

Life Expectancy at Birth and Net Migration by Nation



FRED® Map
APPLICATION EXERCISE

Lesson Author

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Standards and Benchmarks (see page 7)

Description

Students will search for data on life expectancy at birth and net migration, mapping them and underscoring the reasons for international migration.

Students search for data and visualize them in FRED®, the Federal Reserve Bank of St. Louis's online database. The goals are for students to (1) observe patterns in data and note differences across geographical areas, and (2) hypothesize the reasons for those patterns and differences.

The intended outcome of the activity is for students to use mapped data to identify the relationship between life expectancy at birth and net migration and provide potential explanations for this relationship.

Economic Concepts

Economic growth

Objectives

Students will be able to

- define life expectancy, net migration, and economic growth;
- observe patterns in data;
- note differences in data across geographical areas;
- hypothesize reasons for patterns in data and differences in data across geographical areas;
- identify the inverse relationship between life expectancy at birth and net migration across nations; and
- evaluate potential reasons for the observed inverse relationship between life expectancy at birth and net migration.

Grade Level

High School, College

Compelling Question

Why do people choose to move away from the country where they were born?

Time Required

30-40 minutes

Materials

- Visual 1, one copy for the teacher's reference
 - Handout 1, one copy for each student
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Preparation

- Make sure you are comfortable navigating around FRED®, finding values for data series used in this lesson. A demonstration is located at <https://fredhelp.stlouisfed.org/>.
 - Go to <https://www.stlouisfed.org/education/tools-for-teaching-ap-comparative-government> to compare demographic and economic indicators across seven different countries.
 - Go to <https://www.stlouisfed.org/education/acceleration-of-great-migration> to learn about African American migrant workers from the US South in 1916-1917.
 - Go to <https://www.un.org/en/global-issues/migration> to learn about the drivers of migration.
 - Go to <https://fredblog.stlouisfed.org/2016/03/net-migration-the-people-in-and-out-of-your-neighborhood/> to read a map of international migration flows.
 - Follow the instructions in Handout 1 to use FRED® to create the maps for this activity. URLs to final versions of the maps are provided.
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Procedure

1. Tell the students they are going to create two maps of the world—one showing life expectancy at birth and one showing net migration. Life expectancy is the average number of years a person may expect to live. Net migration is the difference between the number of people moving into a county (called immigrants) and the number of people moving out of the country (called emigrants).
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2. Explain that we all strive to make our—and our families’—lives better. But in countries where strife, conflict, and poverty make life conditions hard, people struggle to cover basic needs like food and shelter.
3. Explain that when faced with injustice, war, and lack of **economic growth**, people often leave their regions or countries of birth to look for better life opportunities somewhere else. Economic growth is the sustained rise over time in a nation’s production of goods and services.
4. Explain to students that there are a number of things that drive migration. We are going to look at the data for one driver—life expectancy. After looking at the data, students will draw conclusions about the relationship between life expectancy and net migration and develop their own explanations for the relationship.
5. Divide the class into small groups of three or four for the remainder of the lesson. Groups with diverse skill sets are preferred. If short on time, randomly assign students to groups. Distribute a copy of *Handout 1: Group Instructions* to each student. Allow time for students to work.
6. Invite students from different groups to share their answers. Discuss the following:
 - On the first map, the very pale green colors indicate countries where life expectancy at birth is low.
 - On the second map, the dark green colors indicate countries where there are more people moving out of the country than there are people moving in.
 - The reasons for low life expectancy at birth are varied. Some are more dominant than others for particular countries at specific points in time. For example, there is internal conflict in Syria, external conflict in Afghanistan, and poverty in Chad and Nigeria.
 - Regardless of the cause, international migration is the last recourse for many individuals seeking a better future for themselves and their families.
 - Although a relationship between low national income and negative net migration might seem obvious, these data do not show it.
7. Ask a student from each group to identify and discuss the most important determining factor and then identify and discuss the least important determining factor. As the students discuss their choices, explain the following:
 - “In-country conflict drives international migration”: In countries like Syria, a civil war that also involves other countries makes living conditions so hard that people flee and become refugees in neighboring countries like Turkey.
 - “Poverty drives international migration”: Although poverty makes people leave their country of birth to look for better opportunities somewhere else, there is no evidence of a relationship between poverty and migration in the data presented in the maps.

