

The logo for BTRM (The Certificate of Bank Treasury Risk Management) is located in the top right corner of the slide. It consists of the letters 'BTRM' in a bold, white, sans-serif font, centered within a blue square. Below the square, the full name 'The Certificate of Bank Treasury Risk Management' is written in a smaller, white, sans-serif font.

**BTRM**

The Certificate  
of Bank Treasury  
Risk Management

# **Managing ALM and NIM preservation during a period of ultra-low interest rates**

**BTRM Reinventarte Webinar**

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# The Impact of a Low Interest Rate Environment

In response to the financial crisis:

- Central banks worldwide slashed official interest rates to historically low levels
- Non-conventional monetary policy measures, such as large scale bond purchases, depressed medium to long-term risk-free interest rates and compressed risk premiums (so the yield curve flattened)
- Prices for non-interest bearing asset classes, such as stocks and real estate soared, depressing yields in these markets as well

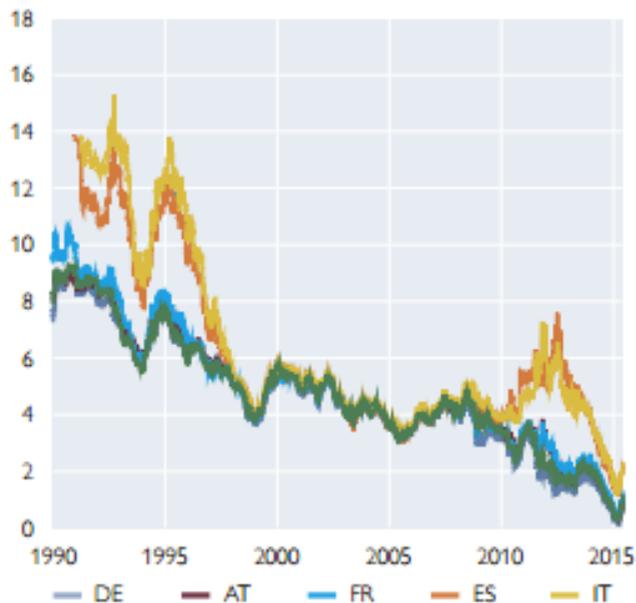
# Negative 10 Year Real Yields

## Ten-year bond yields

### Ten-year yields

Benchmark government bonds,  
daily data, cut-off date = June 10, 2015

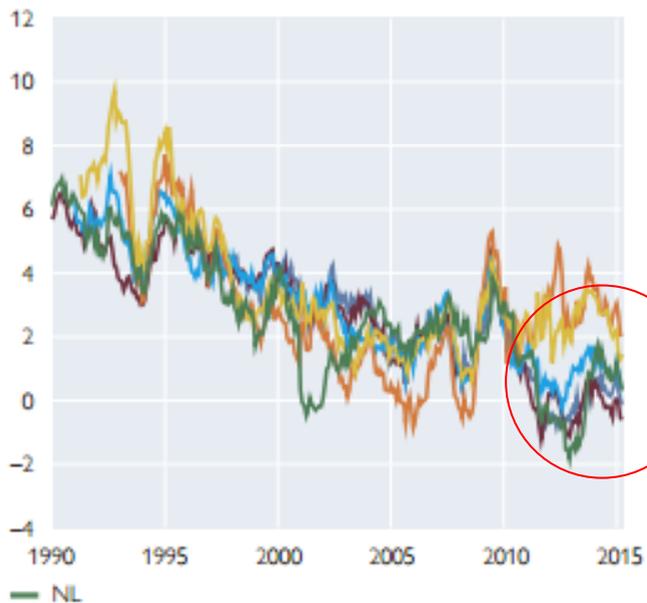
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### Real ten-year yields

Benchmark government bonds,  
ten-year minus HICP inflation, monthly data up to April 2015

