

# *When Cash Isn't King:* Driving Deposit Value in a World of Excess Liquidity



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# *Section 1*

Point of view

## Point of view

Deposits traditionally provided a core source of bank franchise value, but oversized cash portfolios are pressuring margins, and paradoxically heightening liquidity risk concerns.

**Rising deposit levels—a boon to the banking industry following the financial crisis—have become a major challenge.** The ability to generate long-lived, low-cost deposits is traditionally one of the most important components of bank franchise value. However, a perfect storm of industry conditions—an expanded money supply, customer delevering, weak loan growth, near-zero rates and regulatory developments—have upended the virtuous cycle of deposit gathering and lending. Many North American banks—seeking to enhance profitability and uncertain of the stability of these recent liquidity inflows—are actively seeking to stem the growth or even work down their deposit balances.

### Deposit Value Under Pressure

Rising Deposits	Falling NIM	Regulatory Threats	
<ul style="list-style-type: none"><li>▪ Liquidity build up due to weak economic conditions and heightened risk aversion</li><li>▪ Money market mutual fund challenges</li><li>▪ Unlimited FDIC guarantee* of deposit balances</li><li>▪ Attractiveness of earnings credit rates for corporate customers</li></ul>	<ul style="list-style-type: none"><li>▪ Weak loan growth</li><li>▪ Limited pricing tactics available in a near-zero rate environment</li><li>▪ Regulation Q* repeal a potential margin threat for small business portfolios</li></ul>	<ul style="list-style-type: none"><li>▪ Recent regulatory changes (Reg E, Durbin)* reduced fee generation associated with consumer deposit accounts</li><li>▪ Basel III liquidity standards* expected to require costly cash buffers to support deposits</li><li>▪ Expiration of FDIC unlimited guarantee* at the end of 2012 creates uncertainty</li><li>▪ Retail ring-fencing (UK)* aims at eliminating implicit government support of wholesale deposits</li></ul>	<p><b><i>“One of the things that is happening today, we’re not getting recognized or paid for the wonderful deposit franchise we have.”</i></b></p> <p><b><i>—CEO of a Top 5 US Bank (October 2011)</i></b></p>

\*Recent regulatory developments affecting deposit accounts include: the required unlimited guarantee of noninterest bearing deposit accounts included in Dodd-Frank; the repeal of Regulation Q, included in Dodd-Frank, which prohibited the payment of interest on business transaction accounts; requirement by the Federal Reserve that consumers opt in to certain overdraft services pursuant to Regulation E; reduction of debit card interchange fees required by the Durbin Amendment to Dodd-Frank; and the liquidity standards included in the Basel III International Framework for Liquidity Risk Measurement, Standards, and Monitoring; recommendations of the Independent Commission on Banking (UK), September 2011.

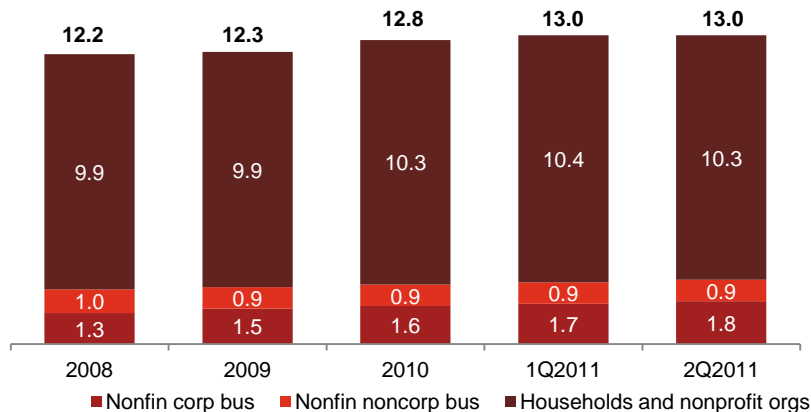
## Point of view

Liquidity expanded rapidly following the financial crisis of 2008, driven primarily by a build-up of corporate deposit balances—raising concerns for bank treasurers.

