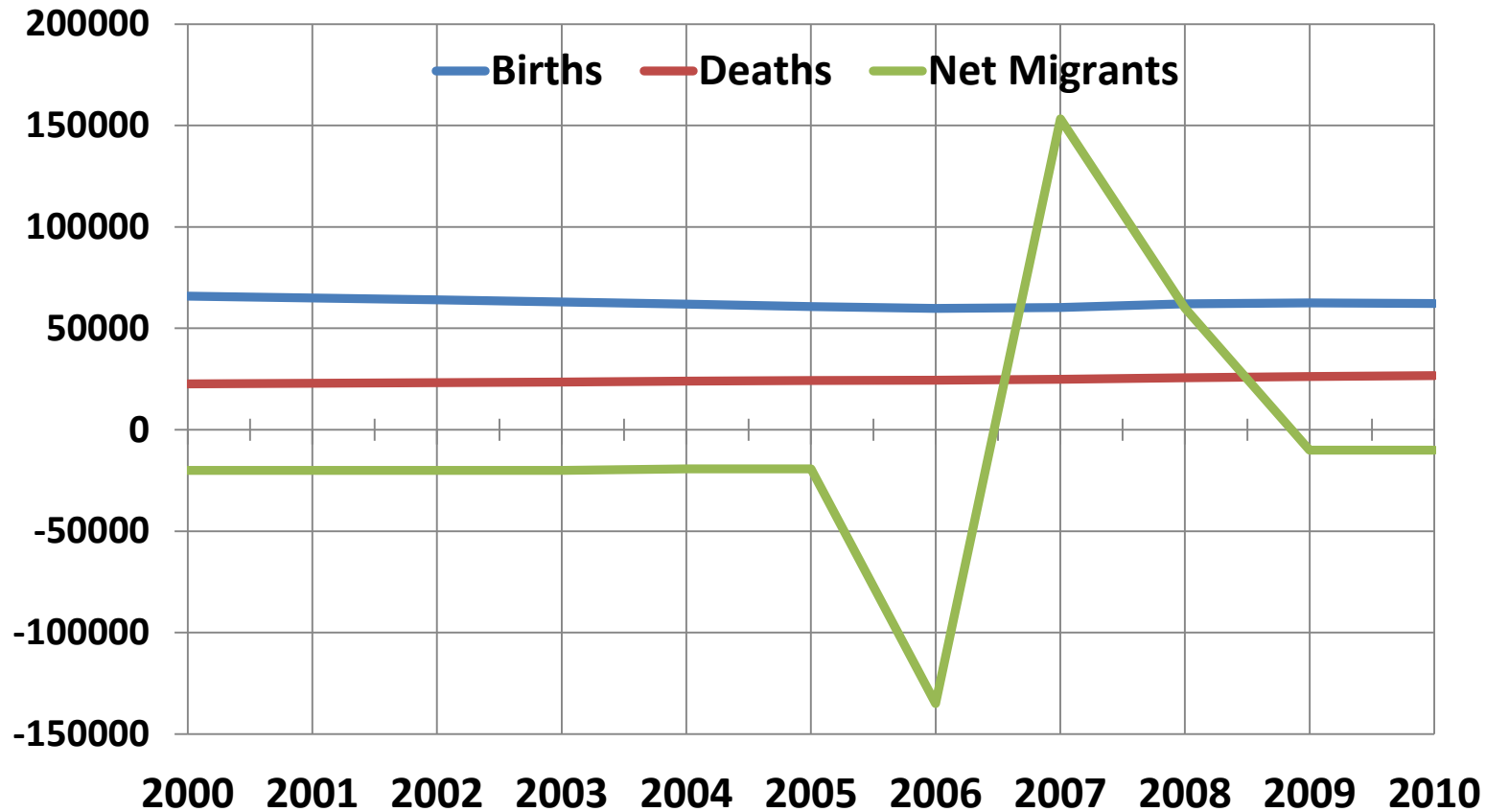
To predict the volume and direction of net migration is not easy. Here are examples of why is not easy...

