20.1 Money Supply

1. Money supply = Cash in public circulation + Bank deposits

2. Would the following items be included in the money supply M1, M2 or/and M3? Tick (✓) the appropriate boxes.

	M1	M2	M3
(a) Legal tender held by the public	✓	✓	✓
(b) Customers' demand deposits with licensed banks	✓	✓	✓
(c) Customers' savings and time deposits with licensed banks		✓	✓
(d) Negotiable certificates of deposit issued by licensed banks held outside the banking sector		✓	✓
(e) Customers' deposits with restricted licence banks and deposit-taking companies			✓
(f) Negotiable certificates of deposit issued by restricted licence banks and deposit-taking companies held outside the banking sector			✓

3. Mrs. Chan withdraws HK$200,000 in cash from her savings account in a commercial bank. Then she puts HK$100,000 into her time deposit account with a deposit-taking company in Hong Kong and holds the remainder in cash.
The immediate effect of the above actions on the money supply of Hong Kong:
- M1 will *(increase / decrease / remain unchanged)*
- M2 will *(increase / decrease / remain unchanged)*
- M3 will *(increase / decrease / remain unchanged)*

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20.2 Deposit Creation and Deposit Contraction

4. The table below shows the balance sheet of a banking system which has excess reserves of $50.

Assets ($)		Liabilities ($)	
Reserves	250	Deposits	1,000
Loans	750		

(a) Calculate the required reserve ratio.

[($250 – $50) / $1,000] × 100% = 20%

(b) Calculate the maximum banking multiplier and actual banking multiplier.

Maximum banking multiplier = 1/20% = 5

Actual banking multiplier = $1,000/$250 = 4

(c) Calculate the maximum possible amount of loans if the banks are fully loaned up.

$750 + $50 × 1/20% = $1,000

5. Refer to the following balance sheet of a banking system. The banks do not hold any excess reserves and the public hold $1,000 in cash.

Assets ($)		Liabilities ($)	
Reserves	125	Deposits	500
Loans	375		

Suppose someone receives a remittance of $500 from overseas and deposits it into a bank.

(a) Complete the balance sheet of the banking system after the process of deposit creation is completed.

Assets ($)		Liabilities ($)	
Reserves	625	Deposits	2,500
Loans	1,875		

(b) Calculate the new money supply and new monetary base of the economy.

New money supply = $1,000 + $2,500 = $3,500

New monetary base = $1,000 + $625 = $1,625

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6. The table below shows the balance sheet of a banking system. Suppose the banks do not hold excess reserves and the public hold $50 in cash.

Assets ($)		Liabilities ($)	
Reserves	800	Deposits	3,200
Loans	2,400		

(a) Calculate the required reserve ratio.

($800 / $3,200) × 100% = 25%

(b) Someone withdraws $100 from the banking system and holds it in cash. Calculate the maximum possible changes in deposits and the money supply.

Maximum possible change in deposits = ($800 – $100) × (1/25%) – $3,200 = –$400

Maximum possible change in money supply = $100 + (–$400) = –$300

20.3 Money Demand

7. Determine whether each of the following events would affect the transaction demand for money or the asset demand for money and how.

Event	Effect
(a) Fewer people use electronic payment methods because of security problems.	*(Transaction demand for money / Asset demand for money) will (increase / decrease).*
(b) The time interval between income payments decreases.	*(Transaction demand for money / Asset demand for money) will (increase / decrease).*
(c) People's desire to consume increases.	*(Transaction demand for money / Asset demand for money) will (increase / decrease).*
(d) People's desire to save increases.	*(Transaction demand for money / Asset demand for money) will (increase / decrease).*
(e) Nominal income decreases.	*(Transaction demand for money / Asset demand for money) will (increase / decrease).*
(f) People's wealth increases.	*(Transaction demand for money / Asset demand for money) will (increase / decrease).*

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(g) The risks of holding interest-bearing assets increase.	*(Transaction demand for money / Asset demand for money) will (increase / decrease).*
(h) The liquidity of interest-bearing assets increases.	*(Transaction demand for money / Asset demand for money) will (increase / decrease).*

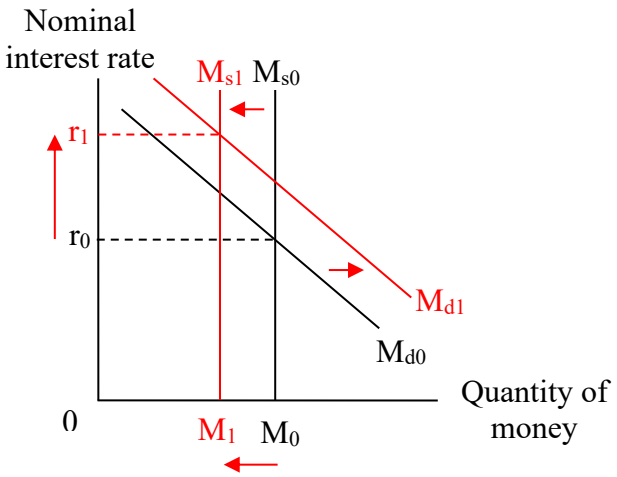
20.4 Determination of the Equilibrium Interest Rate in the Money Market

8. When the general price level increases, money demand will *(increase / decrease)*. The nominal interest rate will *(increase / decrease)*.

9. When the central bank injects newly printed banknotes into the banking system, the money supply will *(increase / decrease)*. The nominal interest rate will *(increase / decrease)*.

10. Suppose the stock market becomes volatile. At the same time, the central bank raises the required reserve ratio. With the aid of the following diagram, explain the effects of the above events on the nominal interest rate and the quantity of money.

When the stock market becomes volatile, *(money demand / money supply)* will *(increase / decrease)*. When the central bank raises the required reserve ratio, *(money demand / money supply)* will *(increase / decrease)*. The nominal interest rate will *(increase / decrease)* and the quantity of money will *(increase / decrease)*.



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