

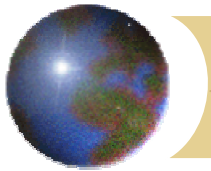
# *PRICES AND EXCHANGE RATES: PURCHASING POWER PARITY*

**Absolute & Relative PPP**

**Deviations from PPP**

**Overvalued & Undervalued Currencies**

**Can we arbitrage goods markets?**



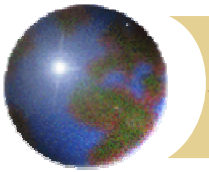
## *Absolute PPP*

✚  $P/P^F = E$

✚ Where  $E$  is units of domestic currency per unit of foreign currency

✚ So for yen/dollar:  $P_{¥}/P_{\$} = E_{¥/\$}$

✚  $P = EP^F$  is “law of one price”

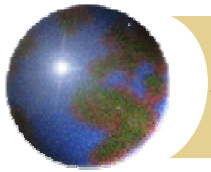


## *Relative PPP*

- ✦ In percentage changes

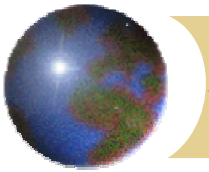
- ✦ Weaker than absolute PPP

$$\hat{E}_{Y/\$} = \hat{P}_Y - \hat{P}_\$$$



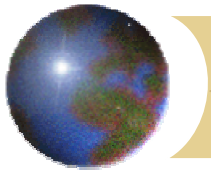
## *Deviations from PPP*

- ✦ **Different consumption tastes**
  - ▣ **Price indexes not comparable**
  
- ✦ **Shipping costs**
  
- ✦ **Tariffs, taxes, quotas, or other barriers to trade**
  
- ✦ **Differentiated products**
  
- ✦ **Relative price changes**



## *Temporary & Spurious deviations from PPP*

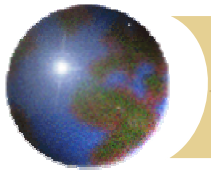
- ✪ **News impacts exchange rates faster than prices of goods & services so may have temporary deviations**
  - ✦ **Periods with important news will have major deviations from PPP**
  - ✦ **With no news would expect convergence toward PPP**
  
- ✪ ***Delivery lags* may give spurious appearance of deviations**
  - ✦ **Shouldn't compare exchange rates today with prices today if prices were actually set consistent with PPP 3 months ago**
  - ✦ **Ideally, compare prices at time of contracting with exchange rates expected to exist at delivery time**



## *PPP holds better for:*

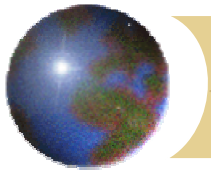
- ✦ **High-inflation countries**

- ✦ **Long time periods**



## *How well does PPP hold?*

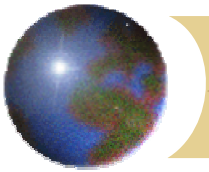
- ✦ **Compare inflation differentials and exchange rate changes:**
- ✦ [International Economic Trends - Publications](#)



## *PPP is no “theory” of exchange rates*

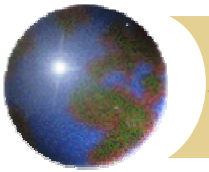
- ✦ Prices and exchange rates are *endogenous* variables
- ✦ *Endogenous*: variables whose values are dependent upon other factors
- ✦ *Exogenous*: variables whose values are free to change independently





## *Overvalued & Undervalued Currencies*

- ✦ In a *PPP* sense, if a currency depreciates (appreciates) more than PPP calls for, we say the currency is undervalued (overvalued)
- ✦ But sense traders voluntary exchange currencies at current prices, is there really any meaning to *overvalued* or *undervalued*
- ✦ Equilibrium may not call for the law of one price if the capital and current accounts are non-zero
  - ✦ The real exchange rate may adjust to encourage current account deficits or surpluses



## *Real Exchange Rate*

✦  $E = P/P^F$

✦ A measure of competitiveness of prices

✦ “Overvalued” currency has real exchange rate “too high”

✦ “Undervalued” currency has real exchange rate “too low”

✦ If PPP always held, the real exchange rate = ??

✦ Real exchange rate can be part of equilibrium price change in response to economic shock