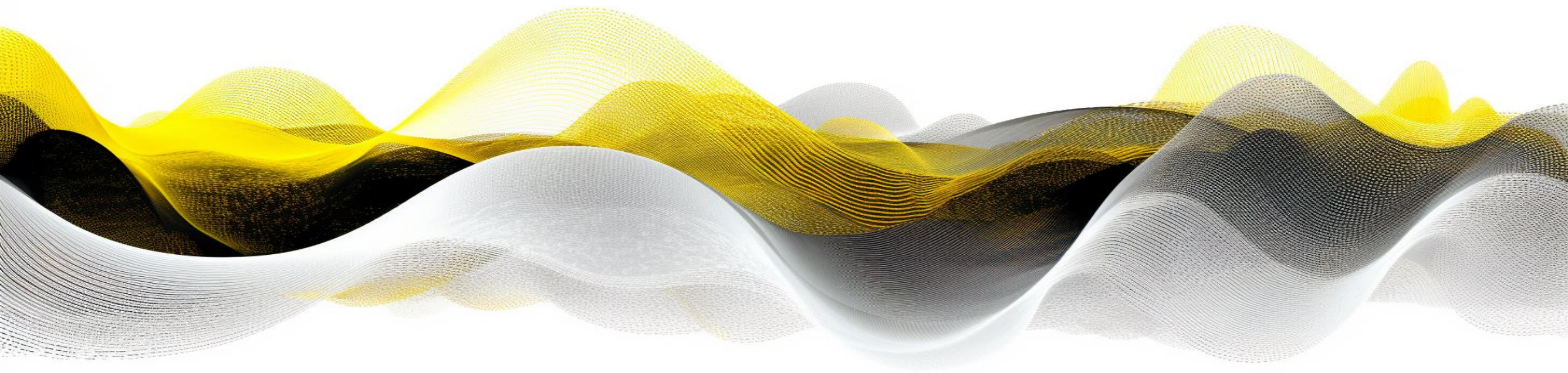




Precision Financial ALM AI

Case Study

Spring 2025



In this document we will use a case study to show how delfi can improve the performance of financial institutions

The value of delfi

delfi transforms the Asset Liability Management (ALM) process into a strategic value-driver through the following two main products

1. **delfi OVERWATCH** runs thousands of **realistic interest rate scenarios** to assess the risk vs. return profile of all balance sheet items and **identify potential underperforming areas** of the bank
1. **delfi PROPHECY** enables optimization of the **balance sheet** by simulating 'what-if' scenarios to maximize performance

What we introduce in this document

We showcase our technology helping a depository institution

- analyze weak points in its depositor franchise
- optimize its deposit beta
- assess a strategy of gaining
- ultimately enhance its performance and value

