



Worksheet – Exchange rate

Related news articles: [Top 10 strongest currencies in the world in 2023](#) (Forbes, March 23, 2023) and [Burgernomics: What is the Big Mac index?](#) (NewsBytes, March 3, 2023)

Summary: This worksheet could be used for in-class or homework practice. Students will be asked to read two short articles: one about the strongest currencies in the world in 2023, and another about the Big Mac index and its implications. Then, students will be asked to analyze how the purchasing power of consumers changes when the domestic currency appreciates or depreciates, and to apply the theory of the purchasing power parity to real-world scenarios. Students will also need to understand what the Big Mac index measures, and analyze real-world scenarios to determine whether a currency is under- or overvalued and whether it is a good investment opportunity. **Answers are provided at the end of this document.**

Learning objectives:

At the end of this worksheet, students will be able to:

- o Analyze the effect of a strengthening of the U.S. dollar against the British pound on Americans' purchasing power;
- o Apply knowledge about exchange rates to real-world scenarios;
- o Convert a given amount of money from one currency to another given the exchange rate;
- o Understand what the Big Mac index measures;
- o Apply the theory of the purchasing power parity to predict the price of a burger in different countries, given the exchange rate;
- o Evaluate whether a currency is under- or overvalued and whether it is a good investment opportunity for foreign investors, given the actual exchange rate and the prices of a good in two countries.

Economics concepts: Exchange rate, Purchasing power parity, Appreciation, Depreciation

Suggested excerpts:

[Top 10 strongest currencies in the world in 2023](#) (Forbes, March 23, 2023)

“The U.S. dollar is generally seen as the most powerful currency in the world. It’s the most-traded currency on the global stage by a wide margin.”

“However—perhaps surprisingly—the greenback is not the strongest of the 180-odd traditional fiat currencies recognized as legal tender worldwide. A fiat currency is money that has a value not tied to a physical commodity like gold or silver.”

“Foreign currency is traded in pairs: You buy U.S. dollars with British pounds, for example. As a result, one currency is always priced relative to another currency, and this price is known as the exchange rate.”

“Most currencies are “floating,” meaning their value fluctuates depending on demand and supply. However, some currencies are “pegged,” which means their value relative to another currency, such as the dollar, is fixed at an agreed-upon rate.”

“Exchange rates affect the cost of goods and services in a foreign currency.”

“The Kuwaiti dinar is the strongest currency in the world, with 1 dinar buying 3.26 dollars (or, put another way, \$1 equals 0.31 Kuwaiti dinar). [...] the country earns much of its wealth as a leading global exporter of oil.”

“The Bahraini dinar is the second-strongest currency in the world, with 1 dinar buying 2.65 dollars (or \$1 equals 0.38 Bahraini dinar). [...] Like Kuwait, the country earns much of its wealth from oil and gas exports.”

“The Omani rial is the third-strongest currency in the world, with 1 rial buying 2.60 dollars (or \$1 equals 0.38 Omani rial). [...] Oman is a major exporter of oil and gas.”

“The Jordanian dinar is the fourth-strongest currency in the world, with 1 dinar buying 1.41 dollars (or \$1 equals 0.71 Jordanian dinar).”

“The British pound is the fifth-strongest currency in the world, with 1 pound buying 1.22 dollars (or \$1 equals 0.82 British pound). Britain’s economy is the world’s sixth largest by gross domestic product (GDP), according to the World Bank.”

“The Cayman Islands dollar is in a tie for sixth among the strongest currencies in the world...”

“The Gibraltar pound shares the No. 6 spot among the world’s strongest currencies...”

“The Swiss franc is tied for eighth among the strongest currencies in the world...”

“The euro shares the No. 8 spot among the world’s strongest currencies, with 1 euro buying 1.08 dollars (or \$1 equals 0.93 euro). The euro is the official currency of 20 out of the 27 countries that form the European Union.”

“The U.S. dollar is the 10th-strongest currency in the world, with 1 dollar buying 1 dollar. (Obviously.) All other units of currency across the globe are worth less than a buck.”

“The U.S. is the world’s largest economy by GDP, and the dollar is easily the most-traded currency globally.”

“The dollar also is the largest reserve currency in the world—that is, the currency most held by central banks—and is the currency used to price many commodities, including oil, gold and copper.”

[Burgernomics: What is the Big Mac index?](#) (NewsBytes, March 3, 2023)

“... there's something called The Big Mac Index, named after McDonald's king-size burger.”

“The Big Mac Index was created by The Economist magazine in 1986 as a lighthearted way to measure the purchasing power of currencies around the world. It is based on the theory of purchasing power parity, which suggests that the expenditure on a similar commodity (in this case, a burger) must be the same in both currencies when accounting for the exchange rate.”

“If the price of a Big Mac in India is significantly lower than in other countries, it indicates that the Rupee is undervalued and a good investment opportunity for foreign investors.”

