1. Permanent money expansion: It creates output expansion in the short run in a larger magnitude than a temporary money expansion, thanks to its impact on exchange rate expectations.

Temporary Expansion: AA shifts to AA’ because a fall in interest rate depreciates the local currency and raises export demand. Output rises from Y1 to Y2.

Permanent Expansion: AA shifts further to AA” because inflation is expected to rise. This raises expectations of future exchange rate depreciation and makes the exchange rate depreciate further. Export demand rises further and so does output. Output rises from Y1 to Y3.

2. If the FED fixed the dollar-euro exchange rate, a money expansion is no more feasible. Why? Fixing exchange rate requires that Rs = Re, according to the interest rate parity. We can recommend the government to implement fiscal expansion by cutting taxes or raising govt. spending.
Fiscal expansion puts appreciation pressure on the US$. So, the FED has to intervene by selling US $ for euro assets. That raises foreign exchange reserves and thus the money supply. As a result of the intervention, money supply expands and shifts AA to the right until the market exchange rate remains at E1. We can see in Figure 2 that fiscal expansion is more effective in increasing output under fixed exchange rate system than under flexible exchange rate system.

3. Revaluation expectations mean that the market participants expect capital gain from holding the Chinese Yuan. This creates capital inflows into China’s central bank’s balance sheet, as the central bank has to intervene by buying incoming flows of U.S.$.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt. Bonds (B)</td>
<td>Money Supply</td>
</tr>
<tr>
<td>Foreign Reserves (F)</td>
<td></td>
</tr>
<tr>
<td>US $ inflows</td>
<td>Increase in Money Supply</td>
</tr>
</tbody>
</table>

Balance Sheet: \( MS = B + F \)
\( \Delta F > 0 \Rightarrow \Delta MS > 0 \)
The increase in foreign reserves will create money supply expansion and inflation, unless the central bank will sterilize the capital inflows by selling the govt. bonds. So the effect on inflation depends on whether the central bank sterilizes the inflows or not.
However sterilization cannot go on forever because the lower bound of government bonds holding is zero. If the revaluations expectations last very long, money supply and inflation will eventually rise.

4. Currency crises are traditionally the result of 2 contradictory policies:
   1. Inflationary fiscal policy (large government spending)
   2. Fixed exchange rate policy.
When a government engages in excessive spending by selling government bond to the central bank, the public expects the inflation to rise in the future. That creates depreciation expectations and triggers a massive sale of local currency assets. The central bank has to sell its foreign reserves to speculators, in order to defend its exchange rate. This is why the path of foreign reserves in Figure 4.1 is downward sloping.

![Figure 4.1: Foreign Reserves](image)

However, this cannot continue forever as long as speculators correctly foresee that large government spending will continue. Speculative attacks are rational responses to government policies, since speculators will incur capital losses otherwise. When the foreign reserves are depleted, the central bank has to let its national currency float freely in the foreign exchange markets. From then on, the path of exchange rate reflects a rise in domestic inflation and a fall on domestic interest rate.

We call the exchange rates that prevail after the crisis “shadow” market exchange rates. They are market exchange rates that speculators expect to prevail when the foreign reserves become zero.
Before T: money supply is constant because the central bank fixes exchange rate by selling foreign assets while buying govt. bonds: $M = F \downarrow + B \uparrow$

At T: The central bank sells all foreign reserves to speculators. F suddenly drops to zero. So the money supply drops too.

After T: Money supply is 100% backed by govt. bonds rises forever.
The rate of inflation is the same as the rate of money supply expansion. Before the crisis, money supply is fixed, so inflation was zero. After the crisis, money expands at the same rate of government spending. As a result, inflation tracks the path of exchange rate depreciation.

5. Interest Parity: \[ R = R^* + \frac{E_{t+1}^e - E_t}{E_t} \]

When people expect a currency to get devalued, \( E_{t+1}^e > E_t \). That means the domestic interest rate has to rise to equalize the local-currency return of the domestic and foreign assets. Otherwise, people will begin to sell the domestic currency for the foreign assets for higher return.

In practice, expectations of depreciation before the currency crisis are so high that it is too costly for a central bank to raise interest to defend its national currency. In this case, people just sell local currency for the foreign reserves. We call the speculative outflows of the foreign reserves during a currency crisis “capital flights”. 