

103: LIST OF VARIABLES

(foreign variables carry an asterisk,
superscript e denotes the expected value of a variable or change)

March 5, 2004

1. Stock variables

- K Capital stock
- W Net wealth of a country (net claims on the future output of the rest of the world)
- M Domestic nominal money supply
- M^* Foreign nominal money supply
- B Domestic (government) bonds

2. Flow variables

- Y^{GNP} Income (Output)—Gross National Product, the income generated by domestic factors of production in one year. Y^{GNP} roughly equals national income
- C Consumption of private households
- G, T G : Government spending, T : Taxes
- I Investment, $I = \Delta K$ (increase of capital stock)
- EX Exports
- IM Imports
- CA Current account balance, assumed to be roughly $CA \approx EX - IM$ (net exports).

The financial view $CA = \Delta W$ is correct.

A current account surplus is equivalent to net foreign lending. Domestic consumers give up consumption of their goods today in exchange for future consumption of foreign goods. A current account surplus is therefore an accumulation of claims on the future output of the rest of the world. A current account deficit is equivalent to net borrowing from abroad. If *private* capital flows do not match the current account surplus (or deficit), the central increases or reduces its reserves accordingly. Reserves are part of the country's net wealth.

S Savings, $S = I + CA = \Delta K + \Delta W$. In an open economy, national savings are applied to domestic investment and foreign lending.

Y^{GDP} Output—Gross Domestic Product, the production of goods and services within domestic borders in one year. Domestic wealth invested abroad yields interest income for domestic residents: $R^* \cdot W$. So, $Y^{GNP} = R^* \cdot W + Y^{GDP}$ and the correct current account balance is $CA = R^* \cdot W + EX - IM$.

3. Prices

E *Nominal* (spot) exchange rate (denominated in [USD/units of foreign currency]). A *nominal* appreciation is a decrease of E .

E^e Expected future nominal exchange rate.

F *Forward nominal* exchange rate (denominated in [USD/units of foreign currency]_{tomorrow})

P Domestic price level (price of domestic consumption basket). Individual prices: p_i . So, $P = a_1 p_1 + \dots + a_i p_i + \dots + a_N p_N$

P^* Foreign price level (price of foreign basket)

q *Real* exchange rate, defined as $q \equiv \frac{EP^*}{P}$ (denominated in quantities: [1]). It denotes the relative price of a unit of the foreign consumption basket (numerator) in terms of the domestic consumption basket (denominator). A *real* appreciation is equivalent to a lower q .

R *Nominal* interest rate

π^e (Expected) inflation rate, $\pi^e \equiv \frac{\Delta^e P}{P}$

r^e (Expected) *real* interest rate; $R = r^e + \pi^e$.