Attachment 3(a) **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 \Leftrightarrow 00. Farmer A rents the tractor from Farmer B and grows a crop which is sold. In this system \notin 1,500 of wealth is created from crop sale split \notin 1,000 to Farmer A and \Leftrightarrow 00 to Farmer B for use of the tractor with financial intermediary not participating at \notin 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+Ir	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)
<u>ltem</u>	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 = $\Sigma(B)$)						
Financial Intermediation Unearned Return % (Unearned Return/Total Return = $\sum(B)/\sum(D)$)						99.95%
Intermediary Return on 🔁 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 ≤ 00 loan into the system 99% (1-reserve requirement) backed by no real or financial assets, increasing fractional reserve returns by ≤ 495 to $\leq 1,995$ from the sale of the exact same crop now split ≤ 975 to Farmer A, ≤ 00 to Farmer B and ≤ 20 to the intermediary that added 1% real credit. Farmer A pays back a ≤ 00 loan and pays interest of ≤ 25 for 1% (≤ 0) 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.

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

(b)

Assumptions