

## Two tier banking system

Central Bank (CB)

CBLA +100	RA+85
CBLA +15	C +15

Commercial Bank B (BB)

RB+85	+85 D
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Commercial Bank A (BA)

Claim +20	CBLA +15
RA+85	CBLA+100
RA+85	Individual wealth +5
	+85 D

Non bank agent B

C +15	
+85 D	

Non bank agent A

+85 D	debt +20
	+100

## Exercise 1

Record the following activities (variations) in the balance sheets!

1/ Agent (A) takes a 100\$ loan from commercial bank (A). We know that the obligatory reserve rate is 2% and bank (A) has no free reserves.

2/ Agent (A) transfers 100\$ to agent (B), who has its accounts at commercial bank (B).

3/ Next day agent (B) withdraws 15\$ from her account (thus to that time commercial bank A has already settled its debt).

4/ Agent (B) purchases from agent (A) for 85\$ (pays with transfer). Agent (A) uses all her money to meet her debts included due interest (interest rate is 5%).

5/ Is it possible to reimburse the remaining 20\$ loan?

## Exercise 2: Modern credit money system

Consider a two tier banking system with only digital currency (no cash). Government deficit is 100\$ financed by treasury bonds; 80% issued to households and (20%) to commercial banks. The reserve ratio is 8% and can never drop below this level without causing the banking system's disfunctioning. Register the events (**variations: + increase; - decrease**) (item name and amount) in accounts!

1. Emission of treasury bonds (*help*: similar to bank transfers)
2. Treasury spends
3. Commercial banks reimburse their debts

Consider a two tier banking system with only digital currency (no cash). Government deficit is financed by treasury bonds; 60% issued to households and (40%) to commercial banks. The reserve ratio is 5% and can never drop below this level without causing the banking system's disfunctioning. Banks never keep free reserves. We know that after having issued the government bonds and having spent 80% of it, the variation of demand deposits is 200\$. Register the events (**variations: + increase; - decrease**) (item name and amount) in accounts!

Consider a two tier banking system. The cash to money ratio is 10%, the reserve ratio is 6% and can never drop below this level without causing the banking system's disfunctioning. There are two commercial banks with a market share of 60%-40%. Both banks have 80\$ free reserves. The little bank lends 800\$ to its clients; the clients spend the money. Register the events (**variations: + increase; - decrease**) (item name and amount) in accounts if at the end there are no free reserves!

Consider a two tier banking system. The cash to money ratio is 10%, the reserve ratio is 5% and can never drop below this level without causing the banking system's disfunctioning. There are two commercial banks with a market share of 60%-40%. Both banks have 80\$ free reserves. The little bank lends to its clients; the clients spend the money and the end up with +900\$ demand deposit. Register the events (**variations: + increase; - decrease**) (item name and amount) in accounts if at the end there are no free reserves!