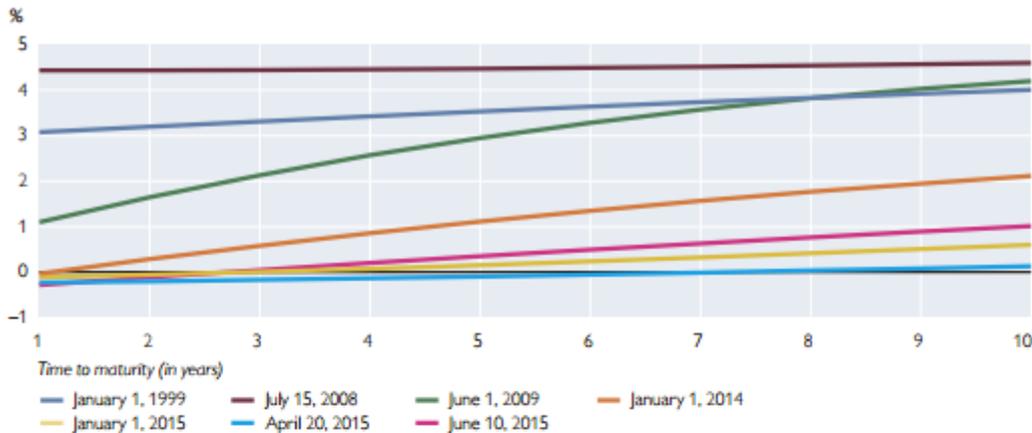
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Source: Thomson Reuters, ECB, Authors' calculations.

# Flattening of Yield Curves in the Major Economies

**Euro area yield curve over time**



**Global yield curve slope over time**

Difference between ten-year and one-year yields



## Consequences/ALM Considerations (1)

- Initially, banks tended to benefit from parallel downward shifts in the yield curve as the duration of deposits was typically shorter than the duration of assets
- The flattening was often supported by a zero floor on interest rates on deposits, as it was generally not possible or appropriate to charge negative interest rates to commercial clients
- Consequently, NIM was compressed and the income from maturity transformation was reduced. In Switzerland the bank refinancing rate fell into negative territory and interest rate margins expanded
- Loss of lending margin in some economies, leading to increased risk-taking (search for yield)
- Delayed balance sheet repair (e.g., ever-greening of loans)

## Consequences/ALM Considerations (2)

- Gradual erosion of earnings from non and low interest bearing liabilities re-inforcing NIM compression
- Reduced interest rate volatility likely to result in lower risk of loss from fixed rate drawdowns and prepayment risk
- Focus on fee income and cost control (intensified by the development of the P2P market)
- Basis IR risks more in evidence, e.g., LIBOR/Mortgage SVR spread
- Negative rates potentially affecting the stability of bank deposits, e.g., depositors might respond to very low rates by holding their savings in the form of bank notes
- NSFR problematic as depositors reluctant to place longer than o/n unless prohibitively expensive rates paid
  - In Holland some banks pay positive rates of up to 75bps (the base rate is -50bps) for this reason
- There may be floor below which retail / SME deposit rates will not fall

## Consequences/ALM Considerations (3)

- Potential reduction in natural duration hedging capacity, with changes in the balance sheet structure – on the liability side, customers tended to move from fixed term deposits into non-maturing sight deposits. On the asset side, customers could increasingly prefer longer tenors for fixed rate loans. As a result, there might be a tendency for the net asset duration gap to widen, implying less natural offsetting positions in the balance sheet and more reliance upon external markets to hedge interest rate positions
- Potential technical and operational problems: Banks needed to ensure that their business infrastructure (e.g., derivative models, ‘VaR’ or ‘Expected Shortfall’ models and IT systems) could handle negative rates and yield reasonable results
  - This is a bigger problem than one might first envisage

