Interest Rate Hedging Opportunities for Today's Banking Environment

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Today's Banking Environment

- Increased liquidity and capital constraints, elevated market volatility and heightened competition have led to more demand and expanded use of derivatives by community banks.
- Interest rate swaps, caps and floors have become popular tools for community banks to manage balance sheet sensitivities and achieve specific funding and investment objectives.
- These products can also be used by community banks to expand their product set and create more lending opportunities on a loan level basis.
- Dodd-Frank impacts many banking activities, however community banks below $10 billion in assets are exempt from many of the Dodd-Frank requirements related to derivatives strategies.
- Volcker Rule (implemented in July 2015) prevents FDIC insured institutions from using derivative products for proprietary trading. Community banks should acknowledge Volcker Rule compliance in their interest rates hedging policy and confirm their use of derivatives is for hedging purposes.

Rate Market – Key Themes

- Federal Open Market Committee left policy rates unchanged at its meeting last week
- Both the Fed and the markets are predicting the first rate hike to occur by the end of 2015 (consistent with PNC's Economic Department)
- Changes in market implied forwards are running much lower than Fed expectations
- Today's low rates on the cusp of a Fed hike and the mismatch between the Fed and forward curve provide a good opportunity to lock in attractive long term financing
- Interest rates have been volatile over the last quarter (Greece and China situations). The trend is towards higher rates with the 10Y Treasury at 2.16%, the higher end of the 2015 range
- Shorter term yields are following suit
- The US economic picture is generally healthy, as GDP came in slightly below consensus for 2Q and the weakness in 1Q was lessened
- US payroll growth of +173k and a unemployment rate of 5.1% in August