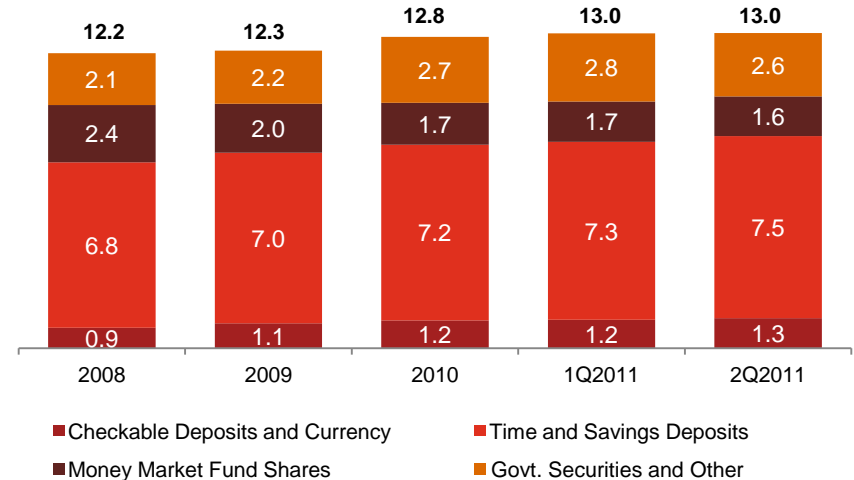
Private sector liquidity, excluding financial institutions, reached a record \$13 trillion in 2011, an increase of \$800 billion since 2008. Of equal importance for the U.S. banking industry, the composition of this liquidity changed significantly, resulting in a growing concern among bank treasurers that ballooning, potentially volatile corporate deposits posed significant runoff risk for their institutions.

- The majority of the growth—\$500 billion—stemmed from a 38% increase in corporate deposits, as businesses increased liquidity cash buffers and deferred real asset investments due to weak economic conditions.
- Bank deposits and currency grew even more rapidly—by \$1.2 trillion—driven by a decline in money market fund balances in nonfinancial business, household, and nonprofit sectors. Money funds—at a competitive disadvantage relative to bank deposits due to extremely low rates, the unlimited FDIC guarantee, and attractive earnings credit rates offered on business accounts—declined \$800 billion.

Private Sector Non-financial Liquidity by Sector (\$bn)



Private Sector Non-financial Liquidity by Instrument (\$bn)

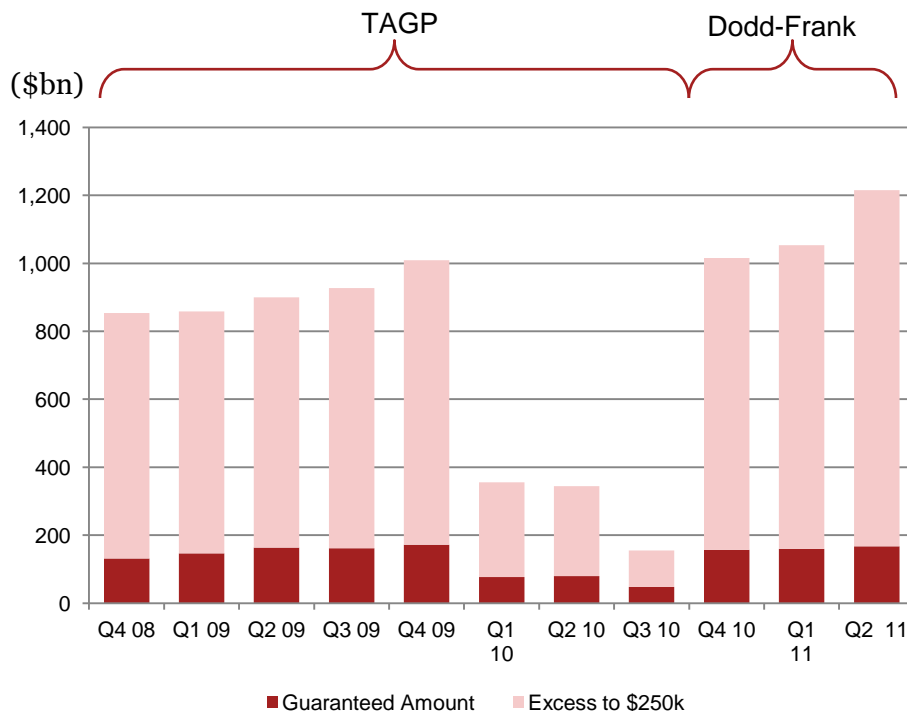


Source: Federal Reserve Flow of Funds Accounts of the United States

## Point of view

An additional concern stems from the expiration of the unlimited FDIC guarantee at the end of 2012 and the resulting disintermediation risk associated with these balances.