Contact us



Website: www.delfi.co

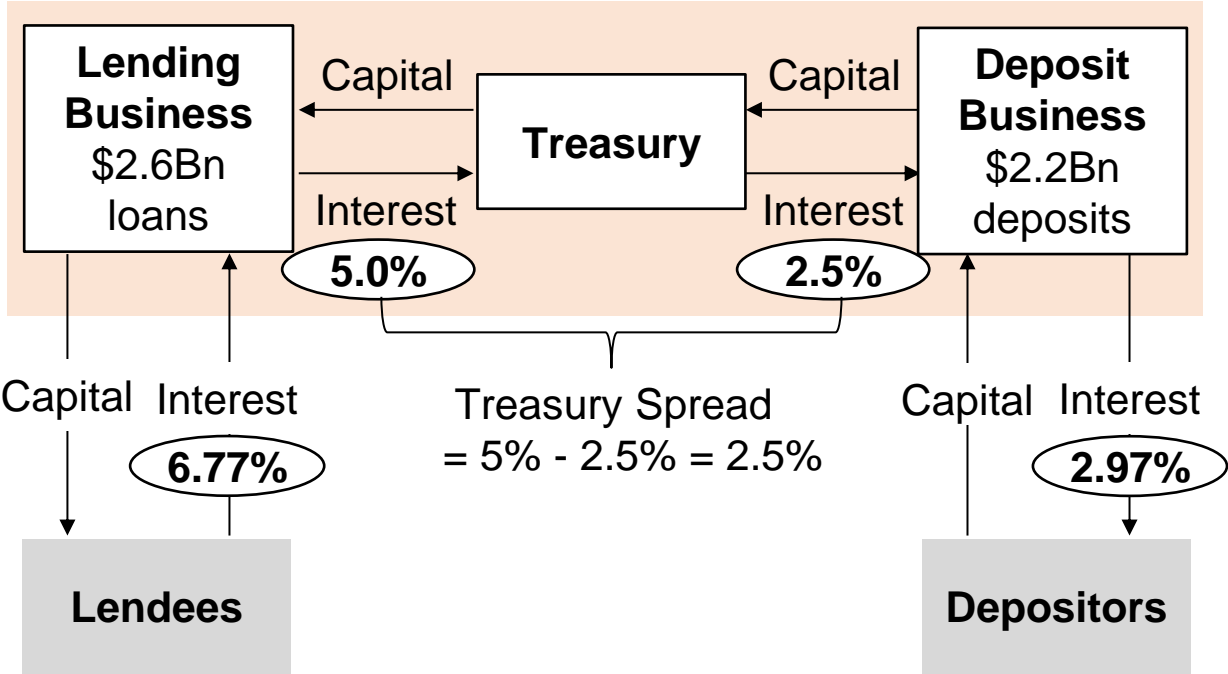


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Client bank's current state: They left loss-making Deposit Business as it is, relying on lower Fed Funds target rates

Client bank Business units Customers Interest rate

Diagram of the client bank's current state



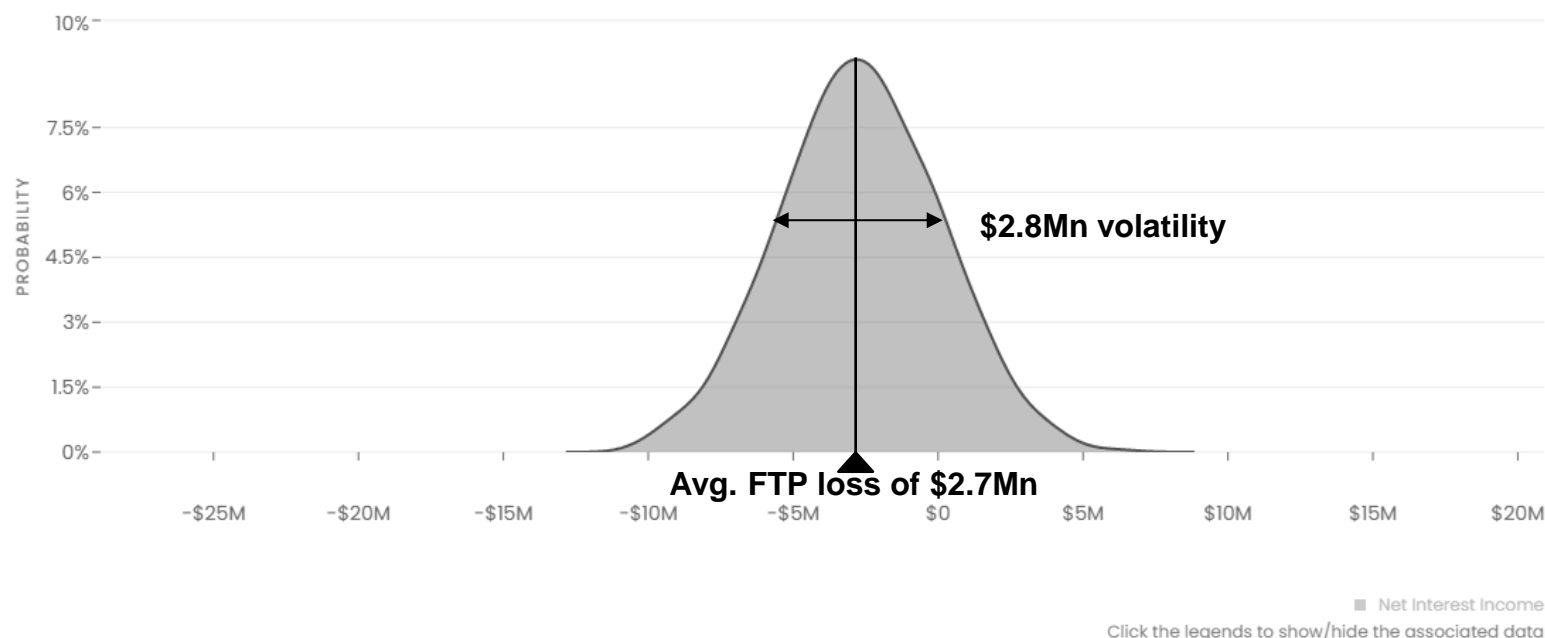
Key points

- Client Bank holds **non-maturing deposits (NMD)** of \$2.2Bn that are **sensitive to interest rates**
- Their legacy NMD savings product has a **high deposit beta** of 54.8% leading to a current **funding cost** of 2.97%, which **is above Client Bank's internal hurdle rate** of 2.5% and, therefore, **generating significant FTP loss** to their Deposit Business
- They were **relying on lower Fed Funds target interest rates** until 2025 which would ultimately reduce the Deposit Business's loss by lowering the underlying driver rates