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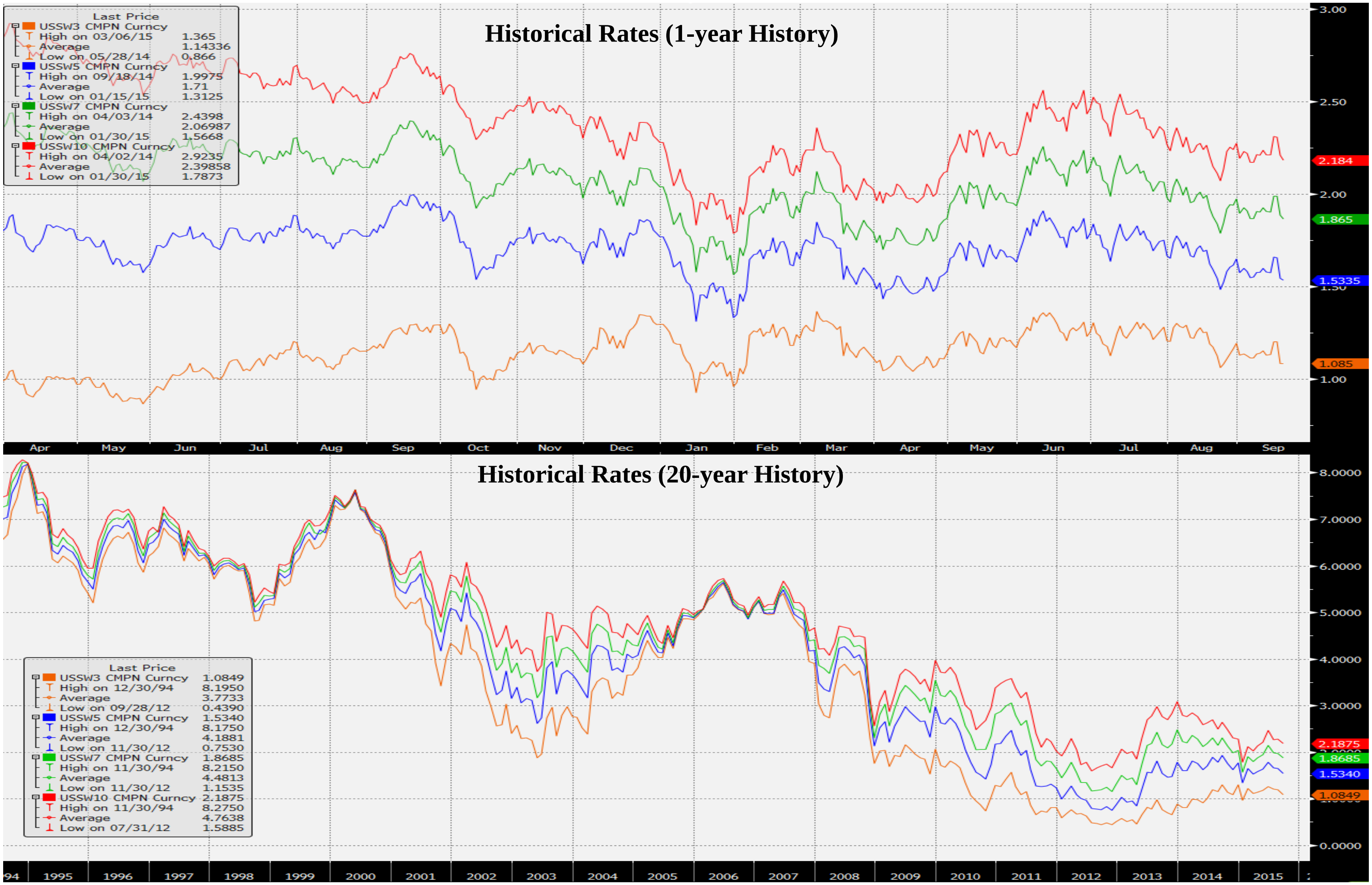
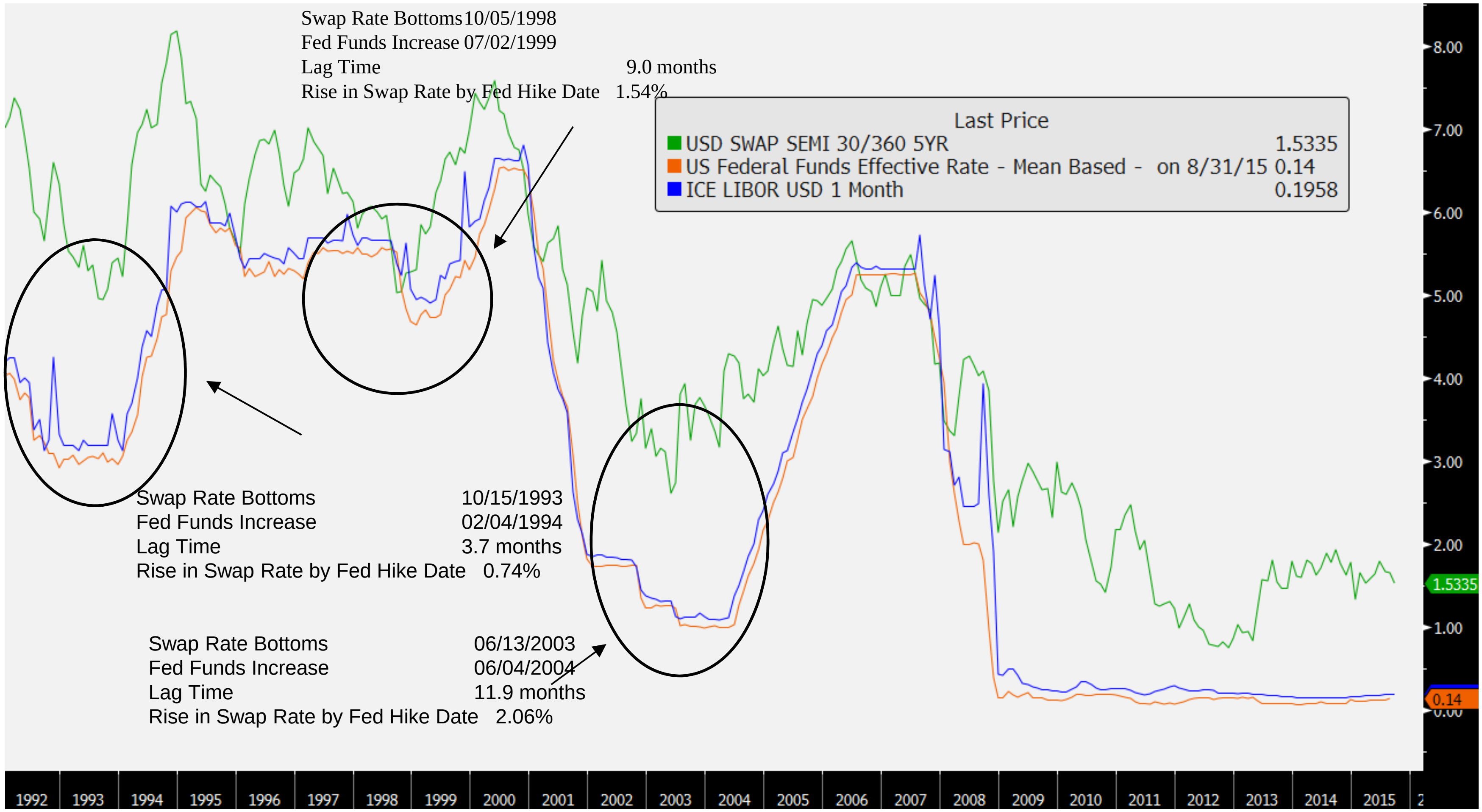
3, 5, 7 & 10 Year LIBOR Swap Rates - Historical Lows



