Consider the following Balance Sheets for the Banking System and the Fed. Assume that:

1. There are no unwanted excess reserves (ER=0).
2. There are no coins.
3. All reserves are held as deposits at the Fed (No Vault Cash) or FRN = CUR.

### Banking System

<table>
<thead>
<tr>
<th>A</th>
<th>L+NW</th>
<th>A</th>
<th>L+NW</th>
</tr>
</thead>
<tbody>
<tr>
<td>RES</td>
<td>D 1000</td>
<td>SEC 700</td>
<td>FRN 600</td>
</tr>
<tr>
<td>RR</td>
<td>Loans from DL 100</td>
<td></td>
<td>Bank Deposits 200</td>
</tr>
<tr>
<td>ER*</td>
<td>FED 100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EA</td>
<td>900</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Determine:

1. The Money Supply
2. The Monetary Base
3. The Non-Borrowed Monetary Base
4. $r_b$
5. currency/deposit ratio (c)
6. excess reserve ratio (e)
7. money multiplier

\[(m=(1+c)/(r_b + e + c))\]

How will the balance sheets change (when the banking system return to a no unwanted excess reserve position) if the Fed buys $100 of securities from the public?

### Formulas:

\[M=D + CUR\]
\[MB = R + CUR\]
\[m=(1+c)/(r_b + e + c)\]
\[M=m(MB_n + DL)\]
\[\Delta M=m(\Delta MB_n + \Delta DL)\]
\[m=M/MB\]
\[D=(1/(r_b + e + c)) MB\]
\[\Delta CD=(1/(r_b + e + c))\Delta MB\]
\[RR = r_b CD\]
\[\Delta RR = r_{CD} \Delta CD\]
\[r_b = RR/CD\]
\[CUR = c D\]
\[\Delta CUR = c \Delta D\]
\[c=CUR/D\]
\[ER^*=eD\]
\[\Delta ER^*=e \Delta CD\]
\[e=ER^*/CD\]