However, delfi predicted loss even after factoring in the Fed's cut based thousands of realistic rate paths simulation

Probability distribution of gains / losses based on thousands of realistic interest rate paths simulations*

Click on the chart to select a single scenario



delfi OVERWATCH projects an average **loss of -\$2.7Mn** with volatility of \$2.8Mn over 12 months

Realistic interest rate path simulations run by delfi OVERWATCH takes only 30 mins

*Including the possibility of the FED cutting rates further

delfi PROPHECY simulates varying depositor flight levels and cost of funding for optimization

Flow of client actions with delfi



The bank decided to **re-optimize deposit beta** (i.e. sensitivity of the cost of funding to the underlying Effective Federal Funds rate) to manage underperformance

delfi PROPHECY simulates potential impact of setting varying deposit betas, incorporating Client Bank’s forecasts of depositor flight, retention, and attraction

delfi PROPHECY ultimately helps Client Bank **finalize a deposit beta** choice of 41.5%, which **reduces cost of funding** to 2.21% and **maximizes Deposit Business income** over 12 months

Change in each key value according to deposit beta

New Beta	Cost of Funding	Estimated Impact on Deposits	Total Projected Deposit Volume (\$Mn)	Deposit Business Income (\$Mn)
20.00%	1.07%	-37.30%	\$243.03	\$3.98
30.00%	1.60%	-26.60%	\$562.31	\$6.20
40.00%	2.13%	-15.90%	\$1,866.63	\$8.24
41.50%	2.21%	-14.30%	\$1,911.89	\$9.22
50.00%	2.67%	-5.20%	\$2,094.65	\$0.40
60.00%	3.20%	5.50%	\$2,331.48	(\$12.28)
70.00%	3.73%	16.20%	\$2,595.09	(\$27.90)

Simulations demonstrate clear trade-off between reducing cost of funding and driving depositor flight



The deposit beta adjustment has enabled Client Bank to improve performance and reduce volatility

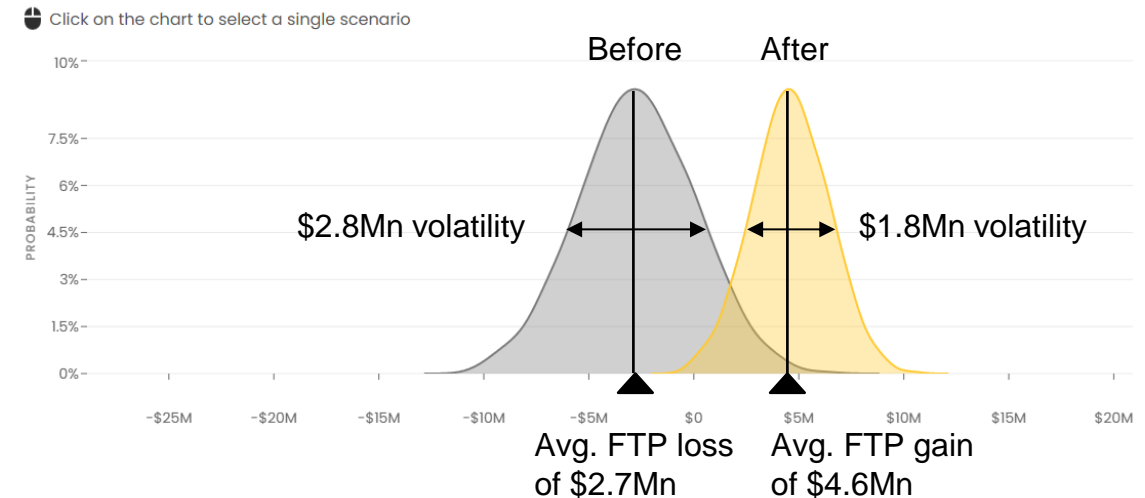
Impact of deposit beta adjustment on Deposit Business performance

ALCO Policy Response: Client Bank lowers NMD expense sensitivity (i.e., deposit beta) from 54.8% to 41.5%