Questions

1. Suppose that one Bahraini dinar could buy \$2.65. Is the Bahraini dinar or the U.S. dollar stronger? In your own words, what does it mean that one currency is stronger than another currency?
2. True or false? According to the suggested article published in Forbes, the U.S. dollar is the most traded currency in the world, and the world's largest reserve currency, but there are other currencies that are stronger.
3. Suppose that "the [U.S.] dollar strengthens against the British pound." Would this make vacations of American travelers in London more or less expensive? What about the vacations of British travelers in the U.S.?
4. Suppose that the Egyptian pound weakens. Would this make Egypt a more or less attractive travel destination for foreign travelers?
5. Fill in the blanks. A strengthening of the U.S. dollar against the British pound would _____ (increase/decrease) the purchasing power of American consumers, and would make the goods the U.S. purchases from the U.K. _____ (more expensive/cheaper).
6. According to the suggested article published in Forbes, which was the strongest currency in 2023?
 - a. U.S. dollar
 - b. Bahraini dinar
 - c. Kuwaiti dinar
 - d. British pound
7. According to the suggested article published in Forbes, the three countries that have the strongest currencies are world leading producers and exporters of:
 - a. Oil and gas.
 - b. Diamonds.
 - c. Apparel.
 - d. Consumer electronics.
8. Suppose that one Swiss franc can buy \$1.08. How many Swiss francs would a Swiss traveler in Orlando, FL need to pay off his \$150 hotel bill?
 - a. 161.11 Swiss francs.
 - b. 138.89 Swiss francs.
 - c. 162 Swiss francs.
 - d. 148 Swiss francs.

9. According to the suggested article from NewsBytes, what does the Big Mac index measure?
- The utility consumers obtain from the consumption of one Big Mac burger around the world.
 - The purchasing power of currencies around the world.
 - The revenue McDonald's earns from selling one Big Mac around the world.
 - The profit McDonald's earns from selling one Big Mac around the world.
10. In your own words, what does the purchasing power parity theory suggest about the price of one Big Mac burger in different countries?

Suppose that one British pound equals 100 Indian rupees, and a burger costs 4 British pounds in the UK. Use this information to answer Questions 11 to 13.

11. According to the theory of the purchasing power parity, how much (in Indian rupees) is this same burger expected to cost in India?
12. Suppose that this same burger costs 220 rupees in India. Compared to the burger in the UK, the burger in India is:
- 45% cheaper.
 - 55% cheaper.
 - 45% more expensive.
 - 55% more expensive.
13. If this same burger costs 220 rupees in India, how many British pounds would you have to spend in India to buy that burger there?
- 4 British pounds.
 - 0.45 British pounds.
 - 30 British pounds.
 - 2.20 British pounds.

14. Suppose that a Big Mac costs 6.70 Swiss francs in Switzerland, it costs \$5.36 in the U.S., and the actual exchange rate is 0.92, i.e., \$1 equals 0.92 Swiss francs. Which of the following statements is *true*?
- The price of a Big Mac in Switzerland is lower than the price of a Big Mac in the U.S.
 - Given the actual exchange rate, according to the theory of the purchasing power parity, a Big Mac that costs \$5.36 in the U.S. should cost 4.93 francs in Switzerland.

- c. The Swiss franc is undervalued relative to the U.S. dollar.
- d. The Swiss franc is a good investment opportunity for foreign investors.

15. Fill in the blanks. Suppose that Brazil increases the interest rates. The higher interest rates would make Brazilian assets _____ (more/less) attractive to investors. This would _____ (decrease/increase) the demand for the Brazilian real, and the Brazilian currency would _____ (depreciate/appreciate).

Answer Key

1. Suppose that one Bahraini dinar could buy \$2.65. Is the Bahraini dinar or the U.S. dollar stronger? In your own words, what does it mean that one currency is stronger than another currency?

Answer: The Bahraini dinar is stronger because one Bahraini dinar is worth more than \$1. In fact, the Bahraini dinar is the second strongest currency as suggested by the Forbes article.

2. True or false? According to the suggested article published in Forbes, the U.S. dollar is the most traded currency in the world, and the world's largest reserve currency, but there are other currencies that are stronger.

Answer: True.

3. Suppose that "the [U.S.] dollar strengthens against the British pound." Would this make vacations of American travelers in London more or less expensive? What about the vacations of British travelers in the U.S.?

Answer: If the U.S. dollar strengthens against the British pound, British travelers will need more pounds to buy a dollar. Therefore, it will become more expensive for British travelers to visit the U.S. In addition, Americans will be able to get more British pounds for a U.S. dollar, which will make it cheaper for them to visit the U.K.

4. Suppose that the Egyptian pound weakens. Would this make Egypt a more or less attractive travel destination for foreign travelers?

Answer: If the Egyptian pound weakens, foreigners will need less of their foreign money to buy an Egyptian pound. This will make Egypt a more attractive travel destination.

5. Fill in the blanks. A strengthening of the U.S. dollar against the British pound would _____ (increase/decrease) the purchasing power of American consumers, and would make the goods the U.S. purchases from the U.K. _____ (more expensive/cheaper).

