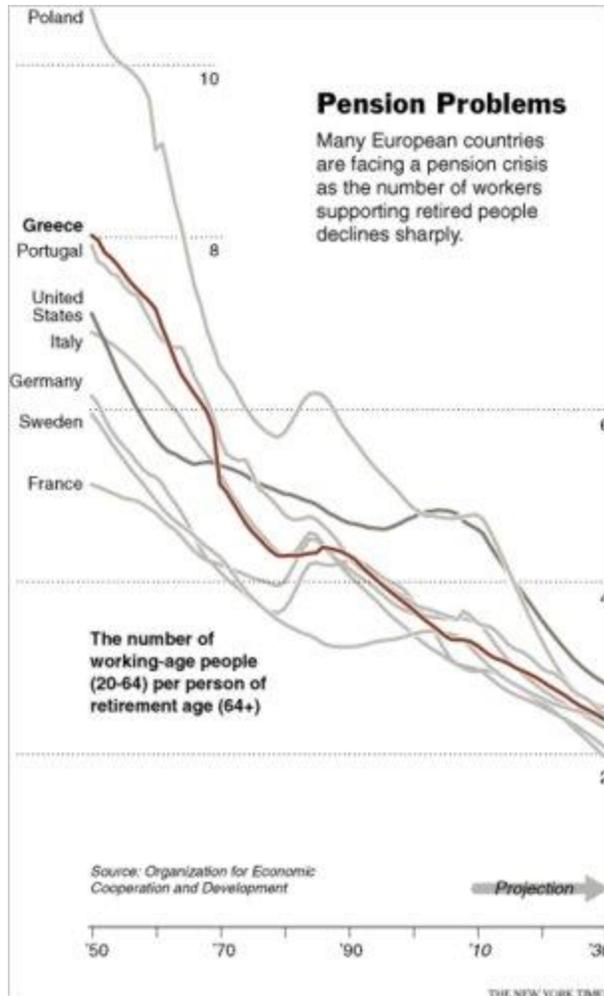


Project 2: Dependency Ratios

In this project you will explore the construction of 3 separate statistics using demographic data. This will be a written project, no Excel; you will hand in hard copy in class and you may leave space to write in any computational work performed. The following ratios have been computed using the derivation rules for the United States in **2002**:

- The age dependency ratio, 59.8, is derived by dividing the combined under-18 and 65-and-over populations by the 18-to-64 population and multiplying by 100.
- The old-age dependency ratio, 19.3, is derived by dividing the population 65 and over by the 18-to-64 population and multiplying by 100.
- The child dependency ratio, 40.5, is derived by dividing the population under 18 by the 18-to-64 population and multiplying by 100.

1. Determine the **2010 current populations**, in the three different age categories used for these ratios, using the *Textbook Data Sets* worksheet *US Pop by Age*. We cannot use more accurate data from census.gov since they shut down the government: <http://www.census.gov/population/age/data/2011comp.html> by **select age groups** (use the Census table for “Age and Sex Composition”).
2. Compute the three different dependency **ratios** using the 2011 population estimates and the derivation rules above.
3. Are these ratios part-to-part or part-to-whole? Explain in one or two coherent sentences.
4. The article, *Europeans Fear Crisis May Threaten Liberal Benefits*, <http://www.nytimes.com/2010/05/23/world/europe/23europe.html?pagewanted=1&th&mc=th>, contains the following graphic. How does this graphic compare to the dependency ratios you computed in #2 above?



- The derivation rules seem to be giving a **percentage**. Explain how it is possible to interpret each of these ratios as a percentage. Be sure to use each number in a sentence, don't just talk in generalities.
- What significance does each ratio have, i.e. why would someone bother to compare the populations of the relevant age categories? Explain in one or two coherent sentences for each ratio under consideration.
- Which of these ratios would increase as the population of the US *continues to age*? Explain in one or two coherent sentences for each ratio under consideration. Note: the aging of our population does **not** refer to the fact that everyone is getting older! It means that the **percentage** of our population that is 65 and older is increasing.

8. Find population estimates of the three age categories for the year 2050 (search for population projections) and re-compute the ratios.
9. Ireland experienced a recent economic boom in the 1990's, and some have attributed this to a declining age dependency ratio. Explain why this makes sense in a few coherent sentences.
10. Use the world factbook: <https://www.cia.gov/library/publications/the-world-factbook/> to compute the dependency ratios for Ireland.
11. The age structure breakdown given in the world factbook is 0-14 and 15-64, which is different from the under 18 age breakdown above. How will the different age structure affect each ratio? Write a sentence for each ratio under consideration.
12. How do you think the dependency ratios for a Third World country would compare to the United States? Explain why you think so in a sentence or two for each ratio under consideration.
13. Once again use the world factbook to compute the dependency ratios for a Third World country. Analyze your predictions from #11 in a sentence or two. How accurate were you?
14. Imagine you have to write a brief **1 page** article for the online school newspaper on dependency ratios. Write such an article using any of the information above that you find relevant (this is a QR class, you should include some statistics!). Be sure to include a catchy title for your article 😊

Please include the following:

1. Identify a statistic we should know and its precise definition.
2. Present a few cogent reasons why you believe the statistic is important.
3. Make the number meaningful for your reader (e.g. by restating in more easily grasped terms or by making comparisons).
4. Provide source information for you number, the reference librarians can be of assistance in helping you locate and search statistical databases.
5. Answer Joel Best's 3 questions we should ask of any statistic:
 - a. Who created the statistic?
 - b. Why did they create it?
 - c. How did they create it?
6. Discuss the "dark figure" associated to this statistic and any false positives/negatives resulting from the definition.

The paper should be coherent and structured. It should have a meaningful title, an introduction, and a conclusion. Be certain to support your claims with evidence, to exercise appropriate caution in your arguments, and to acknowledge uncertainty and complexity where relevant. Anticipate and address the reasonable questions of the critical reader.

You will be graded using the following rubric:

- Number selection: appropriateness and significance of the topic [10]
- Reasons supporting number importance: quality and clarity [10]
- Number presentation: definition and comparative contrasts [10]
- Source information: identification and reliability evaluation, who/why/how [10]
- Paper organization: structure, opening and closing [20]
- Writing quality: grammar, word usage, sentence focus [20]
- Argument quality: statement clarity and evidence for claims [10]
- Complexity: uncertainties recognized and questions raised, dark figure, false negatives/positives [10]

Writing Quality Tips:

Proffred/pronouns should match nouns/"very" is not ~~very~~ necessary/strive for concision/don't begin sentences with numbers/"data" is/are singular/plural ... be consistent