

Lesson Plan

How Far Would Your Money Go in Another State?

Working With Price Differences

Overview

Price differences from one part of the United States to another can have a big impact on students' college and career plans. Don't let that come as a surprise! Students will develop their math and reasoning skills while learning why they need to keep living expenses in mind when planning their futures.

Learning Objectives

At the end of this lesson, students should be able to:

- Understand that price levels vary across the United States and this affects residents' purchasing power
- Calculate price differences from place to place using regional price parities
- Adjust a nominal salary figure to reflect a state's price levels
- Compare salary offers from jobs in different places based on differing price levels

Resources

- For each student, a printed copy of the Activity **How Far Would Your Money Go in Another State?** It's also available to read online at [bea.gov/classroom](https://www.bea.gov/classroom).
- For students working offline, a printable chart showing state RPPs is included with this lesson: **Regional Price Parities by State in 2017**.
- Students with online access can also find the regional price parities for states on [bea.gov](https://www.bea.gov) (and RPPs for metropolitan areas, too.)

Process

Note: The sample answers below are based on the 2017 RPP data published on [bea.gov](https://www.bea.gov) in May 2019. RPP data for 2018 will be published in May 2020 and the answers below will no longer reflect the latest published data. A handout with Regional Price Parities by State in 2017 accompanies this lesson.

BEA also has metropolitan area RPPs and RPPs for states' non-metropolitan portions. You can tailor this lesson to use local instead of state data.

Give each student a copy of the introductory section and activities. Ask students to read the introductory text:

How Far Would Your Money Go in Another State?

Working With Price Differences

Do you ever wonder about living in a different state? You might move with your family, go to a college in another state, or move for your career. In many cases, you'd notice that living in a new place is more expensive or less expensive than where you are now.

What if you were job-hunting and received offers in two different states for about the same pay? How could you make a more informed decision about which job to take? It would be a good idea to check out living costs in both areas. Would your paycheck buy more goods and services, including rent, in one place than the other?

You can compare price levels between two places by using **regional price parities**, or RPPs, produced by the U.S. Bureau of Economic Analysis. An area's RPP for all items compares its price level for all goods and services to the national average, which is set at 100.

Prices can vary greatly even within the same state. BEA produces RPPs for all 50 states and the District of Columbia, for metropolitan statistical areas, and for the nonmetropolitan portion of each state. They are published along with real personal income data in the Regional Data section of BEA's Interactive Data at <https://apps.bea.gov/itable/>.

You can also see the latest state RPPs within the real personal income release found at <https://www.bea.gov/data/prices-inflation/regional-price-parities-state-and-metro-area>.

You may want to lead a class discussion around these questions:

- *Is there another state you might want to live in one day? Why?*
- *Do you think living expenses there are more or less than where you live now?*
- *Will comparing statewide price differences from one state to another tell the whole story?*
What about the prices you might find in big cities vs. rural areas, even within the same state?
- *Do you think it's usually more expensive to live in a big city or a small town?*

Ask students to read the section titled **Using Regional Price Parities to Compare Price Levels** and answer the questions that follow.

Using Regional Price Parities to Compare Price Levels

To compare the price levels of two states, you can use their RPPs in this formula:

$$(\text{State A's RPP} / \text{State B's RPP}) \times 100$$

For example, using Colorado and Ohio:

1) Find the states' all items RPPs in BEA's [Regional Interactive Data](#) or by using the chart included as a resource with this lesson, **Regional Price Parities by State in 2017**.

Colorado's RPP is **103.2**.

Ohio's RPP is **88.9**.

2) Divide Colorado's higher RPP by Ohio's lower RPP. Multiply the answer by 100:

$$(103.2 / 88.9) * 100 = 116.1$$

Rounding to a whole number, average prices in Colorado are 116 percent of average prices in Ohio. Goods and services that cost \$100 in Ohio would cost you \$116 on average in Colorado.

In other words, Colorado's prices are 16 percent higher than Ohio's.

To use Colorado's price level as your starting point, divide Ohio's lower RPP by Colorado's higher RPP. Multiply the answer by 100:

$$(88.9 / 103.2) * 100 = 0.86$$

Ohio's prices are 86 percent of Colorado's prices. Goods and services that cost \$100 in Colorado would cost you \$86 on average in Ohio.

Activities

Activities Part A:

Some answers will be specific to your state; see the regional price parities chart to find those answers. This answer key uses data for 2017 (available in the *Regional Price Parities by State in 2017* handout and published online May 2018. Online data tables are updated annually).

1. What is your state's all items RPP? _____
2. At what number is the U.S. RPP always set? 100
3. Is your state's price level higher or lower than the national average (or the same)?
Circle one: Higher Lower The same
4. If your state's RPP is higher or lower than the national average, fill in the correct blank:
My state's price level is _____ percent higher than U.S. level.
State RPP – 100 = _____ percent
My state's price level is _____ percent lower than the U.S. level.
100 – State RPP = _____ percent

Activities Part B:

5. Showing your work, calculate the difference between the price levels of California and South Dakota to fill in the blank in the sentence below (round to a whole number when writing the percentage). Hint: Remember the formula you learned above.

$$\text{California} = 114.8.$$

$$\text{South Dakota} = 88.2$$

$$114.8 / 88.2 = 1.30$$

$$1.30 \times 100 = 130$$

$$130 - 100 = 30$$

California is 30 percent more expensive than South Dakota.

Activities Part C:

Use the regional price parities chart to answer these questions:

6. Which state has the highest prices? Hawaii
7. Why do you think prices might be higher there than in other states?

Students might mention the extra cost of transporting goods to an island or the high cost of real estate in a location that's in-demand for tourism and luxury housing.

8. Which state has the lowest prices? Mississippi
9. How much higher are prices in the most expensive state, compared with the least expensive state? Calculate using their RPPs.

Hawaii = 118.5

Mississippi = 85.7

$118.5 / 85.7 = 1.38$ (Answer rounded to the nearest whole number.)

$1.38 \times 100 = 138$ (Prices in Hawaii are 138 percent of prices in Mississippi.)

$138 - 100 = 38$

Answer: Prices in Hawaii are 38 percent higher than in Mississippi.

Activities Part D:

Imagine you received job offers paying \$50,000 per year from three different companies, each located in a different state: the state you live in now, Hawaii, and Mississippi.

You want to figure out which job offers the most purchasing power in its location, in other words, how far your money would go there.

- If you had to guess, do you think \$50,000 would buy more goods and services in Hawaii or Mississippi?
- Do you think living in your state is relatively expensive or inexpensive?

Use the states' regional price parities to find out in the problems below. (If you live in Hawaii or Mississippi now, choose a third state to use as "your state" in the problems.)

Show your work. This formula will help:

Nominal Income / (RPP / 100) = Income adjusted for regional price levels

In this case, the nominal income will be \$50,000.

10. What is the RPP-adjusted value of \$50,000 for your state?

$$50,000 / (\text{Your State's RPP} / 100) = \text{Income adjusted by RPP}$$

** If the RPP is above 100 your adjusted income will be less than the \$50,000 and if RPP is below 100 your adjusted income will be more than \$50,000.*

11. What is the RPP-adjusted value of \$50,000 for Hawaii?

$$\underline{50,000 / (118.5 / 100) = \$42,194}$$

12. What is the RPP-adjusted value of \$50,000 for Mississippi?

$$\underline{50,000 / (85.7 / 100) = \$58,343}$$

13. Based solely on statewide price levels, in which state does a job paying \$50,000 have the most purchasing power? Mississippi