Chapter 16

Determinants
of the Money Supply

The Money Multiplier

- the money multiplier m gives the (more realistic) extent of multiple deposit creation:

  $M = m \times MB$

  where M is the money supply and MB is the monetary base
- to calculate the money multiplier, remember that

  $R = RR + ER = (r \times D) + ER$

  and that

  $MB = R + C$

  $= (r \times D) + ER + C$

The Money Multiplier (cont.)

- two implications follow:
  - the amount of monetary base required to support the existing deposits and currency in circulation
  - an increase in monetary base from an additional $1 in currency does not support any additional deposits
- *currency ratio* (c) = the ratio of currency to deposits:

  $C = c \times D$
- *excess reserves ratio* (e) = the ratio of excess reserves to deposits:

  $ER = e \times D$

The Money Multiplier (cont.)

- then:

  $MB = (r \times D) + (e \times D) + (c \times D)$

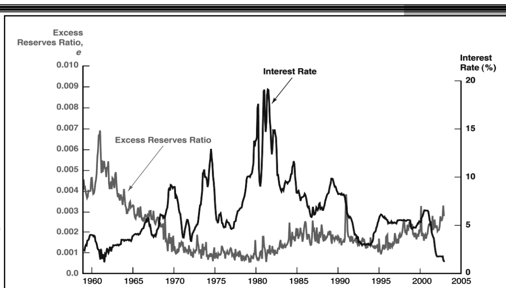
  $= (r + e + c) \times D$
- hence, deposits are equal to

  $$D = \frac{1}{r+c+e} \times MB$$
- by definition, money supply (M1) is

  $M = C + D = (c \times D) + D = (1 + c) \times D$

  $$m \times MB = \frac{1+c}{r+c+e} \times MB$$
- hence, $m = \dfrac{1+c}{r+c+e} < \dfrac{1}{r}$

Excess Reserves Ratio



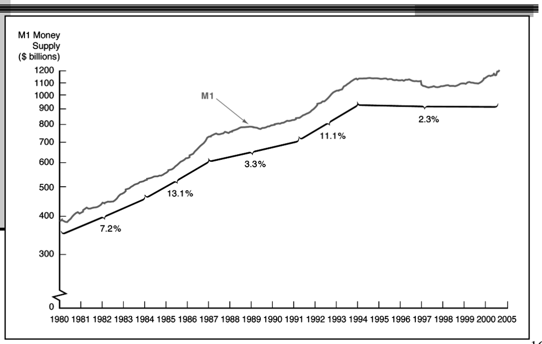
Determinants of e
1. **$i\uparrow$, relative R^e on $ER\downarrow$ (opportunity cost $\uparrow$), $e\downarrow$**
2. **Expected deposit outflows, *ER* insurance worth more, $e\uparrow$**

Factors Determining Money Supply

SUMMARY **Table 1 Money Supply (M1) Response**

Player	Variable	Change in Variable	Money Supply Response	Reason
Federal Reserve System	r	↑	↓	Less multiple deposit expansion
	MB_n	↑	↑	More MB to support D and C
	DL	↑	↑	More MB to support D and C
Depositors	c	↑	↓	Less multiple deposit expansion
Depositors and banks	Expected deposit outflows	↑	↓	$e\uparrow$ so fewer reserves to support D
Borrowers from banks and the other three players	i	↑	↑	$e\downarrow$ so more reserves to support D

Money Supply



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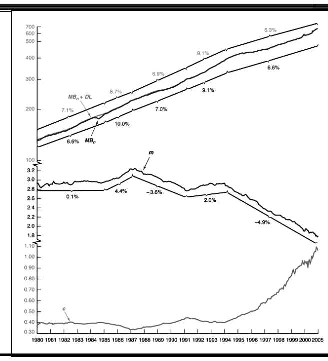
Determinants of the Money Supply



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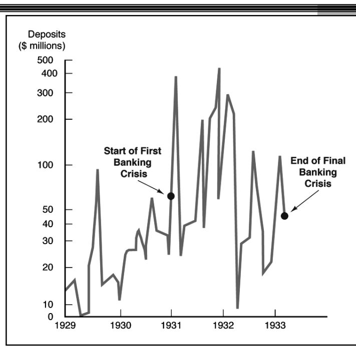
Deposits at Failed Banks: 1929–33



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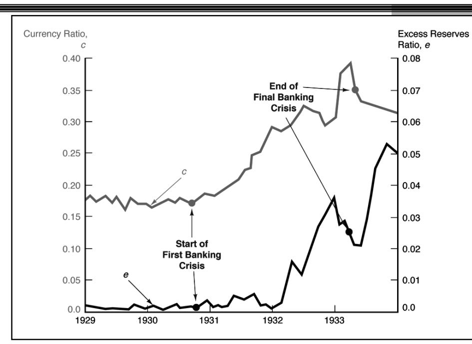
e, c: 1929–33



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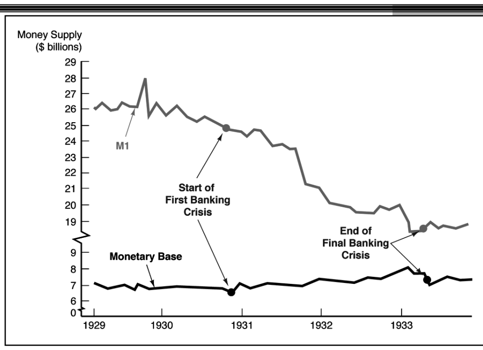
Money Supply and Monetary Base: 1929–33



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