Now we distinguish between the *domestic demand for goods* and the *demand for domestic goods*.

Some domestic demand falls on foreign goods, and some of the demand for domestic goods comes from foreigners.
The Demand for Domestic Goods

• In an open economy, the demand for domestic goods is given by:

\[ Z \equiv C + I + G - IM / \varepsilon + X \]

• The first three terms—consumption, \( C \), investment, \( I \), and government spending, \( G \)—constitute the domestic demand for goods.

• Until now, we have only looked at \( C + I + G \). But now we have to make two adjustments:
  – we subtract imports (converted into domestic currency using the exchange rate).
  – we add exports.

• Domestic Demand:

\[ C + I + G = C(Y - T) + I(Y, r) + G \]

\( ( + ) \quad ( +, -) \)
The Determinants of Imports

\[ IM = IM(Y, \varepsilon) \]

\[ (+,+) \]

- An increase in domestic income, \( Y \), leads to an increase in imports.

- An increase in the real exchange rate, \( \varepsilon \), leads to an increase in imports, \( IM \).

The Determinants of Exports

\[ X = X(Y^*, \varepsilon) \]

\[ (+,-) \]

- An increase in foreign income, \( Y^* \), leads to an increase in exports.

- An increase in the real exchange rate, \( \varepsilon \), leads to a decrease in exports.
Putting the Components Together

The domestic demand for goods is an increasing function of income (output). (Panel a)

The demand for domestic goods is obtained by subtracting the value of imports from domestic demand (shift from DD to AA) (Panel b), and then adding exports (Panel c, shift from AA to ZZ).
The demand for domestic goods is obtained by subtracting the value of imports from domestic demand, and then adding exports. (Panel c)

The trade balance is a decreasing function of output. (Panel d)
19-2 Equilibrium Output and the Trade Balance

• The goods market is in equilibrium when domestic output equals the demand – both domestic and foreign – for domestic goods:

\[ Y = Z \]

\[ Y = C(Y - T) + I(Y, r) + G - IM(Y, \varepsilon)/\varepsilon + X(Y^*, \varepsilon) \]
The goods market is in equilibrium when domestic output is equal to the demand for domestic goods. At the equilibrium level of output, the trade balance may show a deficit or a surplus. Note that goods market equilibrium (demand=output) condition and trade balance condition are different:

Condition for trade balance is: \( X = IM/ \epsilon \)
Increases in Domestic Demand

The Effects of an Increase in Government Spending

An increase in government spending (ZZ curve shifts up) leads to an increase in output and to a trade deficit.

This is one key source of the “Twin Deficits”
• There are two important differences between open and closed economies:

– In an open economy, there is an effect on the trade balance: The increase in output from $Y$ to $Y'$ leads to a trade deficit. Imports go up, while exports do not change.
Increases in Foreign Demand

The Effects of an Increase in Foreign Demand

An increase in foreign demand (ZZ curve shifts up) leads to an increase in output and to a trade surplus (due to NX line shifting up).
Fiscal Policy – summary

• We have derived two basic results so far:

  – An increase in domestic demand leads to an increase in domestic output, but leads also to a deterioration of the trade balance.

  – An increase in foreign demand for US goods leads to an increase in domestic output and an improvement in the trade balance.
The real depreciation affects the trade balance through three separate channels:

- Exports, $X$, increase.
- Imports, $IM$, decrease
- The relative price of foreign goods in terms of domestic goods, $1/e$, increases. (that is why imports decrease)

The Marshall-Lerner condition is the condition under which a real depreciation (a decrease in $\varepsilon$) leads to an increase in net exports.

Summarizing: The depreciation leads to a shift in demand, both foreign and domestic, toward domestic goods. This shift in demand leads in turn to both an increase in domestic output and an improvement in the trade balance.
Combining Exchange Rate and Fiscal Policies

Figure 19 – 5
Reducing the Trade Deficit without Changing output

To reduce the trade deficit without changing output, the government must both achieve a depreciation (which will increase exports: NX line shifts up) and decrease government spending (which reduces demand: ZZ line shifts down).
If the government wants to eliminate the trade deficit without changing output, it must do two things:

- It must depreciate the national currency sufficient to eliminate the trade deficit at the initial level of output.
- It must reduce government spending.
19-4 Saving, Investment, and the Trade Balance

• From the following equilibrium the condition:

\[ Y = C + I + G - IM / \epsilon + X \]

We subtract \( C + T \) from both sides and use the fact that private saving is given by \( S = Y - C - T \) to obtain

\[ S = I + G - T - IM / \epsilon + X \]

Use the definition of net exports, \( NX \equiv X - IM / \epsilon \), and reorganize, to get:

\[ NX = S + (T - G) - I \]
From the equation above, we conclude:

- An increase in investment must be reflected in either an increase in private saving or public saving, or in a deterioration of the trade balance.

- An increase in the budget deficit must be reflected in an increase in either private saving, or a decrease in investment, or a deterioration of the trade balance.

- A country with a high saving rate must have either a high investment rate or a large trade surplus (e.g., China).
Figure 1  U.S. Net Saving and Net Investment since 1996 (percent of GDP)
Exports and Imports

Since 1960, exports and imports have more than doubled in relation to GDP.

The period of rising trade deficit corresponds to the period of rising gap between Saving and investment on the previous graph.
The U.S. trade and current account deficits could improve in the future if the world economy improves and domestic economic conditions strengthen. It could deteriorate in the alternative scenario.

This improvement in the deficits will most likely necessitate a real depreciation of the dollar.

But this depreciation of the dollar will not necessarily take place so long as foreign investors remain content with lending to the United States (at the rate of about $800 billion or so per year) as they have been doing.
Suggested practice problems

• Chap 19, problem 1: instead True/False, explain your answer
• Chap 19, problem 5