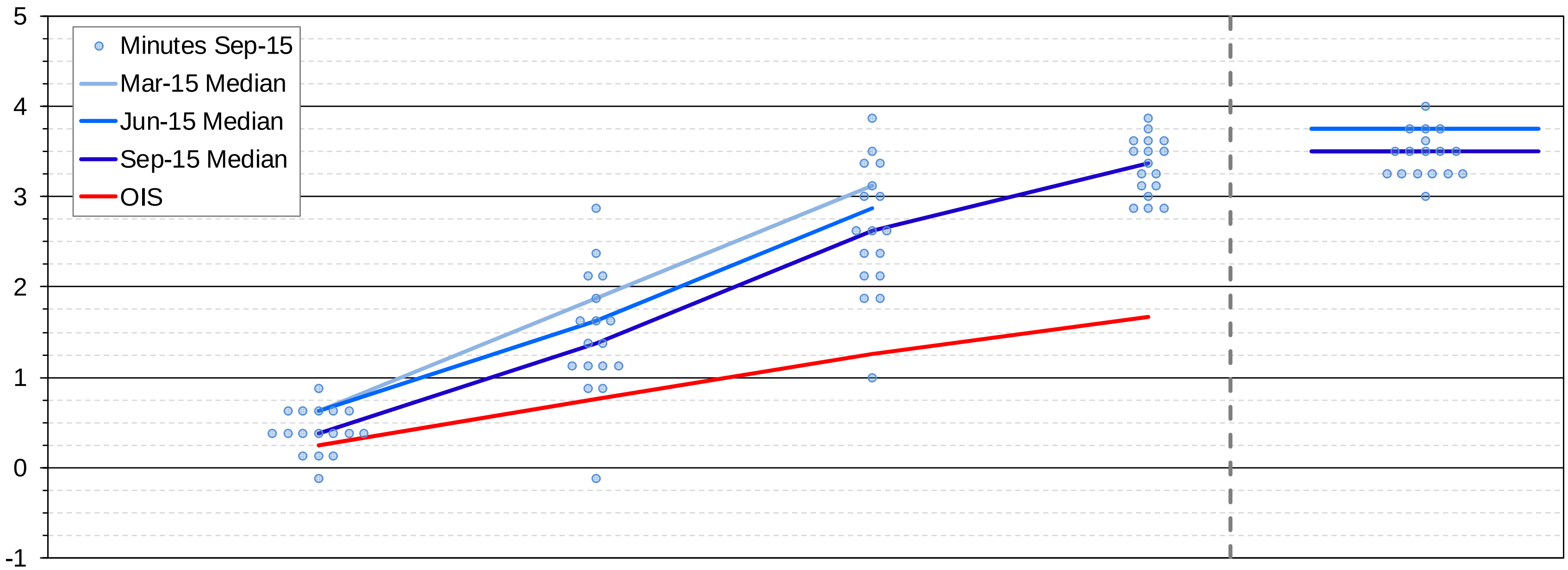
Fixed Rates Rise "Ahead of the Fed"

- A look at the end of the past three rate cycles shows that on average, rates begin to rise approximately 8 months prior to the first Fed rate hike. By the time that first rate hike occurs, fixed rates have already risen 1.44%.



US Interest Rate Environment

FOMC "Dot Plot" – target Fed Funds rate at year-end



	2015	2016	2017	2018	Longer Term
Sep-15 Median	0.375	1.375	2.625	3.375	3.5
Jun-15 Median	0.625	1.625	2.875		3.75
Mar-15 Median	0.625	1.875	3.125		3.75
OIS	0.249	0.757	1.261	1.668	

Source: Bloomberg

Macro Balance Sheet Hedging

- Banks can utilize interest rate swaps to hedge *individual* fixed or floating assets or liabilities or *pools* of individual fixed or floating rate loans, indexed deposits, or term or rolling advances.
- Pooled hedges can be achieved by segregating the assets or liabilities into smaller, homogeneous pools and executing swaps that match certain attributes of each pool.
- The risk being hedged can be a benchmark interest rate (i.e. LIBOR, Treasuries, Fed Funds) or the total risk (interest rate and credit risk) of the assets or liabilities in the pool(s).
- Macro hedging provides an opportunity to manage balance sheet sensitivities on a larger scale while still maintaining the bank's core activities.
- Special consideration should be made as to the Bank's ability to maintain and monitor the items in the pool(s) and the potential earnings impact of any adjustment to the size of the pool(s).

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Macro Balance Sheet Hedging Strategies

Extend Liabilities

- Swaps with rolling short-term FHLB borrowings
  - Less expensive than FHLB term advances
  - Flexibility to terminate the swap at the market value at any time
  - Ability to forward-start swap
    - Lock in funding costs in the future
    - Continue taking advantage of current low short-term rates
- Hedging Indexed-Linked Deposits
- TRUPS Hedging
  - Dodd-Frank did not provide the same relief from clearing requirements for bank holding companies smaller than $10 billion as it did for community banks
  - House passed spending bill in June 2015 includes relief from clearing requirements for bank holding companies smaller than $10 billion
  - Expectation is that Senate will pass a spending bill that includes this provision

Receive-Fixed Swaps

- Convert pools of floating-rate loans into fixed rates
- Convert fixed-rate term funding/deposits into floating rates

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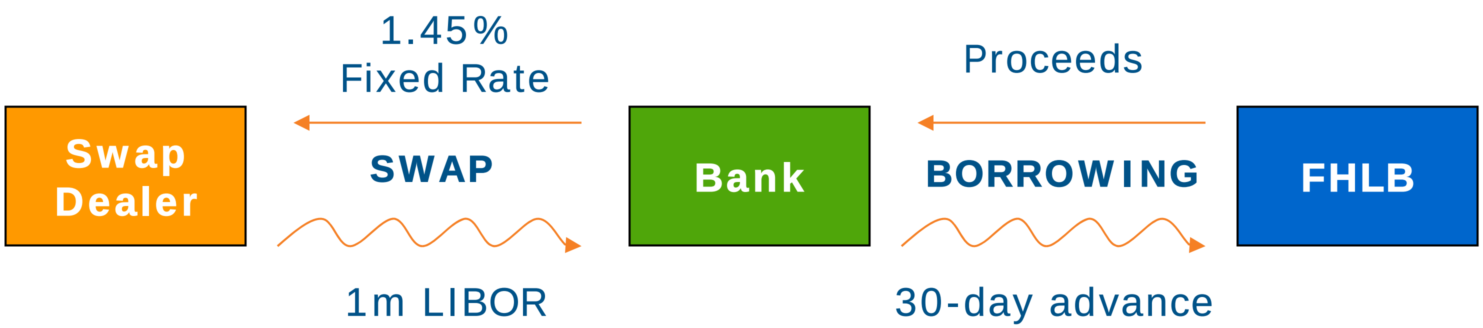
Hedging Rolling FHLB Borrowings