New Zealand - Estimated Annual Births, Deaths and Net Migrants, 2000-2010



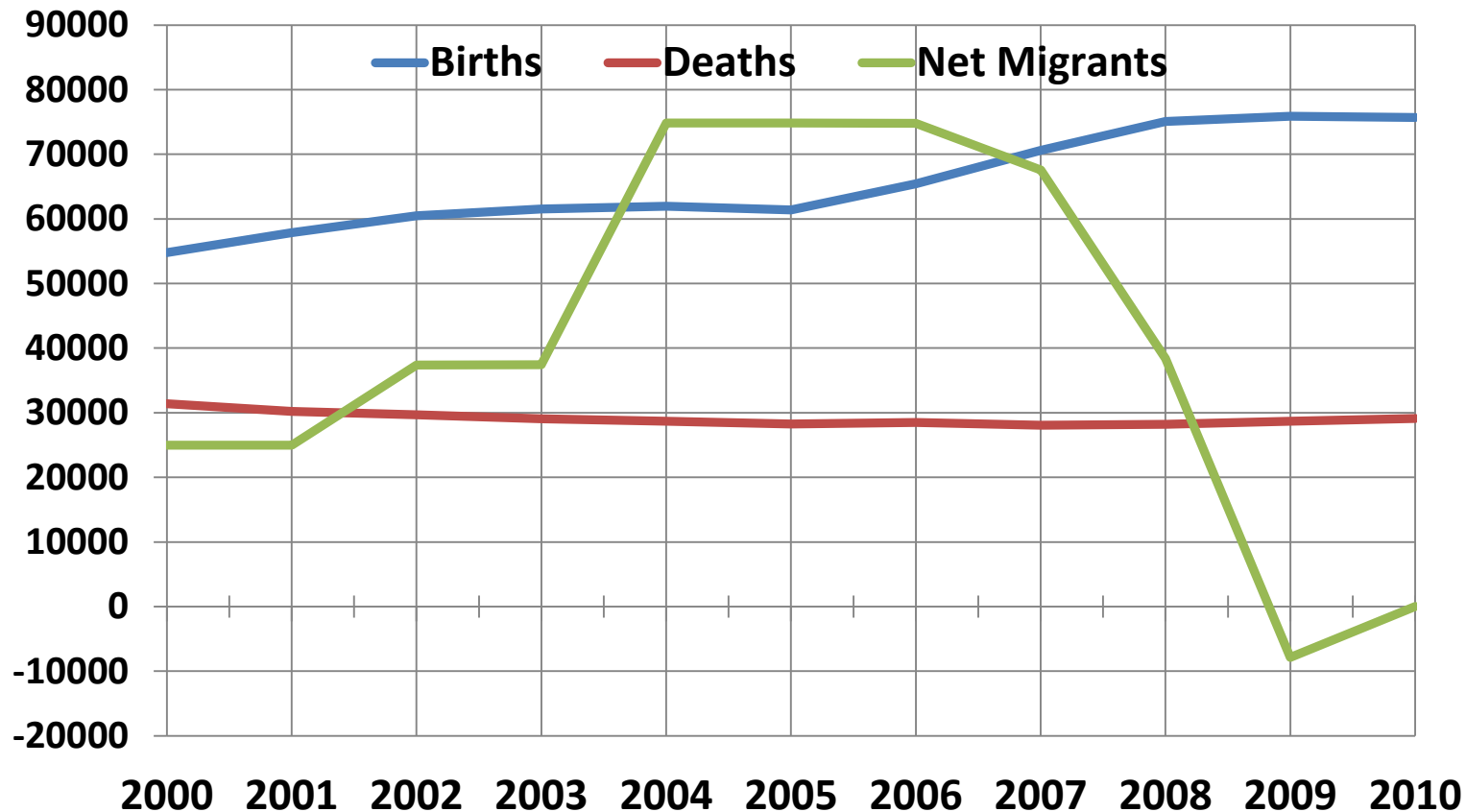
Source: U.S. Census Bureau, International Data Base (as of May 20, 2011)

Lebanon - Estimated Annual Births, Deaths and Net Migrants, 2000-2010



Source: U.S. Census Bureau, International Data Base (as of May 20, 2011)

Ireland - Estimated Annual Births, Deaths and Net Migrants, 2000-2010



Source: U.S. Census Bureau, International Data Base (as of May 20, 2011)

Projecting Migration: Introductions

Of 3 components of demographic change (fertility, mortality, migration), migration is often the least stable Why?

- Labor migration depends on economic conditions, and those conditions vary.
- War and social conflicts can be hard to predict
- Role of migration in population change can be especially large in less populous areas.

*Moreover, even if we assume future migration **is** stable, population projections may not be reasonable.*

Projecting Migration: Alternative Approaches

Here are four approaches to projecting migration:

1. Assume net migration maintains the current (or recent) level and pattern.
2. Extrapolate recent trends in migration.
3. Project net migration based on assumed changes or on population targets.
4. Develop separate migration assumptions for different groups or types of migrants (e.g., non-citizen vs. citizen, refugees, labor migrants, short-term vs. long-term migrants) using the approaches shown above.

1. Assume Migration Remains Constant at Recent Levels

- Assuming net migration maintains the current level (or the level for a recent period) is a simplistic assumption, but it is appropriate for some countries, if:
 - Evidence from empirical research is available to support assumption
 - Data of adequate quality aren't available to develop more complex assumptions

1. Assume Migration Remains Constant at Recent Levels

Implementing the constant migration assumption in DAPPS is easy. Simply don't enter anything after the last estimated entry.

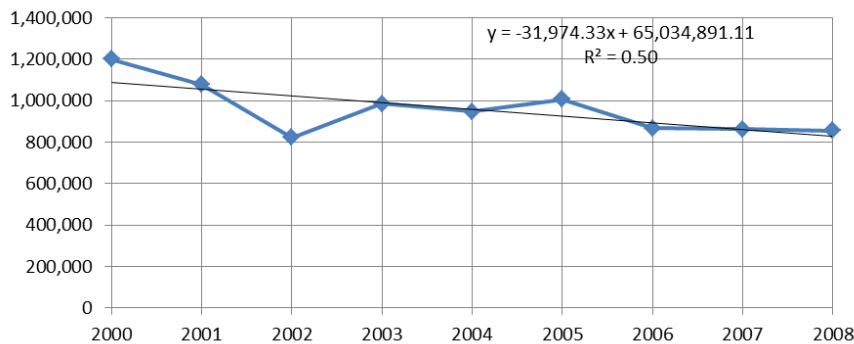
Alternatively, it may be better to take an average of “normal” migration years and enter that as the estimate for the first year after estimated values. No further entry is needed if you want to assume this remains constant.