- It **reduces cost of funding** from 2.95% to 2.22%, leading the product to **generate a positive 0.28% FTP margin** (= internal hurdle rate of 2.50% - 2.22%) to the Deposit Business
- However, Client Bank estimates that 14.3% of legacy depositors will exit the product (i.e. **deposits fall from \$2.2Bn to \$1.9Bn**) due to the projected depositor flight due to lower interest payments

Overall, **delfi** PROPHECY projects a new average performance of **+\$4.6Mn gain** with **volatility of \$1.8Mn** over 12 months

Probability distribution of FTP gain/loss based on the new deposit beta

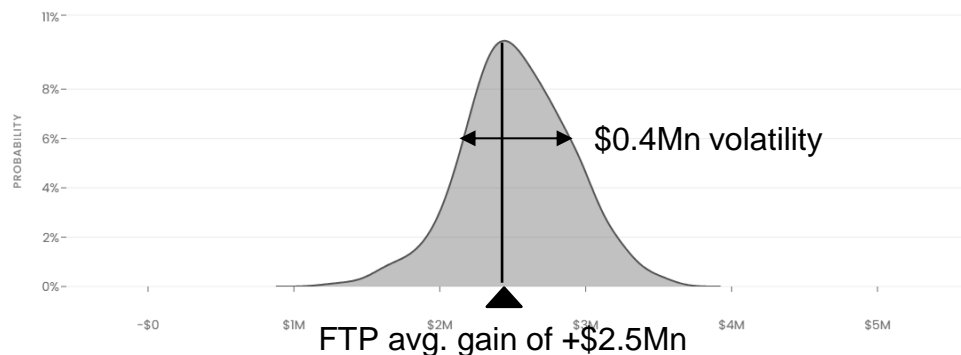


In addition, Brokered Deposit was used to recapitalize the deposit base and fund new C&I Loan

C&I Loan (Lending Business)

- Shortly after the deposit adjustment, the Lending Business brought an attractive **new C&I loan opportunity (\$80Mn)** to the ALCO
- The C&I loan is **linked to Prime Rate** and earns **8.5% interest rate**
- delfi projects an average Lending Business FTP performance of **+\$2.5Mn gain with volatility of \$0.4Mn** over 12 months

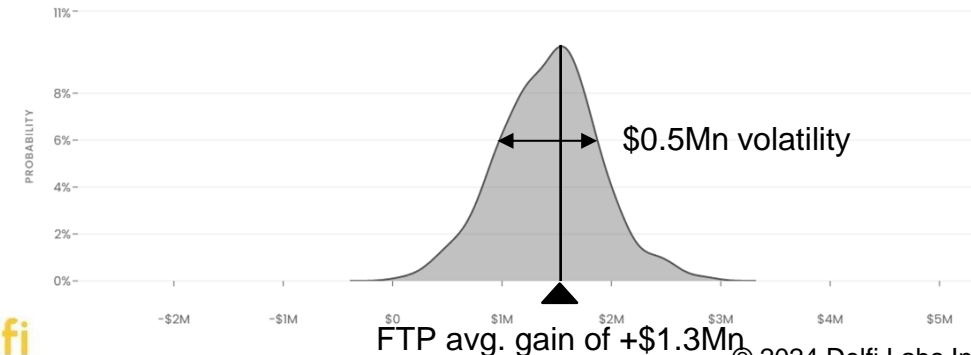
Click on the chart to select a single scenario



Brokered Deposit (Deposit Business)

- In addition, to ensure sufficient liquidity and to compensate for the reduction in funding from depositors (~\$300Mn), Client Bank decided to **accept a brokered deposit of \$400Mn at a starting rate of 2.5%**
- 2.5% is break-even point because it is the same as the FTP hurdle date for the Deposit Business, but with interest rates projected to decrease over 2025, **delfi** calculates an average FTP performance of **+\$1.3Mn gain with volatility of \$0.5Mn** over 12 months (even after fees)