- Banks can take advantage of the efficiency of the swap market by entering into pay-fixed LIBOR interest rate swaps to convert rolling (30 or 90 day) FHLB advances to fixed rates
- Swaps allow banks to extend their liabilities to reduce their exposure to rising rates (liability sensitivity) in an efficient, cost-effective and accounting friendly manner
- Swap gains will offset unrealized losses on AFS securities in OCI
- Fixed LIBOR swap rates have historically been lower than the comparable FHLB term fixed rate advances. This spread varies depending on the term of the advance but are currently near their historical highs
- Currently the savings using the rolling FHLB advance and swap vs. FHLB term advances are:
  - 5 year 40-60 bps
  - 7 year 60-80 bps
  - 10 year 80-110 bps
- Special consideration should be made as to the bank's liquidity needs for the term of the hedge and its ability to maintain the rolling-FHLB advance
- Banks should consider the potential basis risk between the 30 or 90-day FHLB advance and 1 or 3-month LIBOR
- Qualifies for Hedge Accounting – ASC 815 Cashflow Hedge. Swap Dealer provides all hedge accounting support

Example – Hedging Rolling FHLB Borrowings

- Bank is considering taking out a $10 million, 5-year term fixed-rate FHLB borrowing
- Instead, bank borrows $10 million from the FHLB for 30 days and rolls that advance every 30 days
- Bank enters into a $10mm, pay-fixed 1m-LIBOR swap to extend that liability and lock in the rate for 5 years



Outcome:

- Bank continues to pay the 30-day advance rate to the FHLB each month
- Bank pays net fixed rate of [1.45% - (1m-LIBOR – 30-day advance rate)] each month for the funding
- Qualifies for Hedge Accounting – ASC 815 Cashflow Hedge

Example – Hedging Rolling FHLB Borrowings

Term	FHLB Term Advance Rate*	1m-LIBOR Swap Rate	Savings Using Swap**	Savings per year***	Total Savings Over Term***
5 years	1.99%	1.45%	54 bps	**$54,000**	**$270,000**
7 years	2.57%	1.80%	77 bps	**$77,000**	**$539,000**
10 years	3.14%	2.10%	104 bps	**$104,000**	**$1,040,000**

* Rates per Boston FHLB website 09/18/2015
** Savings do not include basis adjustment between 1m-LIBOR and the 30-day FHLB advance rate
*** Savings per $10 million borrowing

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Benefits and Considerations

Benefits	Considerations
▪ Savings vs FHLB term advances and other wholesale funding alternatives ▪ Reduces interest rate risk with longer term funding ▪ Added flexibility to terminate swap at a gain if rates rise and you no longer need the funding ▪ Hedge accounting avoids significant earnings volatility with swap market value changes (majority of swap market value change through OCI) ▪ Benefits capital if rates rise through market value change through OCI ▪ Hedge accounting documentation and effectiveness testing provided free of charge by Reval	▪ Basis difference between LIBOR and FHLB advance rate could impact the net funding rate ▪ Hedge accounting documentation and effectiveness testing needed

Accounting Documentation

- Swap Dealer offers clients comprehensive accounting support through an agreement with REVAL
- REVAL is a leading hedge accounting solutions firm that provides an extensive financial risk management system
- To help our clients achieve hedge accounting, REVAL provides the following documentation relating to swap transactions:

  At Inception

  – Hedge Strategy Document

  – Hedge Designation Document

  Quarterly

  – Hedge Effectiveness Testing

  – Mark-to-Market Statement

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  - Ability to forward-start swap
    - Lock in funding costs in the future
    - Continue taking advantage of current low short-term rates
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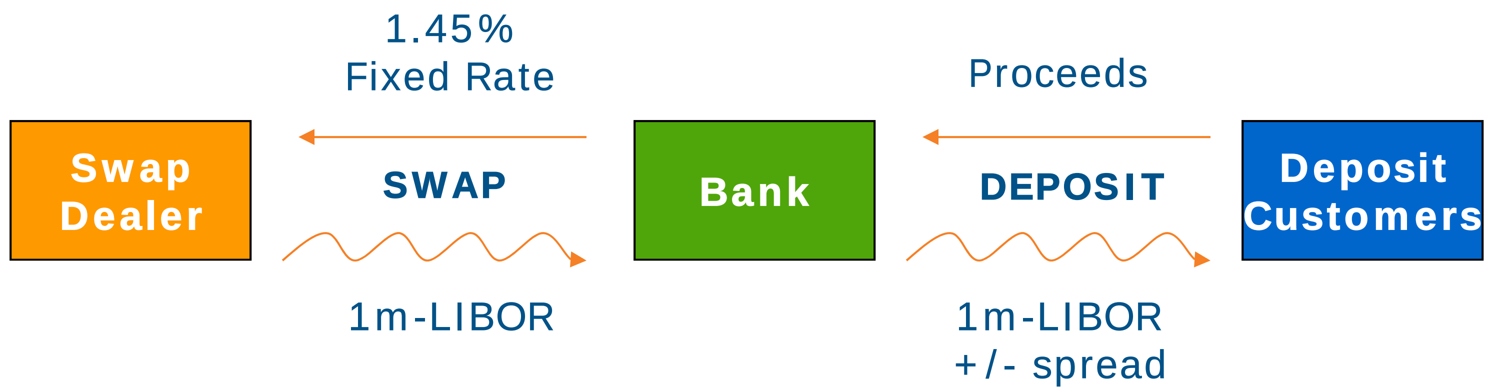
Example – Hedging Index-Linked Deposits