Answer: A strengthening of the U.S. dollar against the British pound would increase the purchasing power of American consumers, and would make the goods the U.S. purchases from the U.K. cheaper.

6. According to the suggested article published in Forbes, which was the strongest currency in 2023?

- a. U.S. dollar
- b. Bahraini dinar
- c. Kuwaiti dinar
- d. British pound

Answer: C. The Kuwaiti dinar was the strongest currency in 2023, followed by the Bahraini dinar (#2), the Omani rial (#3), the Jordanian dinar (#4), the British pound (#5), the Cayman Islands dollar and the Gibraltar pound (#6 tied), the Swiss franc and the euro (#8 tied), and the U.S. dollar (#10).

7. According to the suggested article published in Forbes, the three countries that have the strongest currencies are world leading producers and exporters of:

- a. Oil and gas.
- b. Diamonds.
- c. Apparel.
- d. Consumer electronics.

Answer: A. Kuwait, Bahrain and Oman earn their wealth from oil and natural gas production and exports.

8. Suppose that one Swiss franc can buy \$1.08. How many Swiss francs would a Swiss traveler in Orlando, FL need to pay off his \$150 hotel bill?

- a. 161.11 Swiss francs.
- b. 138.89 Swiss francs.
- c. 162 Swiss francs.
- d. 148 Swiss francs.

Answer: B. Given that one Swiss franc can buy \$1.08, \$150 would equal $150/1.08$, or 138.89 Swiss francs.

9. According to the suggested article from NewsBytes, what does the Big Mac index measure?

- a. The utility consumers obtain from the consumption of one Big Mac burger around the world.

- b. The purchasing power of currencies around the world.
- c. The revenue McDonald's earns from selling one Big Mac around the world.
- d. The profit McDonald's earns from selling one Big Mac around the world.

Answer: B.

10. In your own words, what does the purchasing power parity theory suggest about the price of one Big Mac burger in different countries?

Answer: The theory of the purchasing power parity suggests that the expenditure on one burger "should be roughly the same in every country, once you take into account exchange rates."

Suppose that one British pound equals 100 Indian rupees, and a burger costs 4 British pounds in the UK. Use this information to answer Questions 11 to 13.

11. According to the theory of the purchasing power parity, how much (in Indian rupees) is this same burger expected to cost in India?

Answer: Given the information, a burger in India should cost $4 \times 100 = 400$ rupees.

12. Suppose that this same burger costs 220 rupees in India. Compared to the burger in the UK, the burger in India is:

- a. 45% cheaper.
- b. 55% cheaper.
- c. 45% more expensive.
- d. 55% more expensive.

Answer: A. As explained in Question 11, the theory of purchasing power parity suggests that the burger should cost 400 rupees. If it costs 220 rupees instead, this implies that it is $(400-220) \times 100 / 400 = 45\%$ cheaper.

13. If this same burger costs 220 rupees in India, how many British pounds would you have to spend in India to buy that burger there?

- a. 4 British pounds.
- b. 0.45 British pounds.
- c. 30 British pounds.
- d. 2.20 British pounds.

Answer: D. Given that one British pound equals 100 rupees, 220 rupees would equal $220/100 = 2.20$ British pounds.

14. Suppose that a Big Mac costs 6.70 Swiss francs in Switzerland, it costs \$5.36 in the U.S., and the actual exchange rate is 0.92, i.e., \$1 equals 0.92 Swiss francs. Which of the following statements is *true*?

- a. The price of a Big Mac in Switzerland is lower than the price of a Big Mac in the U.S.
- b. Given the actual exchange rate, according to the theory of the purchasing power parity, a Big Mac that costs \$5.36 in the U.S. should cost 4.93 francs in Switzerland.
- c. The Swiss franc is undervalued relative to the U.S. dollar.
- d. The Swiss franc is a good investment opportunity for foreign investors.

Answer: B. Given that \$1 equals 0.92 Swiss francs, a Big Mac that costs \$5.36 in the U.S. should cost $5.36 \times 0.92 = 4.93$ francs in Switzerland. However, it is given that it costs 6.70 francs. Therefore, the price of a Big Mac in Switzerland is higher than the price of a Big Mac in the U.S. This implies that the Swiss franc is $[(6.70 - 4.93) \times 100] / 4.93 = 35.9\%$ overvalued relative to the U.S. dollar. Thus, the Swiss franc may not be a good investment opportunity for foreign investors.

Teacher's tip: You can create similar questions using the Big Mac prices and actual exchange rates provided on this website: <https://www.economist.com/big-mac-index>

15. Fill in the blanks. Suppose that Brazil increases the interest rates. The higher interest rates would make Brazilian assets _____ (more/less) attractive to investors. This would _____ (decrease/increase) the demand for the Brazilian real, and the Brazilian currency would _____ (depreciate/appreciate).

Answer: The higher interest rates would make Brazilian assets more attractive to investors. This would increase the demand for the Brazilian real, and the Brazilian currency would appreciate.