Exchange Rate Arbitrage $\implies$ Simultaneously
- buying an asset in one market and
- selling it in another for a profit.

Arbitrage $\implies$ No Risk - both transactions take place at the same time.

**Two Point**
- requires 2 currencies & 2 financial centers.
- If rates between currencies not reciprocals, 
  two point arbitrage is possible.

Checking for two-point arbitrage
- Check for Inverses

Example:

\[
\begin{array}{ccc}
\text{New York} & \Rightarrow & \text{(Inverse)} \\
\$/\£ & = & 2.0 \\
\$/\¥ & = & 0.04 \\
\end{array}
\begin{array}{ccc}
\text{London} & \Rightarrow & \text{Tokyo} \\
\£/$ & = & 0.5 \\
\£/$ & = & 0.025 \\
\¥$/ & = & 250 \\
\¥$/ & = & 400 \\
\end{array}
\]

The inverse of the $$/¥$ rate in NY does not equal the rate in Tokyo.
- The dollar is expensive in NY and cheap in Tokyo.
- Buy 250¥ with $1 in NY, then buy$1.25 in Tokyo with 250¥.
- The rates will converge as arbitrage takes place.

**Three Point**
Three point arbitrage:
- requires 3 currencies and 3 financial centers.
- If "cross rates" on one exchange do not equal rates 
  three point arbitrage is possible.

Checking for three point arbitrage
Example:

\[
\begin{array}{ccc}
\text{New York} & \Rightarrow & \text{London} & \Rightarrow & \text{Tokyo} \\
\$/\£ & = & 2.0 & \Rightarrow & \£/$ = 0.5 \\
\$/\¥ & = & 0.04 & \Rightarrow & \¥$/ = 250 \\
\end{array}
\]

Find the cross rate in New York ($$¥/$ = 500):
- The cross rate in NY does not equal ¥/$ in Tokyo.
- The £ in NY is expensive and the NY ¥ is cheap.

$\Rightarrow$ Buy 500¥ with 2$’s in NY.
- Use 500¥ to buy 1¼ £’s in Tokyo.
- Then buy $2.50 with 1¼ £’s in NY or London

**Rule:**
- Calculate cross rate on home exchange.
- If cross rate different from corresponding rate abroad, buy cheaper currency at home.
- Sell that currency where it was expensive for the third currency.
- Use this currency to buy your own currency back at home.

*Arbitrage insures that the same rates are charged in all major financial centers.*
- The rates will converge as arbitrage takes place.