

Macroeconomics

Based on the textbook by KARLIN and SOSKICE:
Macroeconomics: Institutions, Instability, and the Financial System

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The current account

It is well known that the **balance of payments** is composed of two main partial accounts, current account and capital account:

- ▶ The **trade balance** records exports and imports of goods and services and direct receipts from them: formally $BT = X - M$, where BT is **net exports**. Occasionally, there is interest in the trade balance for goods only, which particularly excludes tourism.
- ▶ The **balance of primary incomes** refers to some salaries and wages crossing borders, but primarily to border-crossing interest and profit receipts.
- ▶ There are also border-crossing *transfers*, unrequited transactions or secondary incomes.
- ▶ Trade balance and balance of primary and secondary incomes together form the **current account**.

The capital account

The **capital account** records border-crossing transactions that are involved in the purchase of assets, which can be firms or securities.

Foreign assets are paid in foreign currency that has arrived in the home country due to exports. The balances of the current account and of the capital account must be almost identical, with reversed signs. A current account deficit comes with a capital account surplus, positive net imports mean 'capital exports': capital is sold off to foreigners.

A discrepancy between the current and capital account can be explained by direct flows of currency and other reserves (t.ex. gold). Instead of foreign assets, a country can also stock up reserves.

The effects of a depreciation

A real depreciation $Q \uparrow$ has three effects on export and import demand:

1. Exports become more competitive and increase;
2. Imports become less attractive and decrease;
3. Imports become more expensive.

Two effects tend to improve the trade balance, the third effect tends to deteriorate the trade balance. The first two effects are called the *volume effect* and tend to dominate the third effect, the *terms of trade effect*. This dominance is called the **Marshall-Lerner condition**.

Terms of trade is another word for relative import and export prices, customarily defined as $1/Q$.

The ERU curve: import prices affect domestic supply

If wage negotiations take import prices into account, depreciations ($q \uparrow$) push down the price-setting curve, whereas appreciations ($q \downarrow$) push it up. The real exchange rate works like a mark-up. The ERU curve (equilibrium rate of unemployment) becomes downward sloping. Demand and supply shocks have permanent effects, they change the medium-run equilibrium.

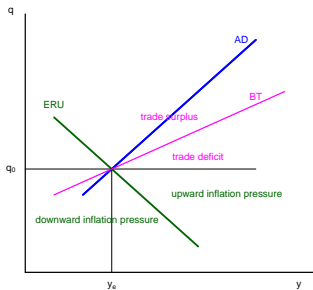
The idea that simple demand shocks change the medium-run equilibrium and thus the natural output and employment is not universally accepted. It is not very different from an upward-sloping AS curve in the traditional Keynes-Hicks model.

The trade balance: the BT curve

For given foreign demand y^* , world trade share, and other trade characteristics, there exist combinations of y and q , at which trade is balanced, i.e. $X = M$. These points can be connected to form a rising curve in the (y, q) diagram, the **BT curve**.

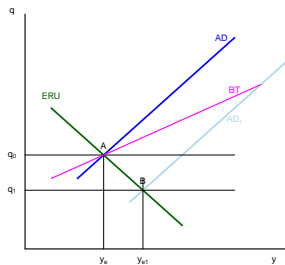
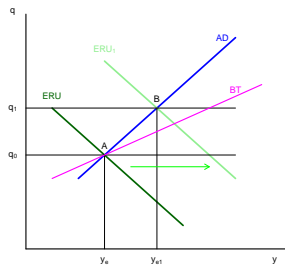
The BT curve must be flatter than the AD curve that describes actual demand reactions. Start from a combination with balanced trade. An appreciation will shift preferences of domestic participants toward imports, and there will be a trade deficit. A depreciation will shift preferences away from imports, and there will be a trade surplus.

The AD-BT-ERU system



The intersection point reflects a medium-run equilibrium with balanced trade. The ERU curve separates states with inflationary from those with deflationary pressure. The BT curve separates states with a trade surplus from those with a trade deficit.