- Bank currently has approximately $100 million of 1m-LIBOR-based deposits
- Bank enters into a $50 million, 5-year fixed rate swap with Swap Dealer in exchange for 1-month LIBOR



Outcome:

- Customers continue to receive 1m-LIBOR +/- spread on deposits
- Bank pays net fixed rate of 1.45% +/- spread for 5 years on deposits

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Benefits and Considerations

Benefits	Considerations
• Reduce exposure to rising rates by extending liability • Lock in deposit rates in this low interest rate environment • Flexibility to adjust actual deposit rates with spread • Ability to forward-start swap to lock in future rates while continuing to pay low short term rates now • Qualifies for hedge accounting as a cashflow hedge of the benchmark index • Reval provides hedge accounting documentation and support	• Identify a pool of deposits and pay interest of 1m-LIBOR +/- spread • Maintain balance in deposit pool above the total swap notional amount • Designate swap as a hedge and receive hedge documentation from Reval • Auditors should review strategy prior to implementing

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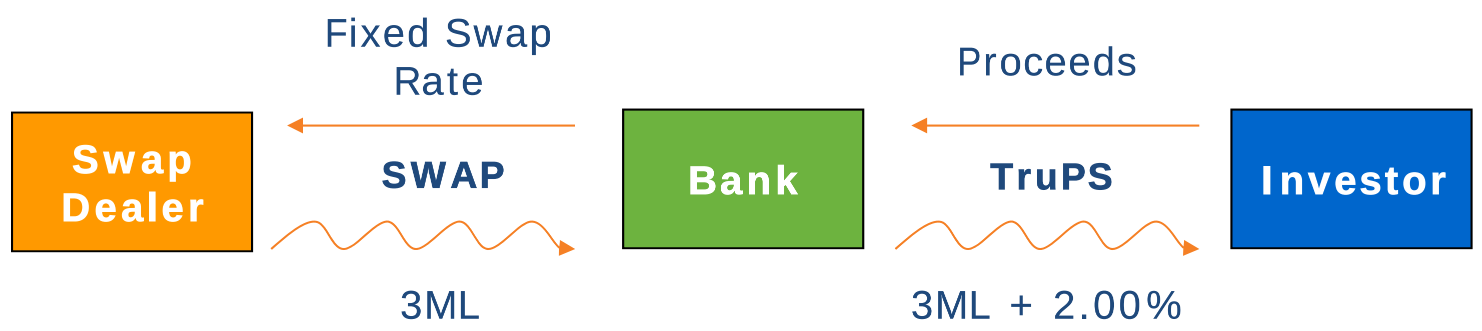
TRUPS Hedging

- The market for Trust Preferred Securities (“TruPS”) has changed dramatically over the last few years, as many investors were impacted by liquidity issues and withdrew from the sector
- Many banks were able to issue TruPS prior to the market disruption on a floating rate basis at historically tight spreads
- Banks may have the opportunity in today’s market to fix the rate on this portion of its core capital at a very attractive level
- Fixed swap rates can be structured to match your next call date or for a longer period of time based on your specific hedging objectives

Indicative Swap Pricing – TRUPS Hedging



Term	*Start*	*Maturity*	*Fixed Swap Rate*	*All-in Fixed Rate**
Spot Start				
5 Years	10/01/2015	10/01/2020	1.60%	3.60%
7 Years	10/01/2015	10/01/2022	1.90%	3.90%
10 Years	10/01/2015	10/01/2025	2.20%	4.20%
1-Year Forward				
5 Years	10/01/2016	10/01/2021	2.00%	4.00%
7 Years	10/01/2016	10/01/2023	2.30%	4.30%
10 Years	10/01/2016	10/01/2026	2.50%	4.50%