### Balances Covered by Unlimited FDIC Programs, 2008-Present



Source: FDIC

### Transaction Account Guarantee Program (TAGP):

Fearing a run on bank deposits, the FDIC instituted this program in 2008 during the financial crisis. The program provided an unlimited guarantee of non-interest-bearing transaction deposits. The program became optional as of 1/1/2010, and the majority of large banks opted out during 2010.

### Dodd-Frank:

The 2010 financial regulation and reform bill included a deposit insurance provision, specifying that during 2011 and 2012, the FDIC must guarantee all non-interest-bearing balances. Banks are not permitted to opt out of the guarantee provisions.

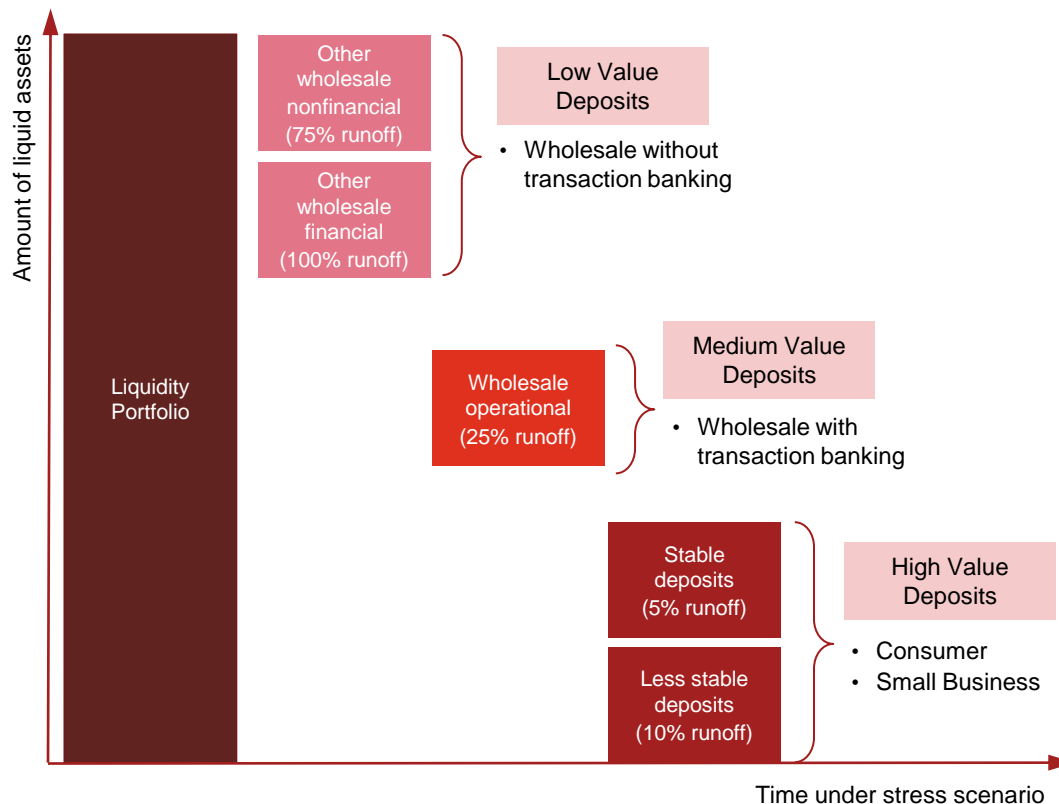
### Expiration:

The Dodd-Frank unlimited guarantee provision expires 12/31/2012. Whether Congress will pass legislation to extend the guarantee, or whether the FDIC will establish a replacement program, is uncertain. The \$1.2 billion guaranteed by the program as of Q2 2011 could lose FDIC protection, causing investors to consider alternative “risk-free” investments such as government securities.

## Point of view

The Basel III liquidity standards will require costly cash buffers to support possible deposit runoff—though the impact will vary by customer and account type.

The Basel III liquidity standards include pre-defined runoff factors for various categories of deposits. Deposit types with higher runoff assumptions will increase the required liquidity of the bank and therefore be less profitable.