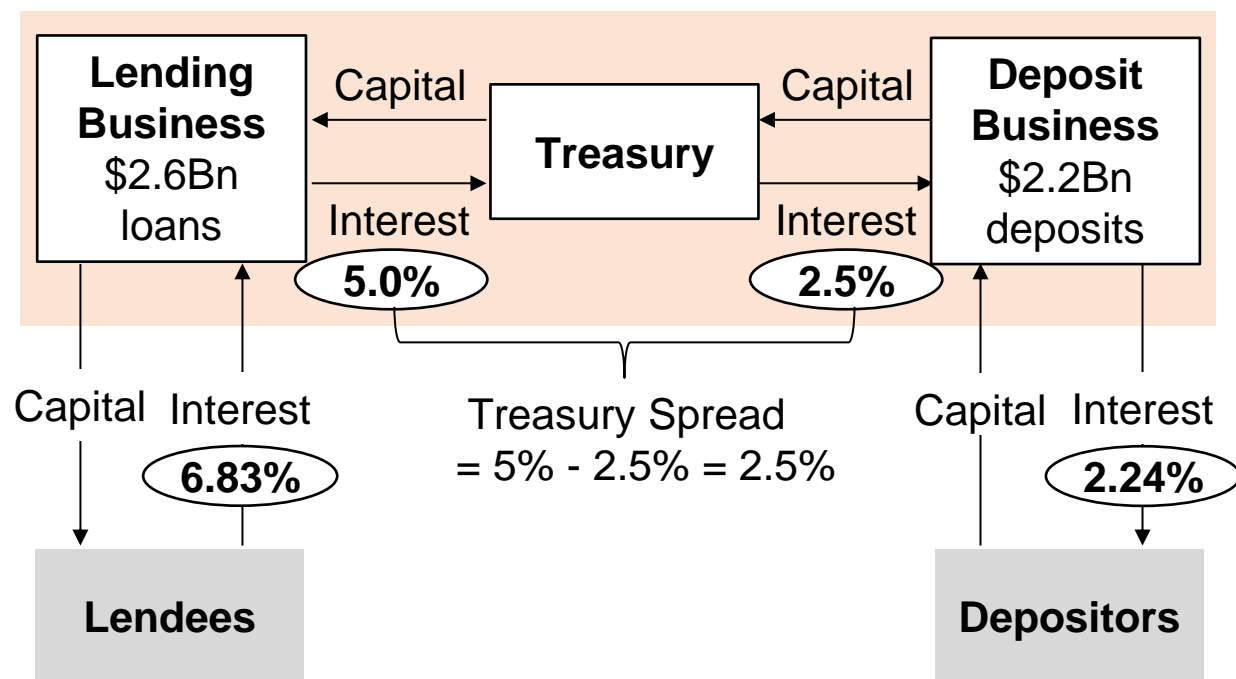
Click on the chart to select a single scenario



Client Bank's future state: They were able to navigate the strategic adjustments but wished to assess overall impact

Client bank Business units Customers Interest rate

Diagram of the client bank's final state



Key points

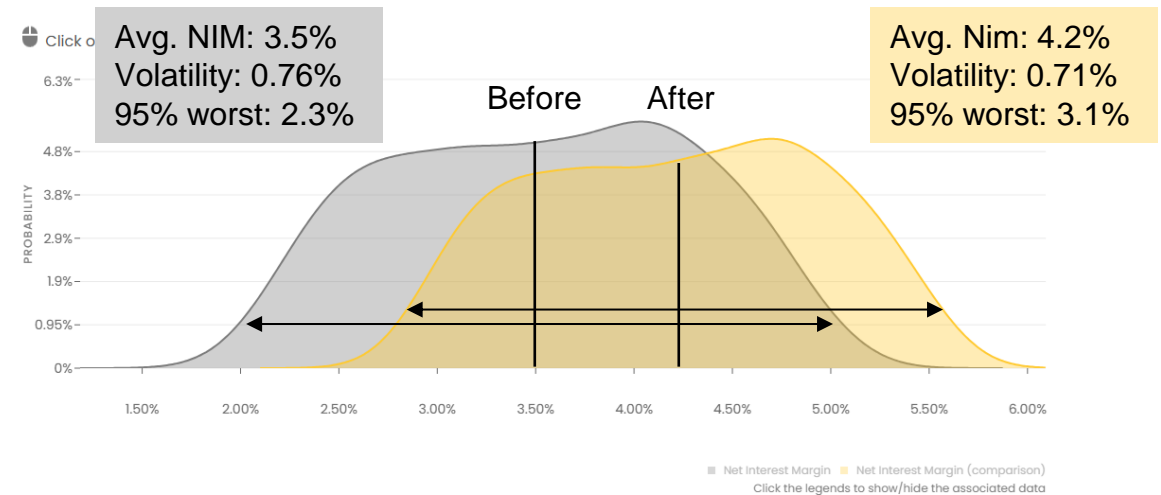
- New \$80Mn C&I loan would **increase Lending Business's overall FTP earning rate** from 6.77% to 6.83% on average
- New beta and brokered deposit would **lower Deposit Business' overall FTP lending cost** from 2.97% to 2.24%
- With **delfi** platforms, **Client Bank was able to navigate this strategic deposit rate adjustments** (and the resulting deposit flight), **and fund a new C&I loan expansion** partially funded by the new brokered deposit
- However, beyond simply assuming a single scenario, the **ALCO also wished to comprehensively assess overall impact on the bank's risk exposure and risk-return profile**