* Combines the Fixed Swap Rate with the Libor spread on the bonds

Pricing as of 09/18/2015

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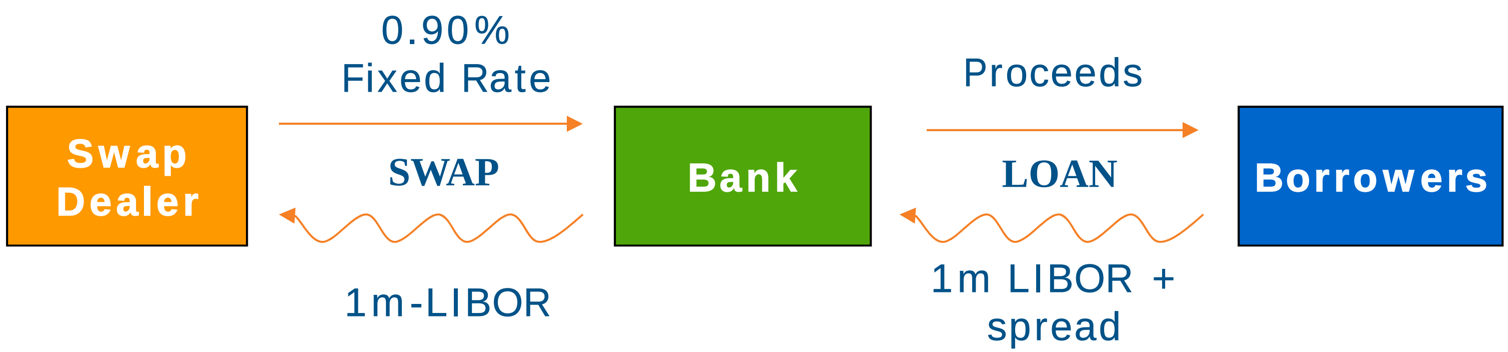
Receive-Fixed Swaps – Convert Pool of Floating Rate Loans to Fixed Rates

- Bank enters into a receive-fixed swap to convert a pool of floating rate loans into fixed rates
- Receive fixed rate (fixed swap rate + spread) over life of the swap
- Typically shorter term (3-5 years)
- Increases interest income while 1m-LIBOR remains low (initially about 70 basis points with 3-year receive-fixed swap)

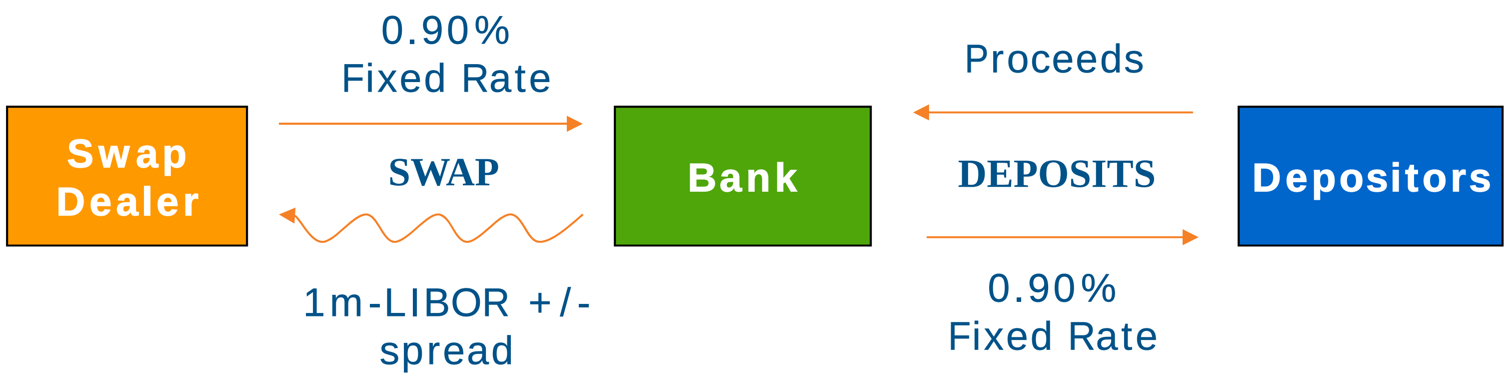


Outcome:

- Bank receives net fixed rate of (fixed swap rate + spread) each month for the term of the swap.

Receive-Fixed Swaps – Convert Fixed Rate Funding / Deposits to Floating Rates

- Bank enters into a receive-fixed swap to convert fixed rate funding/deposits to floating rates
- Pay floating rate (typically 1m-LIBOR +/- spread) over life of the transaction
- Typically shorter term (3-5 years)
- Saves interest expense while 1m-LIBOR remains low (initially about 70 basis points with 3-year receive-fixed swap)



Outcome:

- Bank pays net floating rate of (1m-LIBOR +/- spread) each month (instead of the fixed rate) for the term of the funding/deposit.

Benefits and Considerations

Benefits	Considerations
▪ Generates interest income while 1m-LIBOR remains low (initially about 70 basis points) ▪ Reduces interest rate exposure when 1m-LIBOR remains low ▪ Shorter term maturity reduces risk if 1m-LIBOR starts to increase ▪ Flexibility to terminate swap at the market value (at a gain if rates remain low) over the life of the transaction ▪ Hedge accounting avoids earnings volatility with swap market value changes (majority of swap market value change through OCI) ▪ Hedge accounting documentation and effectiveness testing provided free of charge by Reval	▪ Interest income decreases if 1m-LIBOR increases during the life of the swap ▪ Hedge accounting documentation and effectiveness testing needed