## Liquidity Coverage Ratio

Under the Liquidity Coverage Ratio standard banks must maintain liquid assets to offset loss of funding for 30 days under a stress scenario. Each dollar of assumed runoff requires an offsetting dollar of liquid asset buffer.

## Net Stable Funding Ratio

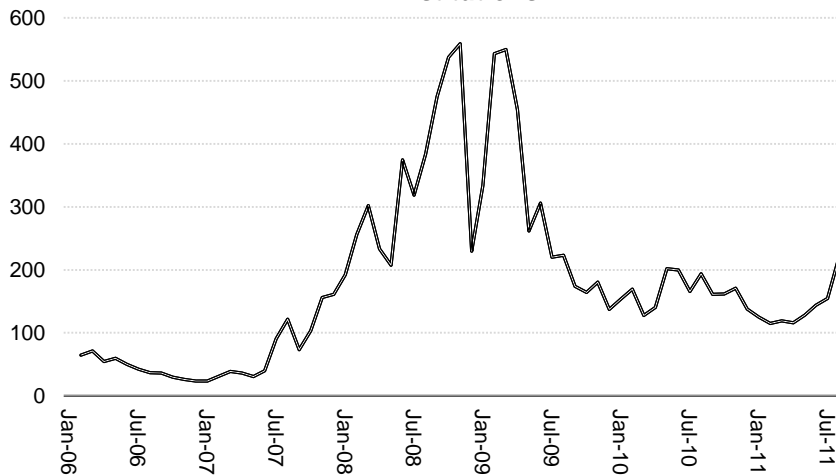
Under the Net Stable Funding Ratio standard, deposits assumed to run off during a one-year stress scenario do not provide stable funding and will have to be held in liquidity rather than deployed to longer-term assets requiring stable funding.

## Point of view

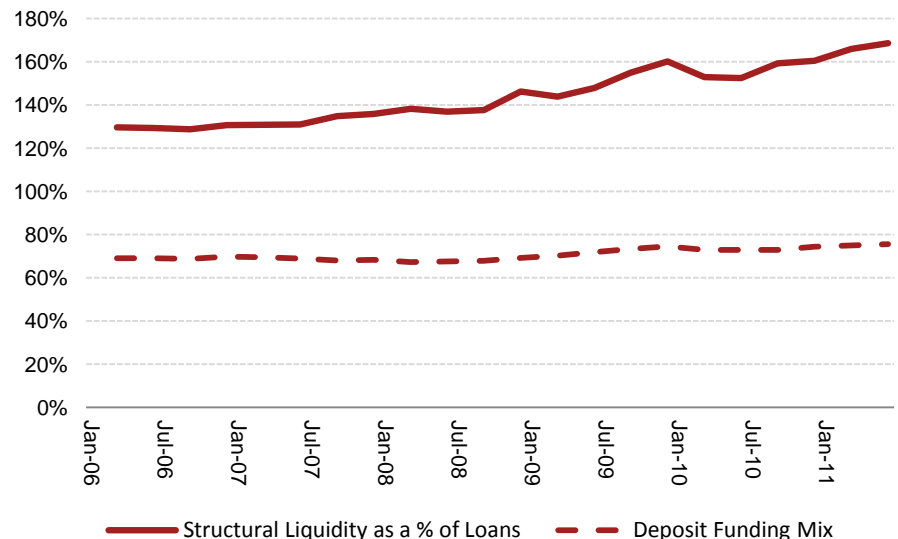
Despite the challenges surrounding deposits in the current environment, their importance for bank funding following the financial crisis remains high.

- As evidenced in credit default swap (CDS) spreads, perception among capital markets participants is that the risk profile of banks remains elevated following the financial crisis. This heightened risk negatively impacts wholesale borrowing conditions and improves the relative attractiveness of deposit funding.
- Bank liquidity has grown rapidly since the financial crisis, supported in large part by deposit growth. The *liquidity life* of deposit portfolios will be critically important when loan growth returns to normal levels and banks seek to maintain a strong liquidity profile while redeploying deposits to longer-duration assets.

