

Federal Reserve System Monetary Intermediation Cost

Fractional Reserve Analysis with 10% Reserve Requirement (Example)

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)	\$475	\$475	\$50	\$1,000	Begin Cash
Tractor Rent	(\$500)	\$500		\$0	
Sell Crop	\$1,500			\$1,500	
End (Cash)	\$1,475	\$975	\$50	\$2,500	End Cash
Direct Net Earnings	\$1,000	\$500	\$0	\$1,500	Earnings (\$)
% Earnings	66.67%	33.33%	0.00%	100.0%	Earnings (%)

II. With 10% Reserve Financial Intermediation Added (10% Real Backing)					
	Farmer A	Farmer B	Intermediary	Total	
Start (Cash)	\$475	\$475	\$50	\$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)	\$1,450	\$975	\$525	\$2,950	End Cash
Net Earnings	\$975	\$500	\$475	\$1,950	Earnings (\$)
% Earnings	50.00%	25.64%	24.36%	100.0%	Earnings (%)
Wealth Transfer=(Principal+Interest) x (1- RR). Inflation is Principal portion wealth transfer.				18.0%	Inflation Cash

10% 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)	\$500.0	\$450.0	\$450.00	90.0%		\$450.0
Interest (Loan(a) x (c))	\$25.0		\$22.50	90.0%	\$2.50	\$25.0
Total	\$525.0	\$450.0	\$472.50	90.0%	\$2.50	\$475.0
Wealth Transfer (Unearned Return = Σ(B))						\$472.50
Financial Intermediation Unearned Return % (Unearned Return/Total Return = Σ(B)/Σ(D))						99.5%
Intermediary Return on \$50 Required Reserve Investment (Total Return/Start Cash)						950.0%
Earned Financial Intermediation (Interest x Reserve Requirement = Σ(C))						\$2.50
Earned Financial Intermediation % of Total Return of \$475 (Earned Return/Total Return)						0.5%

10% Fractional Reserve Financial Intermediation Analysis

In this 10% fractional reserve system the Financial Intermediary adds a \$500 loan into the system 90% (1-reserve requirement) backed by no real or financial assets, increasing fractional reserve returns by \$450 to \$1,950 from the sale of the exact same crop now split \$975 to Farmer A, \$500 to Farmer B and \$475 to the intermediary that added 10% real credit. Farmer A pays back a \$500 loan and pays interest of \$25 for 10% (\$50) 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 24.36% of the system earnings in the form of inflation and interest in a 90% direct transfer of wealth since the same crop is produced.

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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)	10.00%
(c)-Interest Rate	5.00%