

International Finance

Purchasing Power Parity and Exchange Rates

The given problem involves understanding the relationship between inflation rates of two countries and their effect on exchange rates using the concept of Purchasing Power Parity (PPP).

Given Data:

- Current exchange rate is 12 Mexican Pesos (MXN) per 1 U.S. Dollar (USD).
- Expected average inflation in the U.S. is 4%.
- Expected average inflation in Mexico is 6%.

Step 1: Current Value of One Peso in Terms of U.S. Dollars

To find the value of one peso in terms of U.S. dollars:

$$\text{Current Value of 1 Peso} = 1 / 12 \text{ U.S. Dollars}$$

$$\text{Current Value of 1 Peso} = 0.0833 \text{ U.S. Dollars}$$

The current exchange rate is 12 MXN/USD. Therefore, the value of one peso in dollars is the reciprocal of the exchange rate.

Supporting Statement: The current value of one peso in terms of U.S. dollars is 0.0833 USD.

Step 2: Expected Exchange Rate 1 Year from Now

To determine the future exchange rate using relative inflation rates, apply the formula for PPP:

$$\text{Expected Exchange Rate (E)} = \text{Current Exchange Rate} \times (1 + \text{Inflation Rate in Mexico}) / (1 + \text{Inflation Rate in U.S.})$$

Substituting the given values:

$$E = 12 \times (1 + 0.06) / (1 + 0.04)$$

$$E = 12 \times (1.06 / 1.04)$$

$$E = 12 \times 1.0192$$

$$E = 12.2304 \text{ Pesos per U.S. Dollar}$$

The exchange rate is adjusted by multiplying the current exchange rate by the ratio of the relative rates of inflation.

Supporting Statement: The exchange rate one year from now is expected to be 12.2304 MXN/USD.

Step 3: Expected Appreciation or Depreciation of Currencies

To evaluate whether the currencies appreciate or depreciate, compare the expected exchange rate to the current rate.

Current exchange rate: 12 MXN/USD

Expected exchange rate: 12.2304 MXN/USD

If the expected exchange rate is greater than the current rate, the peso depreciates relative to the dollar. Conversely, the dollar appreciates relative to the peso.

Since $12.2304 > 12$:

- The Mexican Peso is expected to depreciate.
- The U.S. Dollar is expected to appreciate.

The depreciation of the Mexican peso and appreciation of the U.S. Dollar are inferred by an increase in the exchange rate, meaning more pesos are needed to buy one U.S. dollar in the future compared to now.

Supporting Statement: The Mexican Peso is expected to depreciate by approximately 1.92% while the U.S. Dollar is expected to appreciate by the same percentage over the next year.

Final Solution:

- **Current value of one Peso in terms of U.S. Dollars:** 0.0833 USD.
- **Expected exchange rate one year from now:** 12.2304 MXN/USD.
- **Currency Appreciation:** U.S. Dollar.
- **Currency Depreciation:** Mexican Peso.

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