## Low rates response

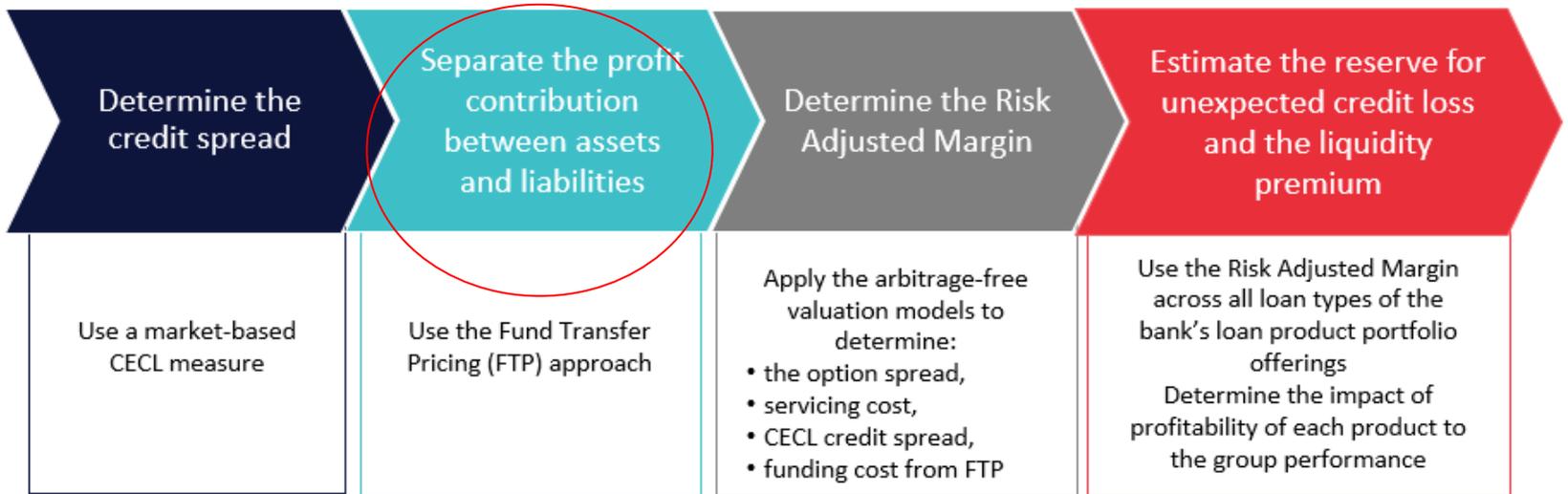
- /// COVID 19 stress event has led to low interest rates compressing bank margins. Higher unemployment rates and a decline in home prices have heightened expected credit losses. Furthermore, economic uncertainties and customer behaviour has resulted in higher required HQLA balances
- /// Key challenges in current environment
  - /// Unfit for purpose profitability measures:
  - /// Loan rates should incorporate the economics of profitability with an ability to isolate funding cost, credit spread, and off-balance sheet credit and option risk
- /// Accounting-based ECL calculations or internal credit ratings should determine the relative loan profitability across products that have different risk drivers