2. Extrapolate Migration Based on Recent Trends

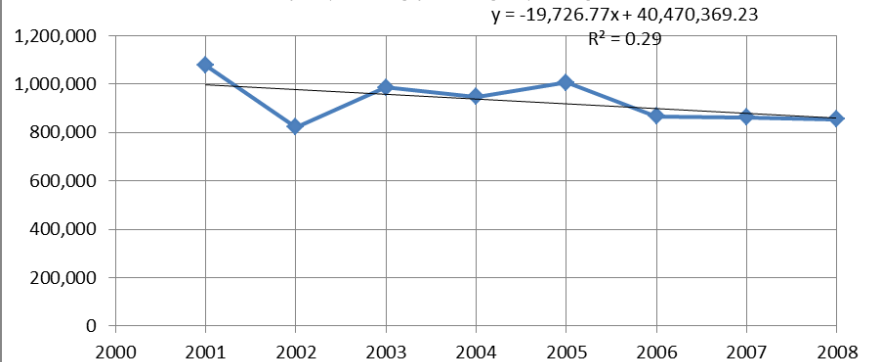
- Fit a curve to recent levels of migration.
 - Linear, logistic, other?
 - Selection of years to include in fitting?
 - Assume some upper (or lower) limit?

2. Extrapolate Migration Based on Recent Trends

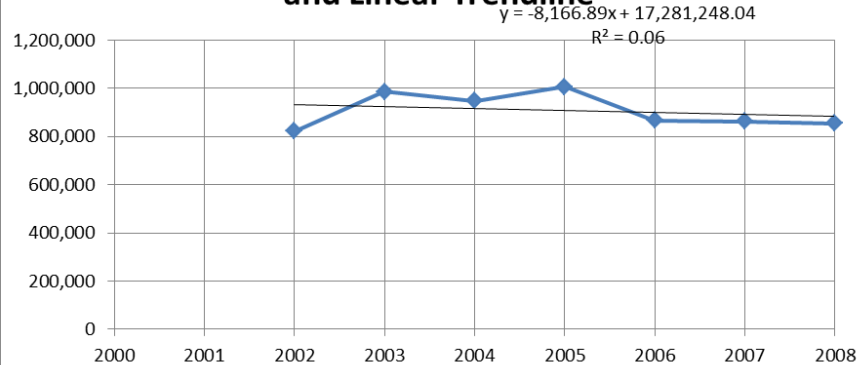
U.S. Net International Migration: Estimates and Linear Trendline



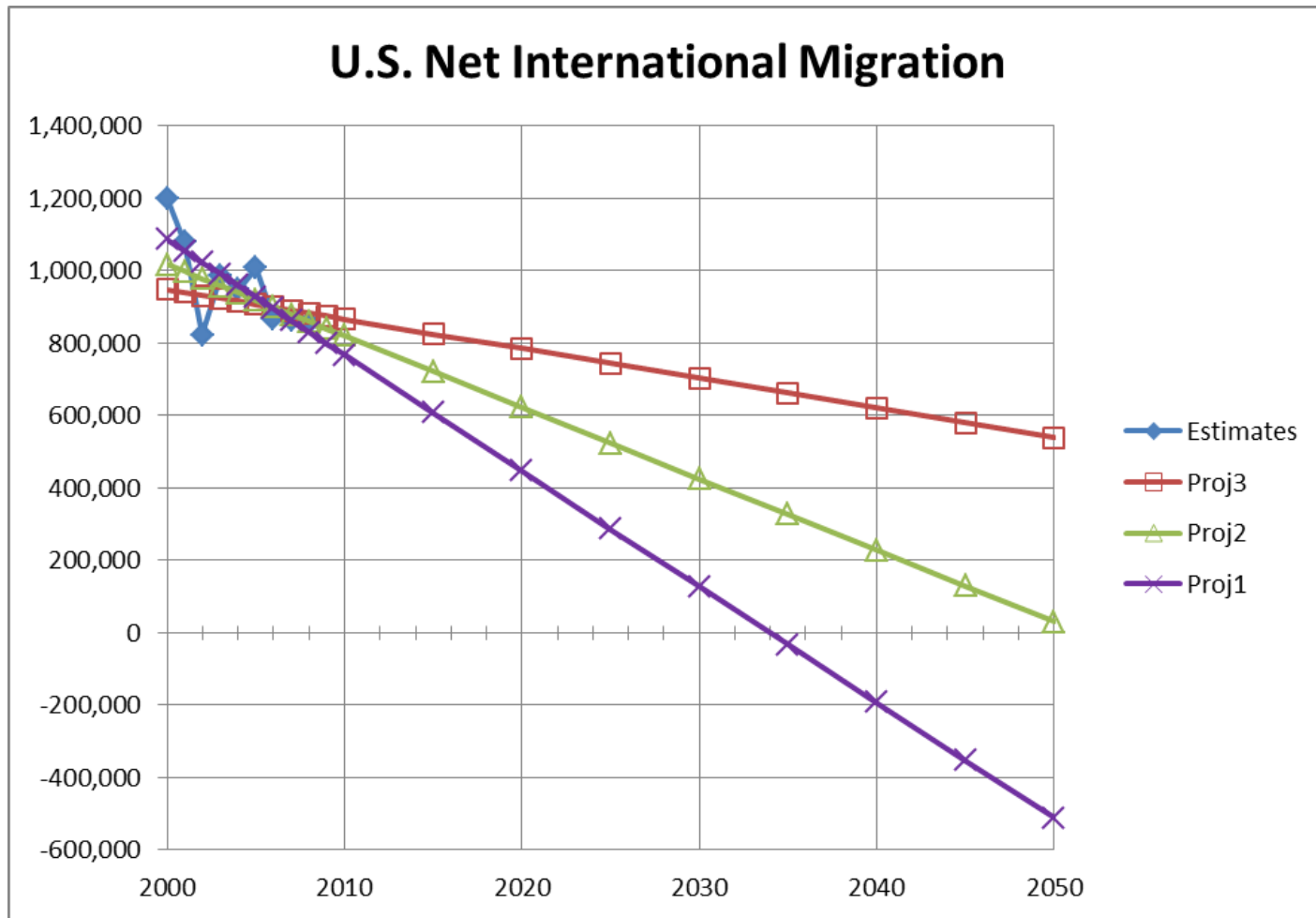
U.S. Net International Migration: Estimates and Linear Trendline



