

103: LIST OF VARIABLES

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

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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 Money supply of domestic central bank
- M^* Money supply of foreign central bank
- 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 Government consumption
- 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 used for both 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 one unit of the domestic consumption basket)
- 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, $\pi^e \equiv \frac{(\Delta P)^e}{P}$
- r^e (Expected) *real* interest rate; $R = r^e + \pi^e$.