# Low rates response

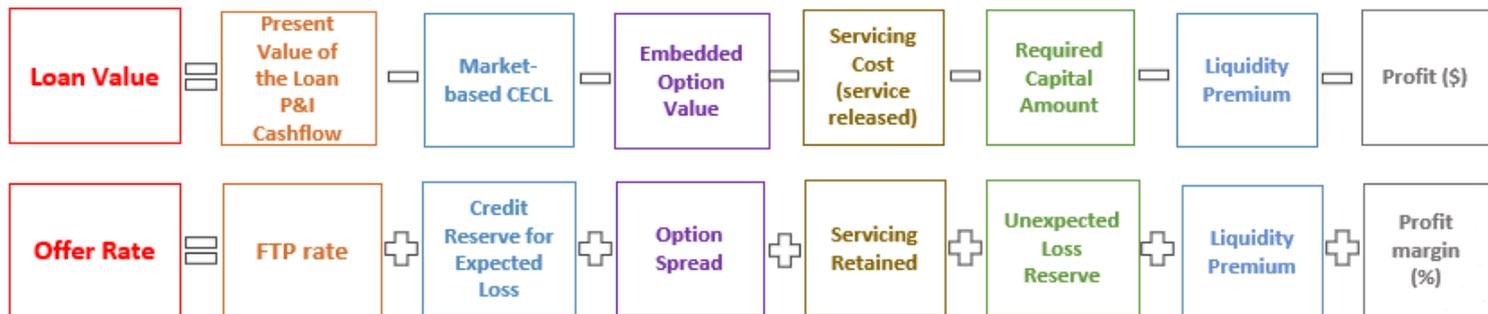
## /// Unfit for purposes MI

- /// Customer rates are peer-driven: however the bank must be aware of the minimum loan rate for each product and customer type, to be aware of how far it can match competitor rates and remain profitable
- /// Ensure MI that analyses credit and market risks holistically to determine relative product-type profitability
- /// Ensure coherence between the management of the balance sheet and customer relationships
- /// How to increase volume when there is a lack of demand for the bank's products?
- /// How does the bank's risk-based loan rate impact the risk-adjusted return on capital (RAROC)?

# Pricing approach: orthodox but essential in stress



The above process can be summarized by the equations:



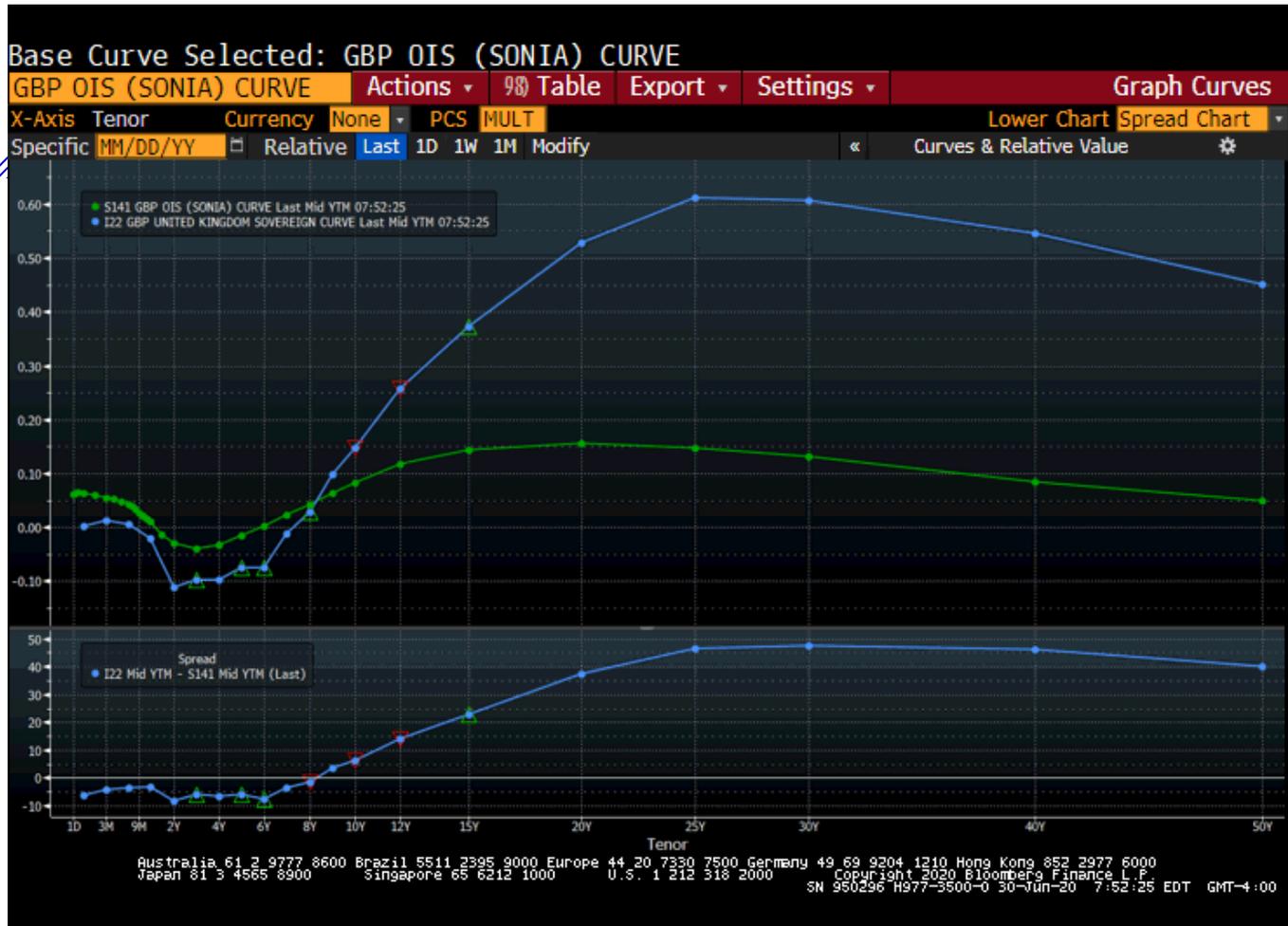
## Pricing approach...