U.S. Net International Migration: Estimates and Linear Trendline



2. Extrapolate Migration Based on Recent Trends



3. Project Migration Based on Assumed Changes or Population Targets

Assuming changes in net migration can be based on:

- Evidence from empirical research
- Population targets: National labor policies, United Nations High Commissioner for Refugees planning reports etc.

3. Project Migration Based on Assumed Changes or Population Targets

Let's look at how to revise the projection based on:

- A. Labor migration has been relatively fixed up until 2015. However, National labor policy aims to reduce labor migration to zero by 2050
- B. There were no refugees until a constant stream from 2010-15. The United Nations High Commissioner for Refugees plan to repatriate refugees by 2020.

3. Project Migration Based on Assumed Changes or Population Targets

- A. National labor policy that aims to reduce labor migration to zero by 2050
- Assuming this was modeled as Primary Migration, simply enter total Migrants of zero in 2050 and DAPPS will interpolate from the last entry to zero in 2050.

3. Project Migration Based on Assumed Changes or Population Targets

Migration

Primary Migration by Age.2010.80.5

Secondary Migration Totals.2009.2009

Secondary Migration Totals.2010.2010

Secondary Migration by Age.2015.80.5

Secondary Migration Totals.2016.2016

Secondary Migration Totals.2020.2020

Secondary Migration Totals.2021.2021

Primary Migration Totals.2050.2050

Primary Migration by Age 2010 Ages 0 to 80 (5-Year)

Age	Male	Female	Total
0 - 4	0	0	0
5 - 9	0	0	0
10 - 14	0	0	0
15 - 19	30,000	50,000	80,000
20 - 24	50,000	60,000	110,000
25 - 29	40,000	40,000	80,000
30 - 34	20,000	20,000	40,000
35 - 39	0	-15,000	-15,000
40 - 44	0	-25,000	-25,000
45 - 49	0	-25,000	-25,000
50 - 54	-5,000	-30,000	-35,000
55 - 59	-10,000	-15,000	-25,000
60 - 64	-15,000	0	-15,000
65 - 69	-10,000	0	-10,000
70 - 74	-5,000	0	-5,000
75 - 79	-2,000	0	-2,000
80 +	0	0	0
Total	93,000	60,000	153,000

Primary Migration Totals 2050 - 2050

Year	Male	Female	Total
2050	0	0	0

3. Project Migration Based on Assumed Changes or Population Targets

- B. There were no refugees until a constant stream from 2010-15. The United Nations High Commissioner for Refugees plan to repatriate refugees by 2020.
- Entering refugees as Secondary Migration
 - Clearly indicate no migration until positive from 2010-15, then negative 2016-20, then back to zero from 2021 on.

3. Project Migration Based on Assumed Changes or Population Targets

Migration		Secondary Migration Totals 2009 - 2009			
		Year	Male	Female	Total
Primary Migration by Age. 2010.80.5		2009	0	0	0
Secondary Migration Totals. 2009. 2009					

Migration		Secondary Migration Totals 2010 - 2010			
		Year	Male	Female	Total
Primary Migration by Age. 2010.80.5		2010	270,000	270,000	540,000
Secondary Migration Totals. 2009. 2009					
Secondary Migration Totals. 2010. 2010					

3. Project Migration Based on Assumed Changes or Population Targets

Migration		Secondary Migration by Age 2015 Ages 0 to 80 (5-Year)			
		Age	Male	Female	Total
Primary Migration by Age. 2010.80.5		0 - 4	50,000	50,000	100,000
Secondary Migration Totals. 2009.2009		5 - 9	45,000	45,000	90,000
Secondary Migration Totals. 2010.2010		10 - 14	40,000	40,000	80,000
Secondary Migration by Age. 2015.80.5		15 - 19	35,000	35,000	70,000
Secondary Migration Totals. 2016.2016		20 - 24	30,000	30,000	60,000
Secondary Migration Totals. 2020.2020		25 - 29	25,000	25,000	50,000
Secondary Migration Totals. 2021.2021		30 - 34	20,000	20,000	40,000
Primary Migration Totals. 2050.2050		35 - 39	15,000	15,000	30,000
		40 - 44	10,000	10,000	20,000
		45 - 49	5,000	5,000	10,000
		50 - 54	0	0	0
		55 - 59	0	0	0
		60 - 64	0	0	0
		65 - 69	0	0	0
		70 - 74	0	0	0
		75 - 79	0	0	0
		80+	0	0	0
		Total	275,000	275,000	550,000

