

Prior to 2007 - 2009 $\Rightarrow$ belief in ZERO %

$\hookrightarrow$ lowering int rates $\rightarrow$ 0% $\Rightarrow$ result

? about effectiveness of conventional monetary policy when economy is weak

INSTEAD of int rates $\rightarrow$ 0% $\Rightarrow$ QUANTITATIVE EASING (QE)

$\Downarrow$
Central bank committing to large-scale, continuous buying of high quality domestic bonds (from banks)

$\Downarrow$ effects
Bank reserves (banks' deposits at central bank)
+ sovereign yields

Desired outcomes:

$\Rightarrow$ should stimulate banks

$\Rightarrow$ should stimulate businesses + individuals

$\Downarrow$
should stimulate

$\Downarrow$
should stimulate

+ should drive asset prices

Reality: business borrowing $\nearrow$ BRT often used to fund

Results of QE are

Eventually, central banks opted for zero / negative int. rates

$\Downarrow$
did NOT trigger shift to physical cash

Reason: convenience yield / value of deposits

explicit cost of holding deposits (- int. rates)

$\Downarrow$
Negative int. rates may prove

Theoretical action chain $\Rightarrow$ businesses/individuals encouraged to hold less deposits, seek higher returns on riskier assets, save less, borrow more, invest in profitable projects



$\Rightarrow$ STIMULATE GROWTH

For this to work $\Rightarrow$ businesses, consumers, investors must feel they are adequately compensated for higher risk

Implementation of MONETARY POLICY at low int. rate levels is DIFFICULT

IMPLICATIONS of (-) int. rates for capital market expectations

if S-T int. rate is negative $\Rightarrow$ baseline risk-free int. rate for long-term capital market expectations

Instead of using observed negative rate
may substitute with neutral (Taylor rule)

Expected interest rate path: long-run convergence to equilibrium level

Asset return expectations under (-) int. rates: similar to those typical of phases of business cycle.

Additional considerations:
when int. rates are (-):

historical data

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 $\rightarrow$ may not include periods with (-) int. rates

$\rightarrow$ models may not work under conditions different to those for which they were calibrated

Other monetary policy measures may be occurring at the same time