- “Poor educational opportunities drive international migration”: Although some people do leave their country of birth to look for better educational opportunities somewhere else, there is no evidence of such a relationship in the data presented in the maps.
 - “International conflict drives international migration”: In countries like Afghanistan, military conflict involving other countries makes living conditions so hard that people flee and become refugees in neighboring countries like Pakistan.
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Closure

8. Conclude the exercise by asking the following questions:
- What is life expectancy? (*The average number of years a person may expect to live*)
 - What is net migration? (*The difference between the number of people moving into a county and the number of people moving out of the country*)
 - What is economic growth? (*The sustained rise over time in a nation’s production of goods and services*)
 - What differences or similarities do you see between life expectancy at birth and net migration across geographical areas in the world? (*Areas where life expectancy is low tend to be areas where net migration is high.*)
 - Why do you think these patterns exist? (*Although there are different reasons for low life expectancy [e.g., war or extreme poverty], everybody wants a better future for their children.*)
 - What relationship do you see between these two variables? (*Where life expectancy is low, net migration is high.*)
 - Is this a direct or an inverse relationship? (*This is an inverse relationship.*)
 - Why does this relationship exist? (*Where life expectancy is low, people look for better life opportunities by moving to a different country.*)
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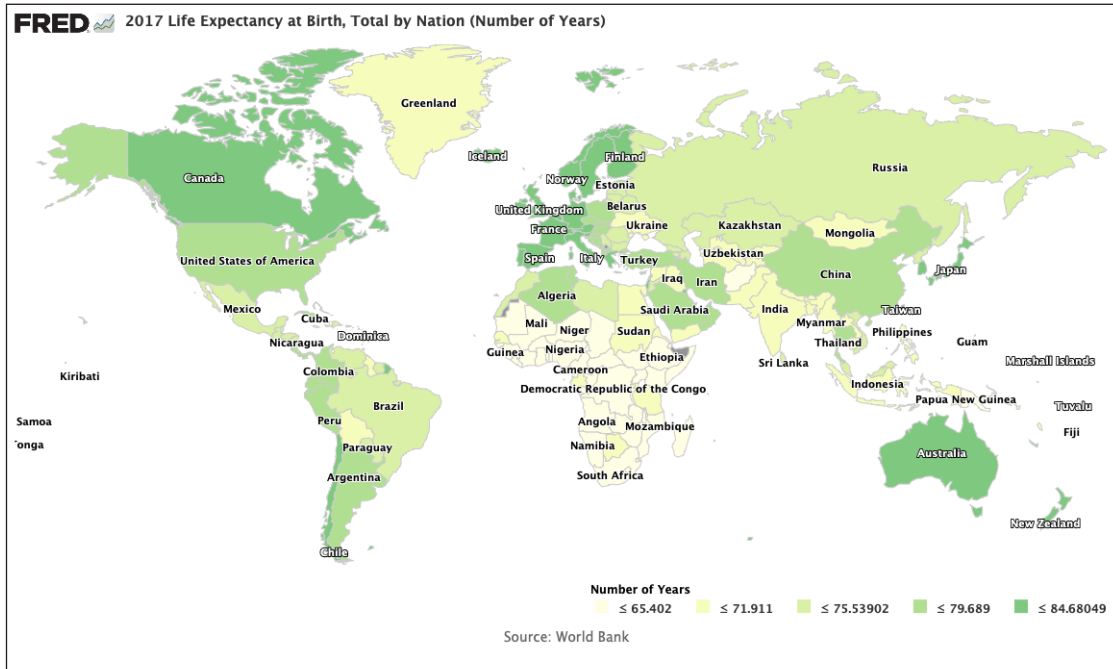
Assessment

9. The following essay prompt could be used as a follow-up to the exercise:
- Low life expectancy at birth and large migration flows are correlated. What economic argument(s) can explain this relationship? Explain your argument(s) carefully and use a historical or contemporary example of international migration.

A sample answer could describe how people living in countries with low life expectancy are likely to move to countries where their children have a better chance of living longer and better lives. A historical or contemporary example of international migration could include the population displacement from the Irish potato famine or the civil war in Syria.