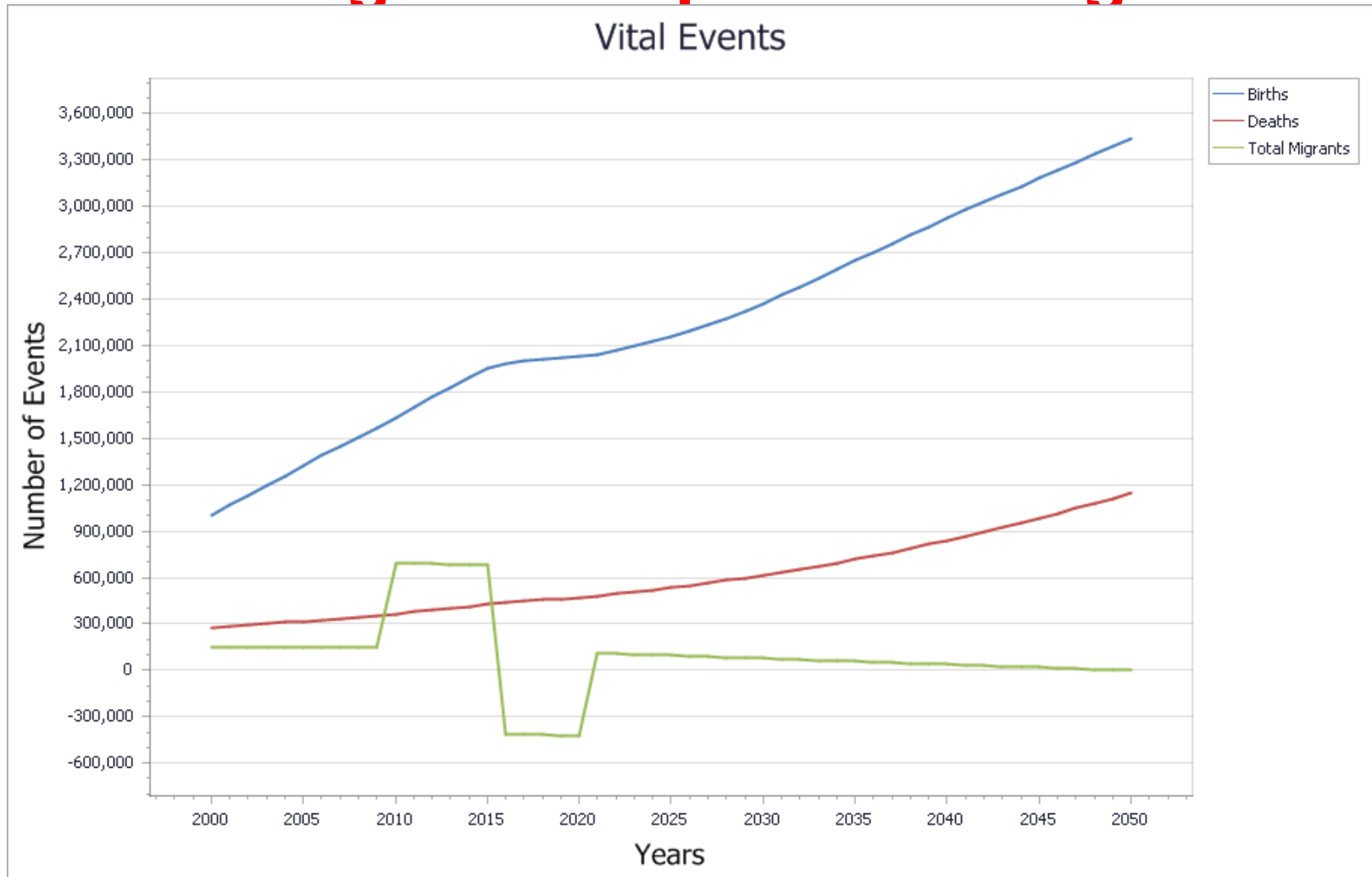
3. Project Migration Based on Assumed Changes or Population Targets

Migration	Secondary Migration Totals 2016 - 2016			
	Year	Male	Female	Total
Primary Migration by Age. 2010. 80. 5	2016	-270,000	-270,000	-540,000
Secondary Migration Totals. 2009. 2009				
Secondary Migration Totals. 2010. 2010				
Secondary Migration by Age. 2015. 80. 5				
Secondary Migration Totals. 2016. 2016				
Secondary Migration Totals. 2020. 2020				
Secondary Migration Totals. 2021. 2021				
Primary Migration Totals. 2050. 2050				

Secondary Migration Totals 2020 - 2020			
Year	Male	Female	Total
▶ 2020	-270,000	-270,000	-540,000