- /// The approach described on previous slide by Thomas Ho Ltd is orthodox but ensures that product specific profitability can be estimated
  - /// “In practice a bank should identify and break down (1) Funding cost, (2) Funding margin, profits attributed to the funding cost of deposit accounts relative to the capital market funding rates, (3) option spread, the option value, such as the prepayment option, offered to the borrowers, (4) loan servicing cost, which is the direct cost for each loan purchased/originated, (5) credit spread, the ECL amortised over the life of the loans, (6) unexpected loss reserve spread, the additional loss reserve in case ECL is not sufficient. As the losses can exceed expectations, and (7) finally, the net spread is the Loan Product Margin.”
- /// In a compressed NIM / low-rate environment, some approach of this kind is essential for both tactical and strategic reasons

# ALM considerations

- /// HQLA optimisation demands minimisation of “HQLA” and holding more non-HQLA liquid assets for liquidity risk purposes
- /// See slide on “capital hedging”
- /// P&L/NIM preservation suggests:
  - /// Increasing share of fee-based income
  - /// Lending at longer tenors fixed rate
  - /// Pass negative rates on to corporates and high balance retail deposit customers
  - /// Hedging funding costs using swaps to move to floating rate (swap doc states rates not floored)
  - /// Lock in positive rates on earnings using swaps where possible

