

# FIN204-Week13-Ch13-12310903刘 华杰

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2. A small open economy is described by the following equations:

$$\begin{aligned}C &= 50 + .75(Y - T) \\I &= 200 - 20r \\NX &= 200 - 50\epsilon \\M/P &= Y - 40r \\G &= 200 \\T &= 200 \\M &= 3000 \\P &= 3 \\r^* &= 5\end{aligned}$$

a. Derive and graph the  $IS^*$  and  $LM^*$  curves.

在Mundell-Fleming 模型中，资本完全自由流动的小型开放经济体 IS曲线方程为：

$$\begin{aligned}Y &= C(Y - T) + I(r) + G + NX(e) \\Y &= 50 + .75(Y - 200) + 200 - 20r + 200 - 50\epsilon \\Y &= 0.75Y + 500 - 20r - 50\epsilon \\Y &= 2000 - 80r - 200\epsilon\end{aligned}$$

对于小型开放经济体来说，由于其利率和世界利率一致  $r = r^* = 5$

$$Y = 1600 - 200\epsilon$$

来理解一下这个结果：在Mundell-Fleming模型中，资本完全流动的小型开放经济体总产出和汇率（本币兑外币）成负相关关系，即对外货币贬值有利于总产出增加。

货币市场（LM曲线）

$$\begin{aligned}\frac{M}{P} &= L(r^*, Y) \\ Y - 40r &= 1000 \\ Y &= 1000 + 40r = 1200\end{aligned}$$

货币市场均衡由世界利率唯一给定。

b. Calculate the equilibrium exchange rate, level of income, and net exports.

由(a),  $Y=1200$ ,

由IS曲线方程 均衡汇率  $\epsilon = \frac{1600-Y}{200} = 2$

净出口  $NX = 200 - 50r = 100$

c. Assume a floating exchange rate. Calculate what happens to the exchange rate, the level of income, net exports, and the money supply if the government increases its spending by 50. Use a graph to explain what you find.

(注：这里理解为政府支出增加50个单位，而非50%。)

浮动汇率下

自变量：  $G' = G + 50 = 250$

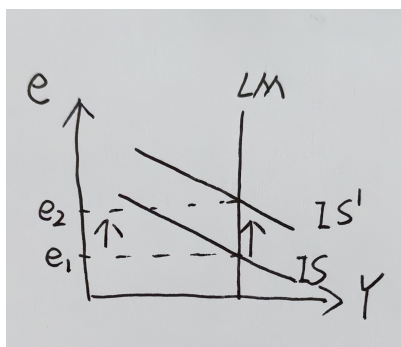
新的IS市场均衡：

$$\begin{aligned}Y &= C(Y - T) + I(r) + G' + NX(e) \\ Y &= 50 + .75(Y - 200) + 250 - 20r + 200 - 50\epsilon \\ Y &= 2200 - 80r' - 200\epsilon' \\ Y &= 1800 - 200\epsilon'\end{aligned}$$

## 新的LM市场均衡

$$Y = 1000 + 40r = 1200$$

综上，政府支出上升，IS曲线上移，LM曲线不变



d. Now assume a fixed exchange rate. Calculate what happens to the exchange rate, the level of income, net exports, and the money supply if the government increase its spending by 50. Use a graph to explain what you find.

固定汇率下

自变量:  $G' = G + 50 = 250$

新的IS市场均衡:

$$Y = C(Y - T) + I(r) + G' + NX(e)$$

$$Y = 50 + .75(Y - 200) + 250 - 20r + 200 - 50\epsilon$$

$$Y = 2200 - 80r' - 200\epsilon$$

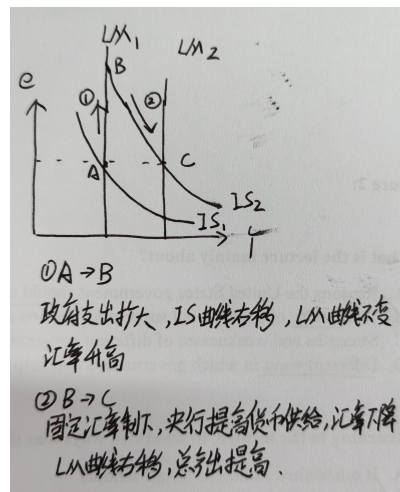
$$Y = 1800 - 200\epsilon = 1400$$

同等汇率下Y增加，IS曲线右移。

## 新的LM市场均衡

$$M' = 3(Y - 40r) = 3600$$

因此央行要扩大货币供应量，使得汇率保持不变，LM曲线要右移。



6. Suppose that higher income implies higher imports and thus lower net exports. That is, the net-exports function is

$$NX = NX(e, Y).$$

Examine the effects in a small open economy of a fiscal expansion on income and the trade balance under the following exchange-rate regimes.

a. A floating exchange rate

财政扩张导致总需求增加，进口增加，所以净出口减少；同时进口增加导致需要更多外汇，本币贬值，即本币对外币的汇率将会上升。

由于实行浮动汇率制，央行不做处理，汇率上升。

汇率上升后本币在国际的购买力下降，抑制了进口，增加了出口，从而使总产出回到长期均衡状态。

综上，最终导致了汇率上升，总产出不变，净出口增加，和表13-1一致。

b. A fixed exchange rate

财政扩张导致总需求增加，进口增加，所以净出口减少；同时进口增加导致需要更多外汇，本币贬值，即本币对外币的汇率将要上

升。

由于实行固定汇率制，央行出售外汇来使本币升值，维持汇率不变。这里的出售外汇是在本国的外汇市场，因此相当于提高了本国的本币供给，并将总产出维持在了更高的水平。

在汇率不变, 更高产出水平下, 净出口减少。

这和表格中的结论不一致。

How does your answer compare to the results in Table 13-1?

TABLE 13-1 The Mundell-Fleming Model Summary of Policy Effects

	EXCHANGE-RATE REGIME					
	FLOATING			FIXED		
	IMPACT ON:					
Policy	Y	e	NX	Y	e	NX
Fiscal expansion	0	↑	↓	↑	0	0
Monetary expansion	↑	↓	↑	0	0	0
Import restriction	0	↑	0	↑	0	↑

*Note:* This table shows the direction of impact of various economic policies on income Y, the exchange rate e, and the trade balance NX. A “↑” indicates that the variable increases; a “↓” indicates that it decreases; a “0” indicates no effect. Remember that the exchange rate is defined as the amount of foreign currency per unit of domestic currency (for example, 100 yen per dollar).