Secondary Migration Totals 2021 - 2021			
Year	Male	Female	Total
▶ 2021	0	0	0

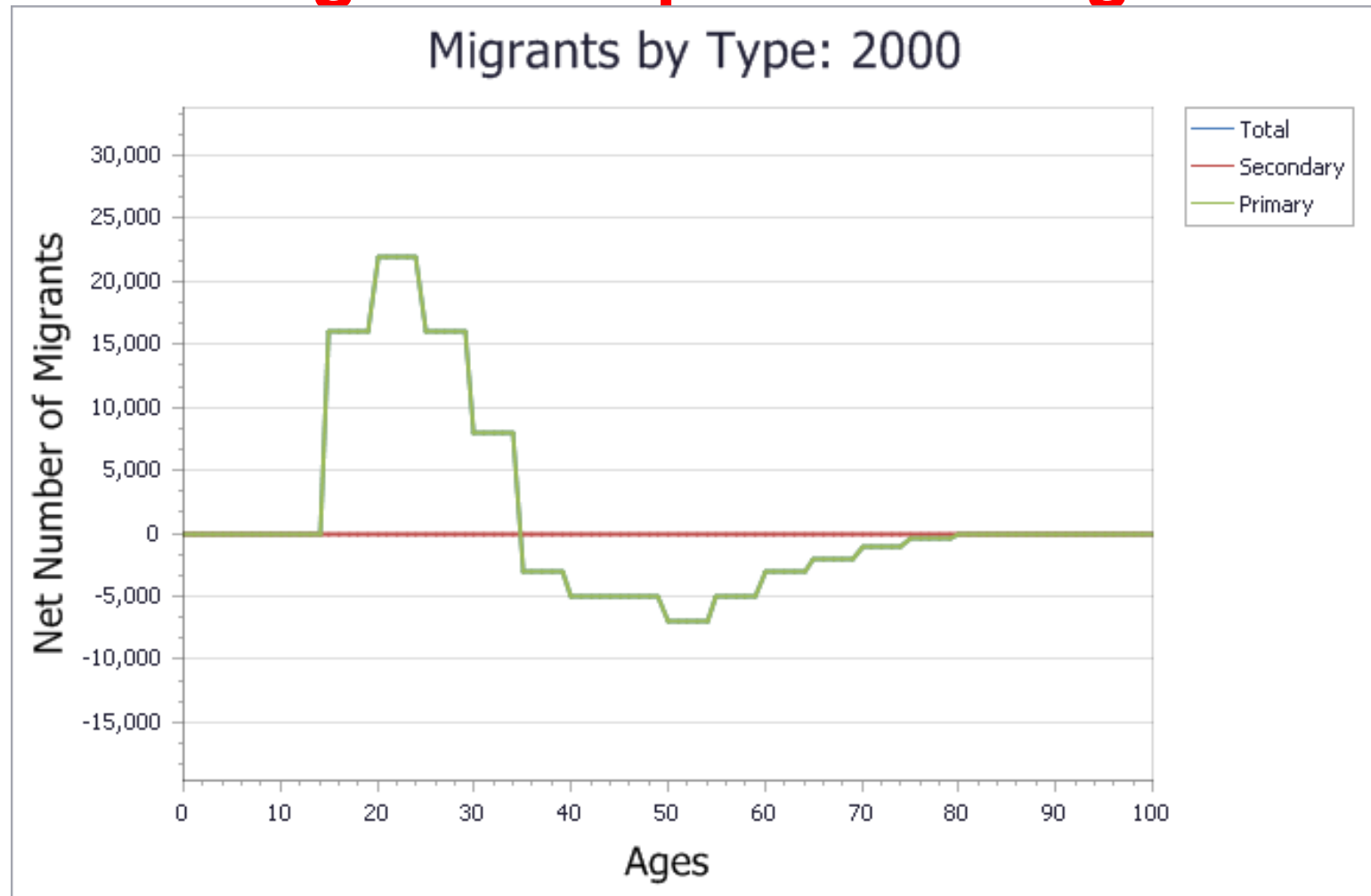
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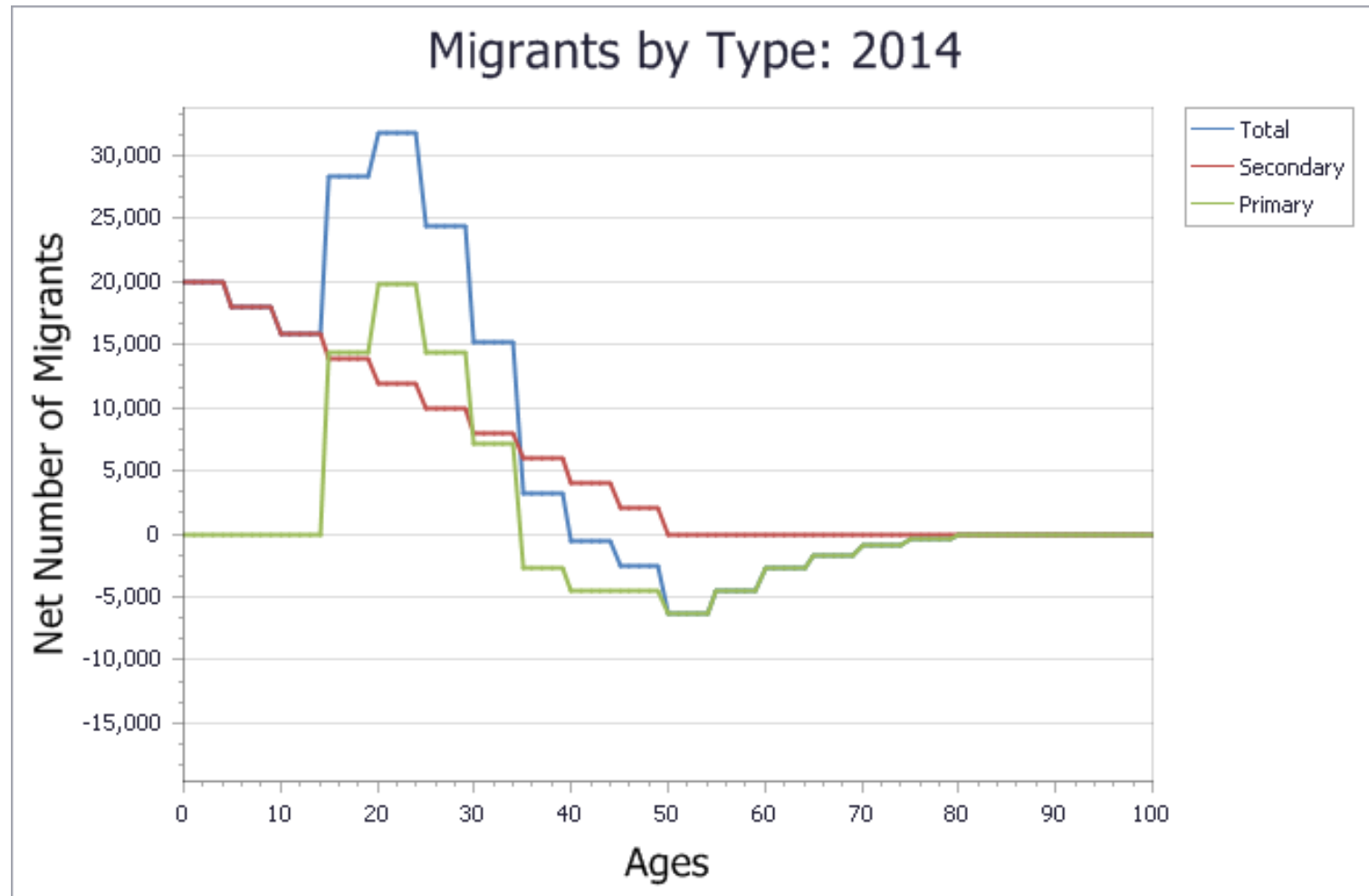
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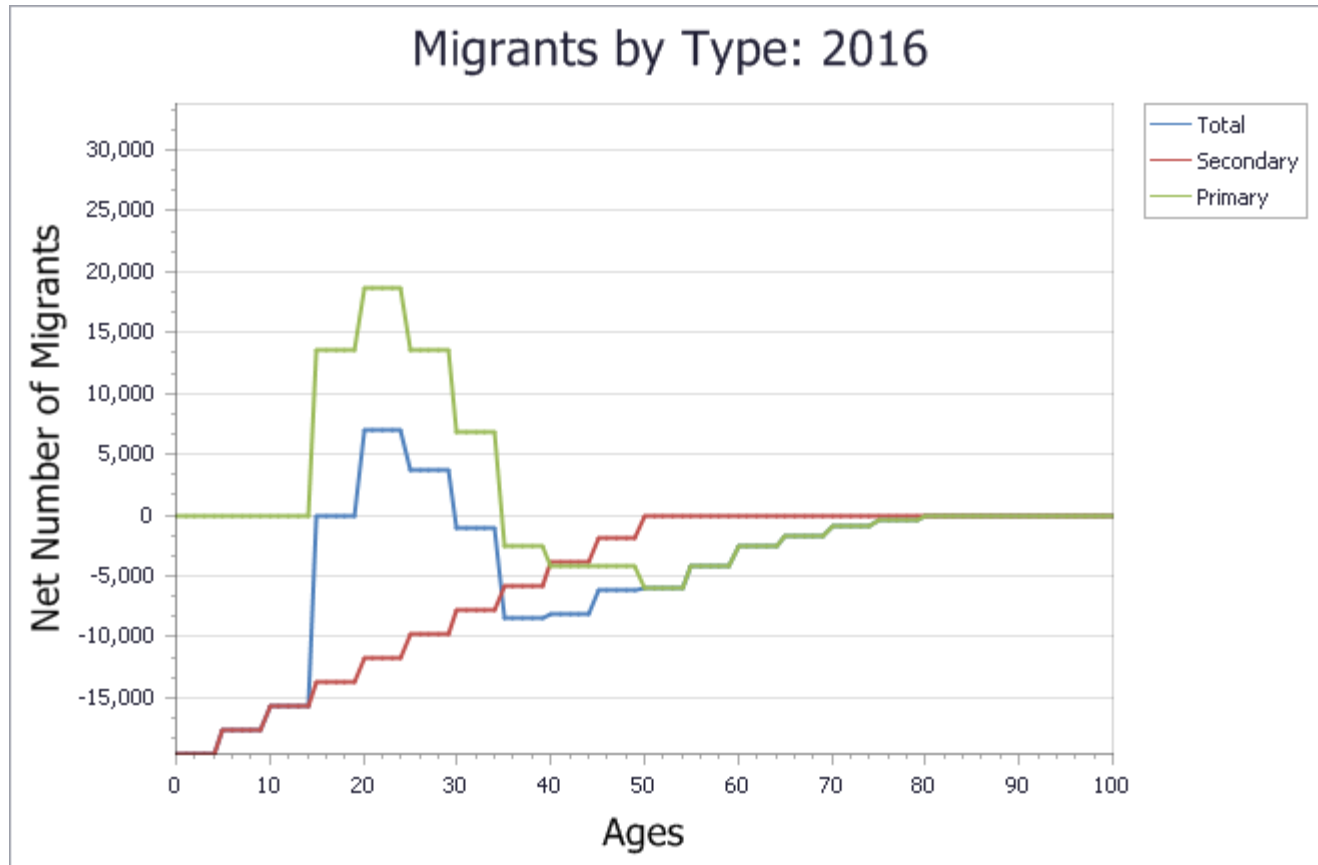
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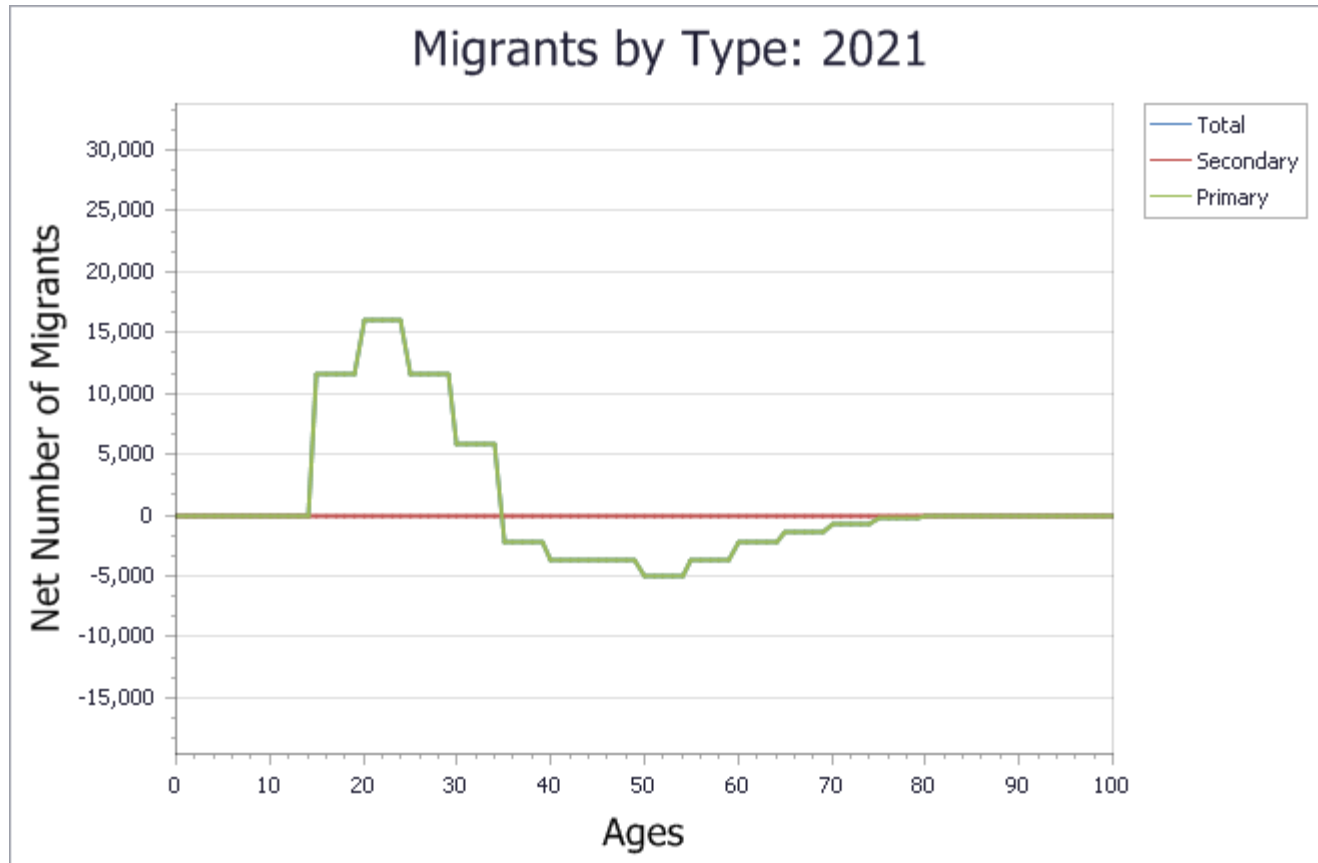
3. Project Migration Based on Assumed Changes or Population Targets



3. Project Migration Based on Assumed Changes or Population Targets



3. Project Migration Based on Assumed Changes or Population Targets



4. Separate Migration Assumptions for Different Groups

- It may be best to create separate projections of the different component types of migration (e.g., labor migration, refugees, long-term migrants, foreign vs. citizen migration). This is because the forces that influence the levels may be changing in different ways.
- In some cases, it may be useful to do separate cohort component projection for the citizen and non-citizen populations (or native vs. foreign-born). These separate projections can then be aggregated using the RUPAGG program. We will cover this after we cover RUPAGG as part of the Subnational Projections Toolkit.



"I migrate first class
for the wing-room."

Exercises

- Look at what data you have to try to come up with projected levels of migration
- Develop some alternative projections of the level of migration
- Look at what data you have on the age distribution of migrants to inform that part of the migration projections