

103: LIST OF VARIABLES

(foreign variables carry an asterisk, March 28, 2011
superscript e denotes the expected value of a variable or change)

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 anywhere in the world during a 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 (value; volume X : $EX = P X$)
- IM Imports (value; volume M : $IM = P^* M$)
- CA Current account balance, mostly assumed to be $CA \approx EX - IM$ (net exports).

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

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 bank 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 during a year. Domestic wealth invested abroad yields interest income for domestic residents: $R^* \cdot W$. So, national income is $Y^{GNP} = R^* \cdot W + Y^{GDP}$ and the precise 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 reduction of q .
- R *Nominal* interest rate; long-term: R^{LT}
- π^e (Expected) inflation rate, $\pi^e \equiv \frac{\Delta^e P}{P}$
- r^e (Expected) *real* interest rate; $R^{LT} = r^e + \pi^e$.