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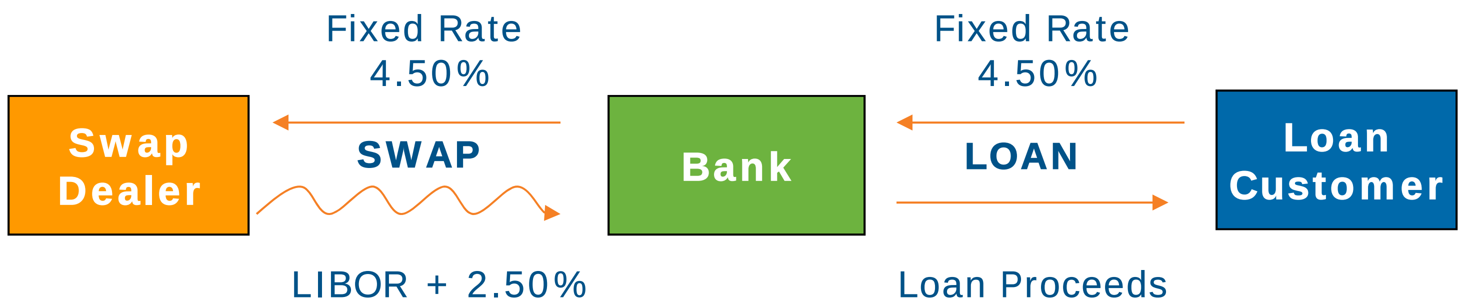
Loan Level Swaps (PNC FIRST Program)

- The following fixed rate alternatives can be offered to your commercial loan customers:
  - <u>Traditional Fixed</u> – Bank offers the client a traditional fixed rate loan and enters into an offsetting swap with a swap dealer
  - <u>Direct (Back-To-Back) Swaps</u> – Bank offers the client a floating rate loan combined with a fixed rate swap and enters into an offsetting swap with a swap dealer
- Each of these fixed rate alternatives allow the bank to manage its rate risk on a floating rate basis and to fund the loan on the short end of the curve
- This allows the bank to make pricing and structuring decisions based on credit instead of interest rate risk
- Direct (back-to-back) swap structure also provides fee income potential to banks

Traditional Fixed Structure

- Bank enters into a fixed rate loan with its customer and simultaneously enters into an offsetting fixed rate swap with Swap Dealer



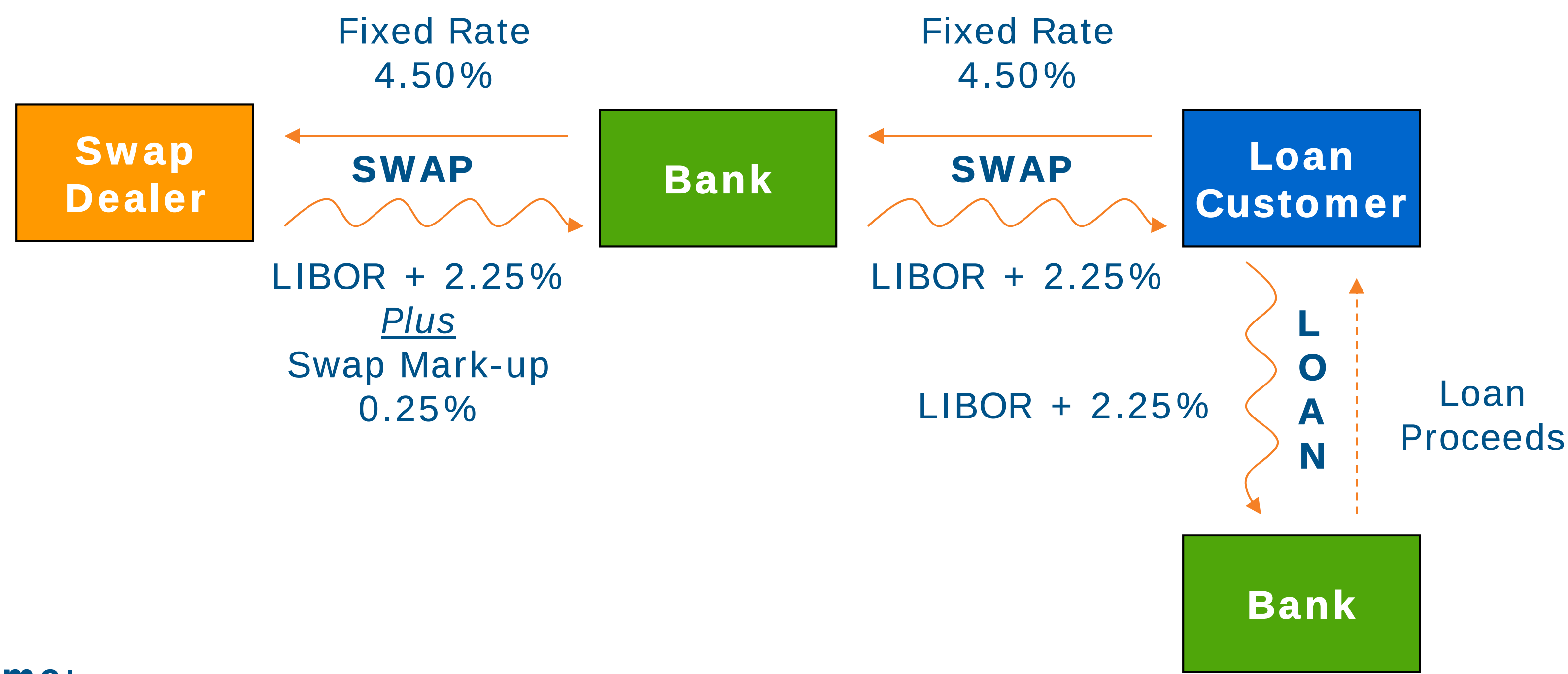
Outcome:

- Loan Customer pays a fixed rate of 4.50%

- Bank earns LIBOR + 2.50%

Direct Swap Structure

- Bank enters into a floating rate loan <u>and</u> a fixed rate swap with its customer. Simultaneously, Bank enters into an offsetting fixed rate swap with Swap Dealer