Overall, delfi impact analysis supported a significant increase in profitability and a decrease in volatility

Overall takeaways

- Using **delfi** platforms, Client Bank was **able to assess potential impact** on its performance and risk exposure **within a single working day**
- Overall, combined impact of strategic activity **increased Client Bank's projected Net Interest Income (NII)** over the next 12 months from \$105.5Mn to \$129.3Mn (**\$23.8Mn increase, which is 22.6%**).
- Client Bank's projected average **NIM** rose from 3.5% to 4.2% (**70bp increase**), while the 95% worst case NIM rose from 2.3% to 3.1% (**80bp increase**)

Probability distribution of NIM based on the overall adjustments



Summary: **delfi** can enable real-time decision-making for Strategic ALM, improving performance while reducing risk

In this case study, we demonstrated how **delfi** drove Strategic ALM for bank leadership by helping an ALCO rapidly model FTP impact of potential policy changes in real-time

- **delfi** dramatically **increases speed of decision-making cycle from weeks/months to hours/days**, helping maximize risk-adjusted return of balance sheet
- (Specifically for Client Bank), through detailed simulations, **delfi transformed loss-making legacy product into FTP-profitable deposit business driver**, enabling ALCO to enter strategic C&I growth opportunity that is funded by brokered deposits

As a result, Client Bank enjoyed a **+70bp increase in its projected average NIM while reducing interest rate risk exposure volatility by 5bp**

Contact us



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Appendix

Unique fusion of world-class bankers, data scientists, former U.S. officials, and consultant skillsets



DANIEL P. AHN, Co-Founder, CEO

- **Chief Economist – U.S. Department of State**
- **Chief Economist – North America at BNP Paribas**
- U.S. Federal Reserve, IMF, Citibank, Citadel, Barclays Capital, Council on Foreign Relations, Wilson Center
- Ph.D. Harvard University, Economics



JOSEPH AHN, Co-Founder, CSO & President

- **Chief Data Scientist – The White House**
- **Head of AI Lab – West Monroe Partners**
- Founder of a successful \$40M+ B2B analytics startup
- Ph.D. Harvard Business School, Strategy



WILL LUNDEN, CTO

- **AI, automation, software development, and hardware design at Vector Atomic**
- **Experimental atomic physics – MIT**
- Ph.D. MIT, Physics



ALEXANDER DEMYANETS, Chief Economist

- **Senior Economist – U.S. Treasury, Bank of England**
- **Executive Director – Goldman Sachs**
- Ph.D. Johns Hopkins University (& Wharton), Economics and Finance



TOMOYA NISHIDA, Head of Operations

- **Engagement Manager – McKinsey & Company**
- **Finance Manager – Mitsubishi Corporation**
- MBA London Business School, Finance



BREN CAVALLO, Senior Machine Learning Engineer

- **Research Data Scientist – Meta**
- Ph.D. CUNY, Mathematics

Delfi is advised by the world's leading authorities on markets, policy, and regulation



THE HONORABLE DAVID VITTER
BANKING, SMALL BUSINESS, PUBLIC POLICY

- **Former U.S. Senator from Louisiana (2005-2017)**
- Former Ranking Member of the Senate Banking Committee
- Former Chair of the Senate Committee on Small Businesses and Entrepreneurship



MAURIZIO ALFANO
TRADING, MARKET STRUCTURE

- **Former Global Head of Trading, Moore Capital**
- Formerly at Barclays Capital, Maven Capital Management



WILLEM BUITER, PH.D.
ECONOMICS, BANKING

- **Former Global Chief Economist at Citigroup**
- Former Chief Economist at the European Bank for Reconstruction and Development, Professor at Yale University



BARBARA MACE, PH.D.
TAXATION, FINANCE

- **Former Principal at DLA Piper law firm**
- Former Principal for Taxes, Transfer Pricing, Financial Services at Ernst & Young, Deloitte