CheggSolutions - Thegdp

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## Sub-subject: Economics

### Topic: Exchange Rate and Inflation

#### Step-by-Step Solution:

##### Step 1: Given Data and Introduction

- **Exchange Rate:** 1 USD = 12 MXN
- **U.S. Inflation Rate:** 4%
- **Mexican Inflation Rate:** 6%

*Explanation:* The problem introduces the current exchange rate and inflation rates of the U.S. and Mexico. The goal is to determine the current value of one peso in terms of U.S. dollars and predict future exchange rates given the relative inflation rates.

##### Step 2: Current Value of One Peso in Terms of U.S. Dollars

To calculate this:

$$\text{Current exchange rate: } 1 \text{ USD} = 12 \text{ MXN}$$

$$1 \text{ MXN} = \frac{1 \text{ USD}}{12 \text{ MXN}}$$

**1 MXN = 0.0833 USD**

*Explanation:* By inverting the exchange rate, the value of one peso in terms of U.S. dollars is found by dividing 1 by 12.

*Supporting Statement:* The current value of one peso is derived from the given exchange rate using basic division.

##### Step 3: Calculating Future Exchange Rate

Using the Relative Purchasing Power Parity (PPP) formula:

$$\frac{\text{Expected Exchange Rate (Future)}}{\text{Current Exchange Rate}} = \frac{(1 + \text{Inflation Rate}_{Foreign})}{(1 + \text{Inflation Rate}_{Home})}$$

Where:

- Expected Exchange Rate (Future) = $E_{Future}$
- Current Exchange Rate = $E_{Current} = 12$

Relative inflation rates:

- U.S inflation rate: $i_{USD} = 0.04$
- Mexican inflation rate: $i_{MXN} = 0.06$

$$E_{Future} = 12 \times \frac{(1 + 0.06)}{(1 + 0.04)}$$

$$= 12 \times \frac{1.06}{1.04}$$

$$= 12 \times 1.0192$$

**= 12.2304**

*Explanation:* The future exchange rate is calculated using the relative PPP formula which accounts for the inflation differentials between two countries.

*Supporting Statement:* The Relative PPP formula links inflation rates to the exchange rate, helping to predict currency value changes in terms of purchasing power.

##### Step 4: Currency Appreciation and Depreciation

To assess which currency appreciates or depreciates:

- The initial exchange rate is 12 MXN/USD.
- The future exchange rate is 12.2304 MXN/USD.

Since $12.2304 > 12$, it implies:

- The peso is depreciating.
- The dollar is appreciating.
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Explanation: The increase in the number of pesos needed to buy one dollar signifies that the peso becomes weaker relative to the dollar over time.

Supporting Statement: Changes in the exchange rate directly show currency appreciation or depreciation. A higher requirement of pesos per dollar indicates peso depreciation and dollar appreciation.

Final Step: Summary of Findings

- **Current value of one peso:** $0.0833 USD.
- **Expected exchange rate in one year:** 1 USD = 12.2304 MXN.
- **Currency movements:** The Mexican peso is expected to depreciate; the U.S. dollar is expected to appreciate over the next year.

Explanation: The solution summarizes the computed values and the anticipated movement of currencies based on the relative inflation rates.

Supporting Statement: The final summary consolidates the entire solution, offering a clear, concise conclusion for quick reference.

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