Average CDS Spreads of Selected Large Financial Institutions



Structural Liquidity<sup>1</sup> and Deposit Funding Mix<sup>2</sup> of Top 25 U.S. Banks



<sup>1</sup>Structural liquidity is total deposits plus long-term debt plus total equity

<sup>2</sup>Deposit funding is total deposits as a percent of total liabilities Source: FDIC



## Point of view

In this environment, banks need to employ analytics to more precisely differentiate and target specific deposit types supporting balance sheet and margin objectives.

**Successful differentiation strategies leverage an in-depth understanding of customer deposit behavior**

**Balance sheet optimization:** Establish a more precise deposit analysis framework to optimize asset-liability management and drive targeted deposit gathering that supports balance sheet objectives

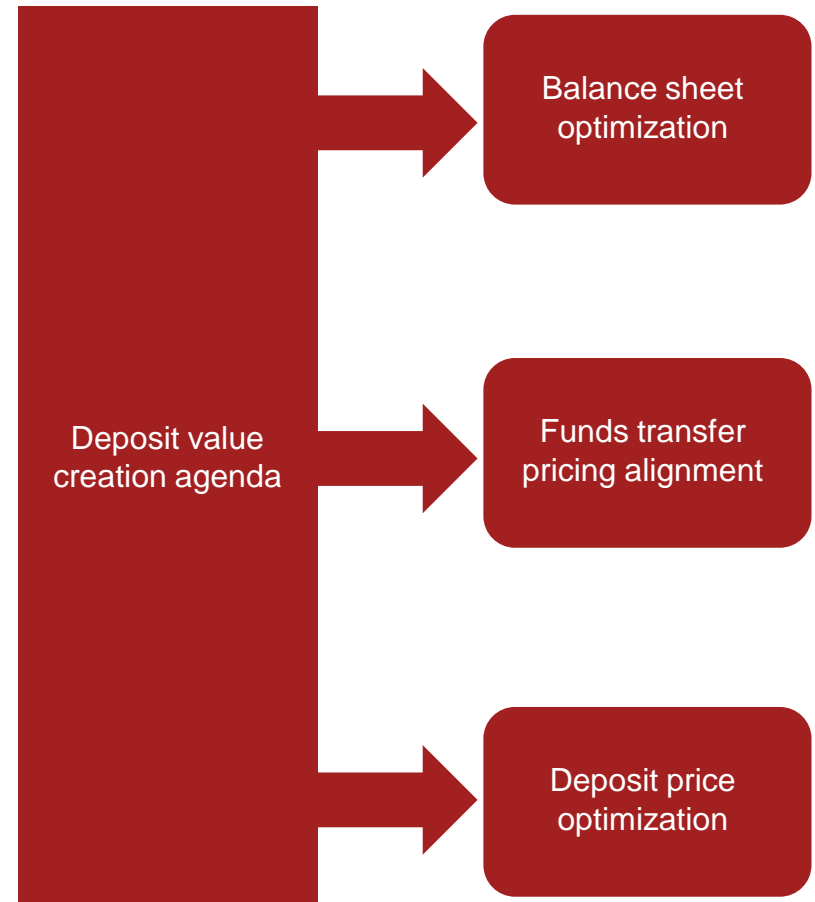
These frameworks will differentiate between stressed and non-stressed behaviors, as well as more precisely capturing differences between specific customer types.

**Funds transfer pricing alignment:** Overhaul funds transfer pricing frameworks to more explicitly and precisely capture the liquidity characteristics of deposits

These improved frameworks will drive better alignment between treasury and business line objectives, enhancing governance and deposit gathering.

**Deposit price optimization:** Adopt advanced deposit pricing methodologies designed to closely match deposit rates to customer price sensitivity

Analytic pricing drives spread revenue growth across institutional and mass segments utilizing advanced statistical techniques.



