

Bank of Japan Monetary Intermediation Cost Fractional Reserve Analysis with 1.3% Reserve Requirement (Example)

No Financial Intermediary Analysis

When no financial intermediary is involved, intermediation must be real direct asset lending. In this example, Manufacturer as Intermediary lends Farmer a tractor to use for ¥50,000. Farmer rents the tractor from Manufacturer and grows a crop which is sold. In this system ¥150,000 of wealth is created from crop sale split ¥100,000 to Farmer and ¥50,000 to Manufacturer for use of the tractor with financial intermediary not participating at ¥0.

I. No Financial Intermediary (Real Asset Tractor Lending)					
	Farmer	Manufacturer	Intermediary	Total	
Start (Cash)	¥49,675	¥49,675	¥650	¥100,000	Begin Cash
Tractor Rent	-¥50,000	¥50,000		¥0	
Sell Crop	¥150,000			¥150,000	
End (Cash)	¥149,675	¥99,675	¥650	¥250,000	End Cash
Direct Net Earnings	¥100,000	¥50,000	¥0	¥150,000	Earnings (¥)
% Earnings	66.67%	33.33%	0.00%	100.00%	Earnings (%)

II. With 1.3% Reserve Financial Intermediation Added (1.3% Real Backing)					
	Farmer	Manufacturer	Intermediary	Total	
Start (Cash)	¥49,675	¥49,675	¥650	¥100,000	Begin Cash
Direct Net Earnings(Above)	¥100,000	¥50,000	¥0	¥150,000	
Loan	¥50,000		¥50,000	¥50,000	
Loan Interest	-¥2,500		¥2,500	¥0	
Pay Back Loan	-¥50,000		¥50,000	¥0	
End (Cash)	¥147,175	¥99,675	¥52,500	¥299,350	End Cash
Net Earnings	¥97,500	¥50,000	¥51,850	¥199,350	Earnings (¥)
% Earnings	48.91%	25.08%	26.01%	100.00%	Earnings (%)
Wealth Transfer=(Principal+Interest) x (1- RR). Inflation is Principal portion wealth transfer				19.74%	Inflation Cash (%)
Inflation Cash (¥) [Principal Wealth Transfer] = Total Cash (¥) End - Total Cash (¥) Begin				¥49,350	Inflation Cash (¥)

1.3% Fractional Reserve Requirement Financial Intermediation/Wealth Transfer Impact						
Item	Item \$ Amount	Inflation	¥ Unearned	% Unearned	¥ Earned	Total Return
Loan Principal (a)	¥50,000	¥49,350	¥49,350	98.70%		¥49,350
Interest (Loan(a) x (c))	¥2,500		¥2,468	98.70%	¥33	¥2,500
Total	¥52,500	¥49,350	¥51,818	98.70%	¥33	¥51,850
Wealth Transfer (Unearned Return = Σ(B))						¥51,818
Financial Intermediation Unearned Return % (Unearned Return/Total Return = Σ(B)/Σ(D))						99.94%
Intermediary Return on ¥650 Required Reserve Investment (Total Return/Start Cash)						7976.92%
Earned Financial Intermediation (Interest x Reserve Requirement = Σ(C))						¥33
Earned Financial Intermediation % of Total Return of ¥51850 (Earned Return/Total Return)						0.06%

1.3% Fractional Reserve Financial Intermediation Analysis

In this 1.3% fractional reserve system the Financial Intermediary adds a ¥50,000 loan into the system 98.7% (1-reserve requirement) backed by no real or financial assets, increasing fractional reserve returns by ¥49,350 to ¥199,350 from the sale of the exact same crop now split ¥97,500 to Farmer, ¥50,000 to Manufacturer and ¥51,850 to the intermediary that added 1.3% real credit. Farmer pays back a ¥50,000 loan and pays interest of ¥2,500 for 1.3% (¥650) of true credit intermediation. In the real world Farmer would not borrow money this way unless he thought he was getting something. Farmer cannot tell the difference between real credit of Tractor lending and 98.7% unbacked, 1.3% reserve financial intermediation. The 98.7% unbacked Financial Intermediary loan captures an extra 24.34% to 26.01% of the system earnings in the form of inflation and interest in a 98.7% 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	¥100,000
Tractor Rent \$	¥50,000
Crop Sale Price	¥150,000
(a)-Loan Amount \$	¥50,000
(b)-Reserve Requirement (RR)	1.30%
(c)-Interest Rate	5.00%