# GBP curves 30/6/2020

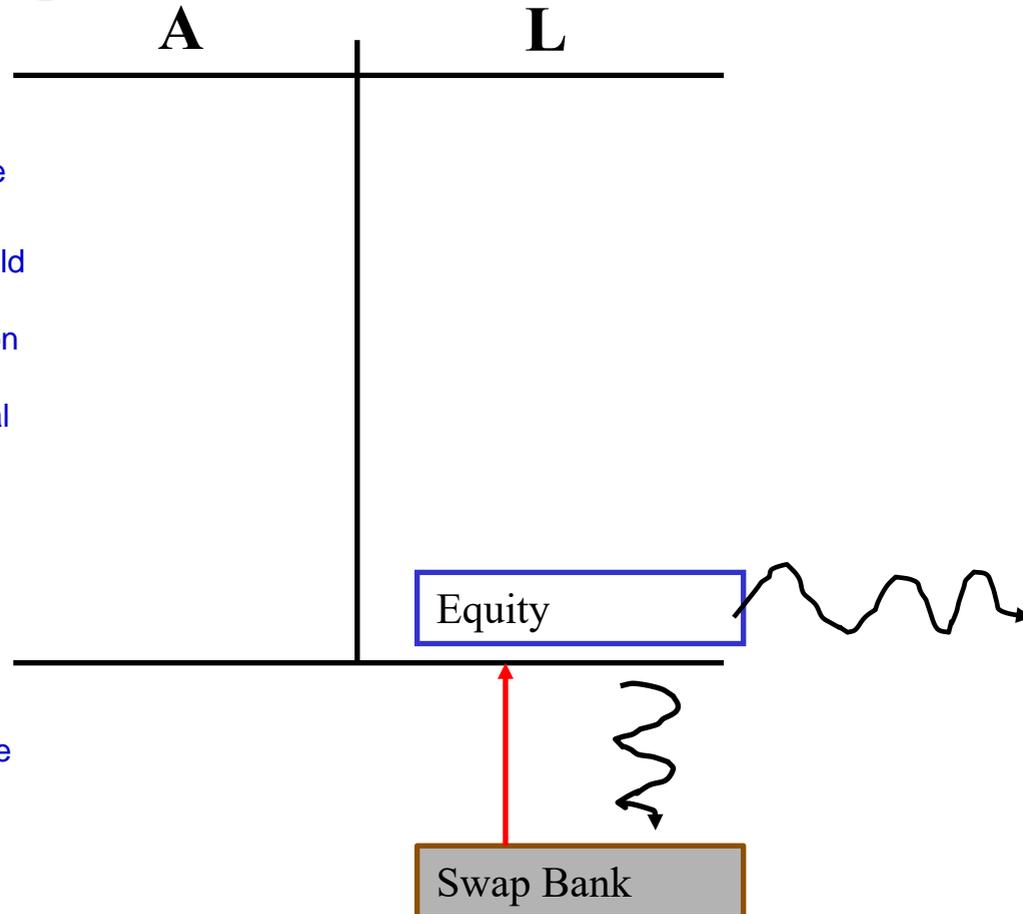


# Capital “hedging”

- /// A common practice in some banks has been to generate income from retained reserves (“free reserves”) via the interest-rate swap market
- /// Also referred to as “capital hedging” because it removes volatility in the income stream
- /// As the chart shows, an orthodox hedge against capital, which has a non-fixed coupon, would be to receive floating / pay fixed
- /// This swap hedge transacts an IRS on the notional balance of the reserves to receive fixed / pay floating
- /// But in a negative swap curve environment (see previous slide) this is no longer the “free lunch” it once was
- /// So where should the reserves be placed? And should this “hedge” be discontinued?

# Capital “hedge”

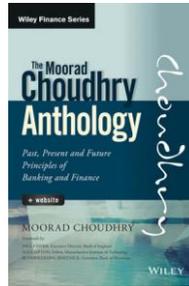
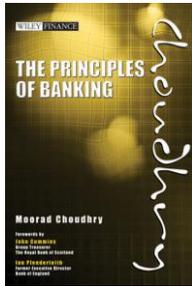
- /// Hedging the “free reserves”
- /// Removing volatility in the income stream
- /// (An orthodox hedge would receive floating to hedge the floating rate obligation on the capital – however the coupon on the capital for CET1 is not an obligation)
- /// This breaks down when the curve is negative...
- /// ...unless one views the curve may go more negative, in which case lock in the lower negative rate now...



# Conclusions

- /// Very low and negative interest rates environments present a serious challenge for banks, in some cases perhaps even an existential one
- /// Banks should incorporate a strategic policy, and communications, response to the possibility of a sustained period of low rates, negative real rates and even negative nominal rates in certain currencies
- /// How to address impact of yield curves levels on customer pricing is a key part of this policy response
- /// Optimising the HQLA is also a key imperative

# Reading



*The Principles of Banking*, Singapore: John Wiley & Sons Ltd  
2013, chapters 11-15

*Moorad Choudhry Anthology: Past, Present and Future  
Principles of Banking and Finance*, Singapore: John Wiley &  
Sons Ltd 2018, chapters 8, 10-14

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