<u>Outcome</u>:

- Loan Customer pays a <u>net</u> rate of 4.50%

- Bank earns LIBOR + 2.25% on the loan and a 0.25% mark-up on the swap

Fee Income Potential

Amortizing 1m LIBOR Swap Rates					
	Amortization Period				
Term	10 Yr	15 Yr	20 Yr	25 Yr	30 Yr
5 Year	1.32%	1.36%	1.38%	1.39%	1.40%
7 Year	1.54%	1.64%	1.68%	1.70%	1.72%
10 Year	1.67%	1.89%	1.96%	2.00%	2.02%
15 Year	N/A	2.02%	2.18%	2.25%	2.29%
20 Year	N/A	N/A	2.23%	2.34%	2.39%

Amortization is based on mortgage-style, monthly payments & Act/360

Amortizing 1m LIBOR Swap DV01					
	Amortization Period				
Term	10 Yr	15 Yr	20 Yr	25 Yr	30Yr
5 Year	$391	$429	$451	$464	$472
7 Year	$468	$549	$589	$613	$628
10 Year	$515	$679	$761	$808	$839
15 Year	N/A	$763	$942	$1,047	$1,115
20 Year	N/A	N/A	$1,004	$1,187	$1,305

Amortization is mortgage-style, monthly payments & Act/360; Dollar value of each basis point per million

Fee Income		
Notional (MM)	(A)	$4
Maturity (yrs)		10
Amortization (yrs)		25
Break-even Swap rate	(B)	2.00%
DV01 ($/MM/bp)	(C)	$808
Credit Spread	(D)	2.25%
Swap Mark-up	(E)	0.25%
All-in Spread	(D+E)	2.50%
All-in Customer Rate	(B+D+E)	4.50%
Fee Income	(AxCxE)	$80,800

- In this example a $4 million loan with the 10/25 structure and 25 bps markup equates to $80,800 in fee income
- Swap mark-up is payable to Bank upon execution of the trade
- Prevailing swap mark-ups range from 10–40bps, with an average of 25bps. Smaller deals will be focused on a specific fee amount

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Interest Payments

From the Loan Customer's perspective, the following table provides a sample of the periodic interest payments on the swap and underlying loan

	Period 1	Period 2	Period 3	Period 4
Rate Settings				
1m LIBOR Rate	0.20%	1.00%	3.00%	5.00%
1m LIBOR Rate + 2.25%	2.45%	3.25%	5.25%	7.25%
Fixed Swap Rate	4.50%	4.50%	4.50%	4.50%
Loan				
Pays Floating Rate on Loan	2.45%	3.25%	5.25%	7.25%
Swap				
Receives Floating Rate on Swap	2.45%	3.25%	5.25%	7.25%
Pays Fixed Rate on Swap	4.50%	4.50%	4.50%	4.50%
Net Payment Owed	2.05%	1.25%	-0.75%	-2.75%
All-in Fixed Rate	**4.50%**	**4.50%**	**4.50%**	**4.50%**

Benefits

Bank	Loan Customer
▪ Reduce interest rate risk on fixed rate loan opportunities ▪ Generate fee income ▪ Potentially lower funding costs ▪ Create loan growth and enhance market perception by expanding product set ▪ Receive training, marketing, documentation, pricing and operations support ▪ Avoid need for hedge accounting	▪ Potentially lower fixed rate borrowing cost ▪ Customize swap structure to reflect specific loan terms including amount (all or portion) and start date (spot or forward) ▪ Take advantage of any market gains in swap contract through an early termination feature

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Considerations

Bank	Loan Customer
▪ Collateral may be required to support the trading line between the banks ▪ Notional amount of swap would need to be reduced to reflect any prepayment of hedged loan ▪ Cost of any early swap termination could be passed through to loan customer ▪ Maintain responsibility for credit risk on loan and market risk on swap ▪ Capital requirements to support the market value of the swap ▪ Volker Rule impact on policies and procedures	▪ Prepayment of a portion or all of the hedged loan could result in a fee (make-whole language) ▪ Swap documents (ISDA) need to be completed along with loan agreement ▪ Additional net payment is required each period for the swap (auto-debit) ▪ Swap agreement is cross-collateralized with loan ▪ Accounting for swap ▪ Must meet ECP requirements and obtain GMEI number

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Dodd-Frank Requirements

- Verify Eligible Contract Participant (ECP) Status – All counterparties and guarantors to a swap must qualify as an ECP
  - ✓ Swap Dealer Provides ECP Certificate Template
- Verify Commercial End-User Status – Borrowers are entering into the transaction to mitigate commercial risk thereby electing to be exempt from having to clear the OTC derivative
  - ✓ Swap Dealer Provides End User Exception Template
- Obtain Global Markets Entity Identifier (GMEI) – All counterparties must obtain a GMEI Number
  - ✓ Swap Dealer provides information for Bank to provide to borrowers in order to obtain GMEI Number. (Borrowers can obtain a GMEI through gmeiutility.org website)
- Report Swap Details to Swap Data Repository (SDR) – All financial institutions must report their swaps to an SDR
  - ✓ Swap Dealer can report Bank's swaps on behalf of Bank. Swap Dealer will provide DTCC documentation in order to assign Swap Dealer as the third party reporter

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Derivatives

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