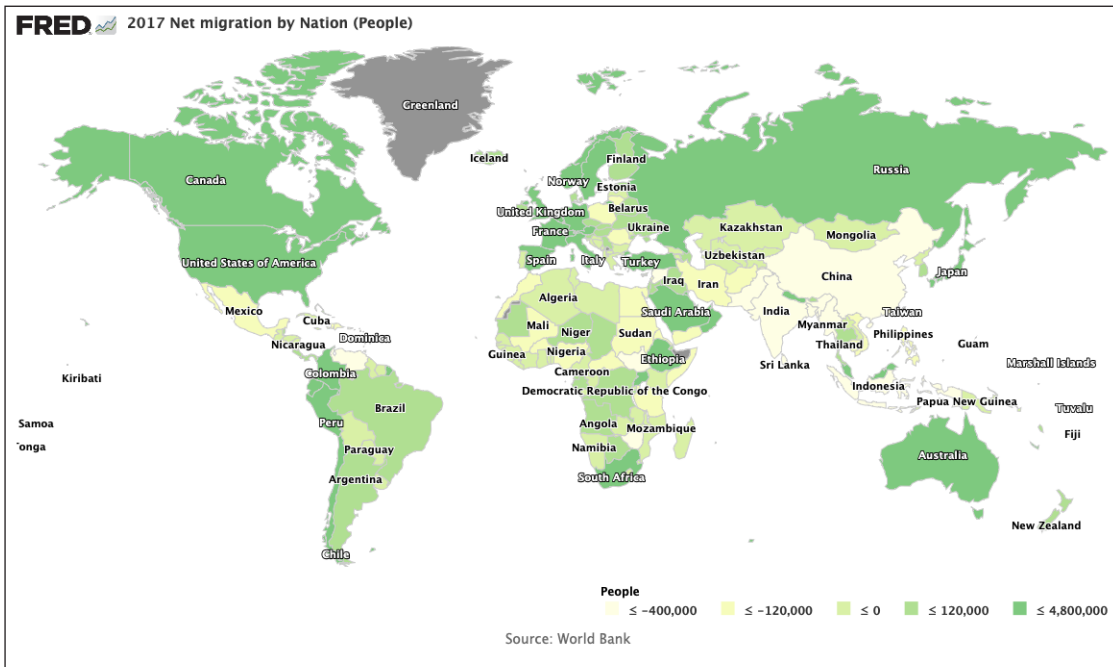
Visual 1: FRED® Maps

Figure 1: 2017 Life Expectancy at Birth, Total by Nation



SOURCE: FRED®, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/graph/?m=T1QC>.

Figure 2: 2017(Five-Year Estimate) Net Migration by Nation



SOURCE: FRED®, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/graph/?m=T1QN>.

Handout 1: Group Instructions

1. On the FRED® website, <https://fred.stlouisfed.org/>, create a map by following the instructions below.
 - Search for “Life Expectancy at Birth, Total for the United States.”
 - Click on “View Map.”
 - Click on “Edit Map” and select “Data grouped by: Equal Interval.”
 - Select “Date: 2017-01-01.”
2. Open a new browser tab, go to the FRED® website, and create a second map by following the instructions below.
 - Search for “Net migration for the United States.”
 - Click on “View Map.”
 - Click on “Edit Map” and select “Data grouped by: User Defined Method.”
 - Enter “-400000” in the top value box, “-120000” in the second value box from the top, “0” in the third value box from the top, “120000” in the fourth value box from the top, and “4800000” in the bottom value box.
 - Select “Date: 2017-01-01.”
3. Examine the maps and hypothesize the reasons for the observed relationship between life expectancy at birth and net migration. Rank the following factors in order from the most likely to influence the observed relationship between life expectancy at birth and net migration to the factors least likely to influence the observed relationship:
 - A. In-country conflict drives international migration.
 - B. Poverty drives international migration.
 - C. Poor educational opportunities drive international migration.
 - D. International conflict drives international migration.

NOTE: Work in two phases: First, identify and discuss the most important factor; second, identify and discuss the least important factor.

Standards and Benchmarks

Voluntary National Content Standards in Economics

Standard 15: Economic Growth

- **Benchmarks: Grade 12**
 2. Historically, economic growth that raises per capita output has been a vehicle for alleviating poverty and raising standards of living.