

European Central Bank Monetary Intermediation Cost

Fractional Reserve Analysis with 1% ECB Reserve Requirement

(a) No Financial Intermediary to 1% ECB Reserve Requirement

No Financial Intermediary Analysis

When no financial intermediary is involved, intermediation must be real direct asset lending. In this example, Farmer B as Intermediary lends Farmer A a tractor to use for €500. Farmer A rents the tractor from Farmer B and grows a crop which is sold. In this system €1,500 of wealth is created from crop sale split €1,000 to Farmer A and €500 to Farmer B for use of the tractor with financial intermediary not participating at €0.

I. No Financial Intermediary (Real Asset Tractor Lending)					
	Farmer A	Farmer B	Intermediary	Total	
Start (Cash)	€ 498	€ 498	€ 5	€ 1,000	Begin Cash
Tractor Rent	(€ 500)	€ 500		€ 0	
Sell Crop	€ 1,500			€ 1,500	
End (Cash)	€ 1,498	€ 998	€ 5	€ 2,500	End Cash
Direct Net Earnings	€ 1,000	€ 500	€ 0	€ 1,500	Earnings (€)
% Earnings	66.67%	33.33%	0.00%	100.00%	Earnings (%)

II. With 1% Reserve Financial Intermediation Added (1% Real Backing)					
	Farmer A	Farmer B	Intermediary	Total	
Start (Cash)	€ 498	€ 498	€ 5	€ 1,000	Begin Cash
Direct Net Earnings(Above)	€ 1,000	€ 500	€ 0	€ 1,500	
Loan	€ 500		€ 500	€ 500	
Loan Interest	(€ 25)		€ 25	€ 0	
Pay Back Loan	(€ 500)		€ 500	€ 0	
End (Cash)	€ 1,473	€ 998	€ 525	€ 2,995	End Cash
Net Earnings	€ 975	€ 500	€ 520	€ 1,995	Earnings (€)
% Earnings	48.87%	25.06%	26.07%	100.00%	Earnings (%)
Wealth Transfer=(Principal+Interest) x (1- RR). Inflation is Principal portion wealth transfer.				19.80%	Inflation Cash

1% Fractional Reserve Requirement Financial Intermediation/Wealth Transfer Impact						
	(A)=(a) x (1-RR)	(B)= Item x (1-RR)	= (1 - RR)	(C)=Item x RR	(D) = (B) + (C)	
Item	Item \$ Amount	Inflation	\$ Unearned	% Unearned	\$ Earned	Total Return
Loan Principal (a)	€ 500.00	€ 495.00	€ 495.00	99.00%		€ 495.00
Interest (Loan(a) x (c))	€ 25.00		€ 24.75	99.00%	€ 0.25	€ 25.00
Total	€ 525.00	€ 495.00	€ 519.75	99.00%	€ 0.25	€ 520.00
Wealth Transfer (Unearned Return = $\sum(B)$)						€ 519.75
Financial Intermediation Unearned Return % (Unearned Return/Total Return = $\sum(B)/\sum(D)$)						99.95%
Intermediary Return on €5 Required Reserve Investment (Total Return/Start Cash)						10400.00%
Earned Financial Intermediation (Interest x Reserve Requirement = $\sum(C)$)						€ 0.25
Earned Financial Intermediation % of Total Return of €520 (Earned Return/Total Return)						0.05%

1% Fractional Reserve Financial Intermediation Analysis

In this 1% fractional reserve system the Financial Intermediary adds a €500 loan into the system 99% (1-reserve requirement) backed by no real or financial assets, increasing fractional reserve returns by €495 to €1,995 from the sale of the exact same crop now split €975 to Farmer A, €500 to Farmer B and €520 to the intermediary that added 1% real credit. Farmer A pays back a €500 loan and pays interest of €25 for 1% (€5) of true credit intermediation. In the real world Farmer A would not borrow money this way unless he thought he was getting something, in this case Farmer A might take this type of loan to maintain some liquidity during the growing period before crop harvest. The Financial Intermediary loan captures 26.07% of the system earnings in the form of inflation and interest in a 99% direct transfer of wealth since the same crop is produced.

Fractional Reserve Intermediation Analysis

In this system Wealth Transfer is (Loan Principal + Interest) x (1- Reserve Requirement)). Inflation is Principal portion of wealth transfer. In a 0% reserve system 100% of the loan repayment results in inflation with interest payments as direct wealth transfer without added inflation. In a 100% reserve system there is no inflationary wealth transfer and 100% of the interest earned is true credit intermediation.

Assumptions

Initial System Cash	€ 1,000
Tractor Rent \$	€ 500
Crop Sale Price	€ 1,500
(a)-Loan Amount \$	€ 500
(b)-Reserve Requirement (RR)	1.00%
(c)-Interest Rate	5.00%