Shocks affect the AD-BT-ERU system



The left graph depicts a positive supply shock that shifts the ERU curve, such as higher labor productivity or a lower markup. The right graph depicts a positive demand shock. If the trade balance was 0 originally, there will be a surplus after the supply shock and a deficit after the demand shock.

Four characteristics of demand in the open economy

1. The open economy IS curve is steeper than in a closed economy. Reason is that the (fiscal) multiplier is smaller. Changing the interest rate has less effect on output.
2. The open economy IS curve shifts in response to depreciation or appreciation. Because of Marshall-Lerner, a depreciation shifts the IS curve right (out).
3. A rise in world demand y^* has similar effects as a depreciation, but it is even better as it does not increase import prices.
4. A depreciation always improves the trade balance, an appreciation deteriorates it.

The multiplier in an open economy

The open-economy aggregate demand equation

$$y^D = C + I(r) + G + X - M = (C + I(r) + G) + BT$$

comes with behavioral equations for the demand aggregates (X and G are exogenous)

$$C = c_0 + c_1(1 - \tau)y, \quad I = I(r), \quad M = my,$$

with $0 < m < 1$, which results in the equilibrium condition

$$y = \frac{1}{1 - c_1(1 - \tau) + m}(c_0 + I(r) + G + X).$$

The multiplier is smaller than the closed-economy multiplier $1/\{1 - c_1(1 - \tau)\}$, so the IS curve is steeper.

Reaction of imports and exports

A possible reaction function for exports is

$$X = P_X \sigma(Q) y^*,$$

with σ denoting the market share in the global market and P_X the export price. Assume that $P = P_X$ (*home-cost pricing*). The market share will rise with a depreciation ($Q \uparrow$).

For imports, a reaction function is

$$M = Qm(Q)y,$$

with the import propensity $m(Q)$ falling in the wake of a depreciation, as imports become more expensive. Imports must be paid according to Q , the price of imports in domestic goods.

Is home-cost pricing realistic?

Probably not. Firms are facing competition on the world market. Often firms have to take the global market prices as given, they are *price takers*. An extreme form of price-taking is prescribed by the **law of one price** (LOP): a price for any specific good is identical globally, thus all real exchange rates are 1:

$$P = P^*e \Rightarrow Q = 1$$

Because of transport costs and trade barriers, LOP cannot be confirmed empirically. In reality, price setting is in between the extremes of home-cost pricing and LOP.

Reaction of the trade balance

In summary, the behavioral equation for BT is

$$BT = X - M = \sigma(Q)y^* - Qm(Q)y,$$

the net effect according to Marshall-Lerner increasing in Q .

($\sigma(Q) \uparrow$, $m(Q) \downarrow$, but $Q \uparrow$)

Technically, it can be shown that the Marshall-Lerner condition holds as long as the sum of the absolute values of the export elasticity and the import elasticity exceeds unity:

$$\frac{\partial \sigma(Q)/\partial Q}{\sigma/Q} - \frac{\partial m(Q)/\partial Q}{m/Q} > 1$$

For most countries, this sum is much larger than 1.

Supply side of the open economy

The supply side is governed by the wage-setting and price-setting curves. Wage setting remains essentially as in the closed economy, but relevant consumer prices P_c are affected by import prices:

$$P_c = (1 - \phi)P + \phi P^*$$

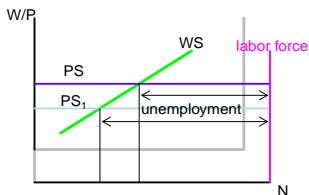
says that ϕ is the proportional importance of foreign prices via imports. In this case, one can derive that the price-setting curve for the real wage w becomes

$$w^{PS} = \frac{\Pi_N(1 - \mu)}{1 + \phi(Q - 1)},$$

and thus a depreciation reduces the real wage.

Depreciation may cause unemployment

Remember the WS-PS diagram. $Q \uparrow$ shifts the PS curve down and reduces equilibrium output (P stands for P_C in the diagram).



This motivates the falling ERU curve: a depreciation comes with less output y and less employment N .