Calculating the Taylor Price Index Worksheet

1. **Definition of Taylor Price Index:** Briefly explain what the Taylor Price Index is and its purpose in economic analysis.

2. **Components:**

   (a) Base year prices (P_0).

   (b) Current year prices (P_1).

   (c) Quantities of items (Q).

3. **Formula:** Write the formula for calculating the Taylor Price Index:

$$TPI = \frac{\sum(P_1 \cdot Q)}{\sum(P_0 \cdot Q)} \cdot 100 \qquad (1)$$

4. **Steps to Calculate:** Describe the step-by-step process to calculate the Taylor Price Index.

   (a) Select a base year.

   (b) Record prices (P_0, P_1) and quantities (Q).

   (c) Compute $\sum(P_1 \cdot Q)$ and $\sum(P_0 \cdot Q)$.

   (d) Use the formula to calculate TPI.

5. **Example Problem:** Given the following data:

   - Base year prices: Item A: \$2, Item B: \$3.
   - Current year prices: Item A: \$2.5, Item B: \$3.2.
   - Quantities: Item A: 100 units, Item B: 150 units.

   Calculate the Taylor Price Index.

6. **Interpretation:** How would you interpret a Taylor Price Index of 120?

7. **Comparison with Other Indices:** Briefly compare the Taylor Price Index with Laspeyres and Paasche indices.

Solutions

1. **Definition:** The Taylor Price Index is a measure of price changes over time, taking into account both price and quantity data to provide a weighted average index.

2. **Components:**

   (a) Base year prices (P_0): Initial prices for the comparison period.

   (b) Current year prices (P_1): Prices in the year being analyzed.

   (c) Quantities of items (Q): Quantities purchased or consumed.

3. **Formula:** $TPI = \frac{\sum(P_1 \cdot Q)}{\sum(P_0 \cdot Q)} \cdot 100$

4. **Steps:**

   (a) Select a base year.

   (b) Record all required data.

   (c) Perform calculations using the formula.

5. **Example Problem Solution:**

   - Base year total: $\sum(P_0 \cdot Q) = (2 \cdot 100) + (3 \cdot 150) = 200 + 450 = 650$
   - Current year total: $\sum(P_1 \cdot Q) = (2.5 \cdot 100) + (3.2 \cdot 150) = 250 + 480 = 730$
   - Taylor Price Index: $TPI = \frac{730}{650} \cdot 100 \approx 112.31$

6. **Interpretation:** A TPI of 112.31 indicates a 12.31

7. **Comparison:** - Laspeyres: Uses base year quantities. - Paasche: Uses current year quantities. - Taylor: Considers both base and current year data.