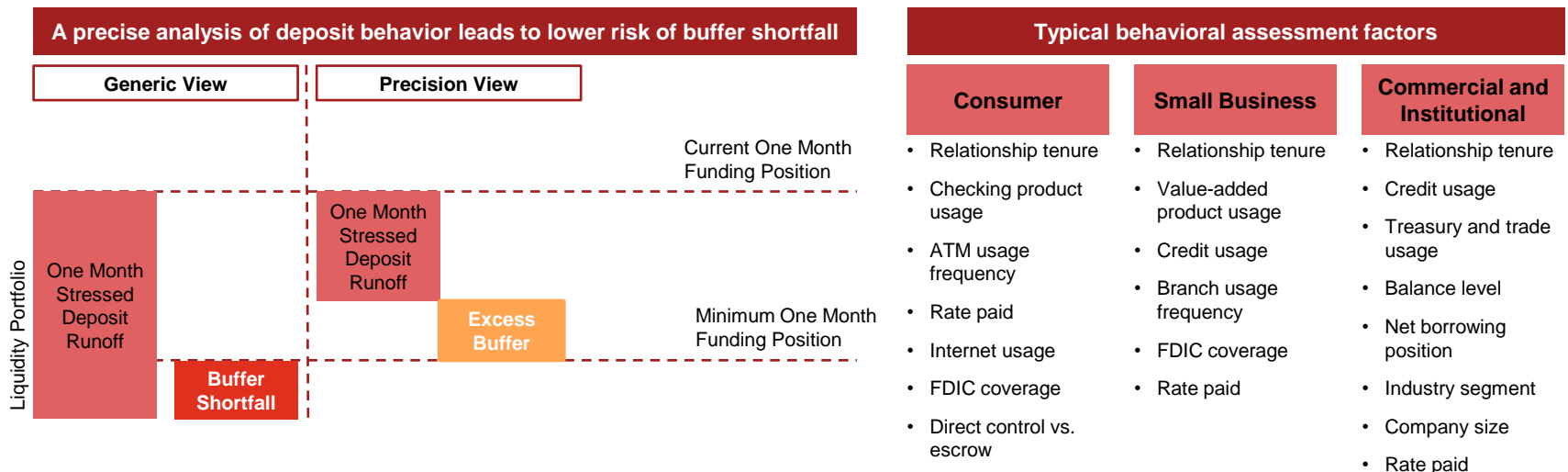
**Each of these aspects is discussed in greater detail in the remainder of this section**

## Point of view

Developing a more precise runoff profile of the deposit portfolio improves the effectiveness—and potentially reduces the cost—of liquidity risk management.

**Deposit liquidity risk is largely due to unexpected runoff. Runoff behavior of deposit accounts varies significantly depending upon a host of channel, market segment, and even individual customer factors. A behavioral assessment focusing on these factors enables more accurate runoff expectations.**

- Banks should assess behaviors that correlate to runoff likelihood, even under stressed scenarios. Relationship tenure, cash management practices, and usage of non-deposit products such as credit and transaction services are among the most important factors to consider.
- Generic assumptions concerning broad customer segments are likely to be inaccurate. For example, internet-based customers may respond more quickly in a crisis than institutional clients with large transactional cash balances.
- Overstatement of deposit runoff risk results in excess liquidity buffers and exacerbates asset-liability mismatch, thereby reducing the earnings potential of the balance sheet. New regulatory requirements such as Basel III liquidity standards will further heighten the buffer cost associated with overly-conservative deposit life assumptions.



## Point of view

Leveraging a more precise understanding of runoff risk and rate sensitivity enables development of deposit gathering strategies that support balance sheet objectives.

Deeper customer segmentation enables not only a more in-depth view of the current portfolio, but also provides insights into which specific types of customer are the most attractive and should be targeted for priority investment. For example, leading banks are investing in creating differentiated customer experiences for targeted relationship tiers.<sup>1</sup>

### Illustrative Deposit Behavioral Segmentation

Deposit  
Attrition Risk

#### Transactional Solution Users

- Non-rate sensitive customers ready to switch due to other factors such as fees, credit, relationship strength, and product feature/function
- Example: Small-balance consumer
- Illustrative Strategy: Enhance margin by reducing rates on lower balance tiers

#### Transactional Investors

- Rate shoppers with minimal relationship strength
- Example: High-balance small businesses in low customer tiers
- Illustrative Strategy: Target such customers at competitors via premium-rate bundle. Enhance profitability and relationship strength through cross-sell.

#### Relationship Solution Users

- Strong relationships with low rate sensitivity
- Example: Private wealth brokerage
- Illustrative Strategy: Cost effectively enhance relationship strength through high-touch virtual banking

#### Relationship Investors

- High deposit retention rate when offered competitive pricing - existing bank wins the ties
- Example: Large corporate transaction banking
- Illustrative Strategy: Targeted relationship-based pricing, supported by customer –level analytics

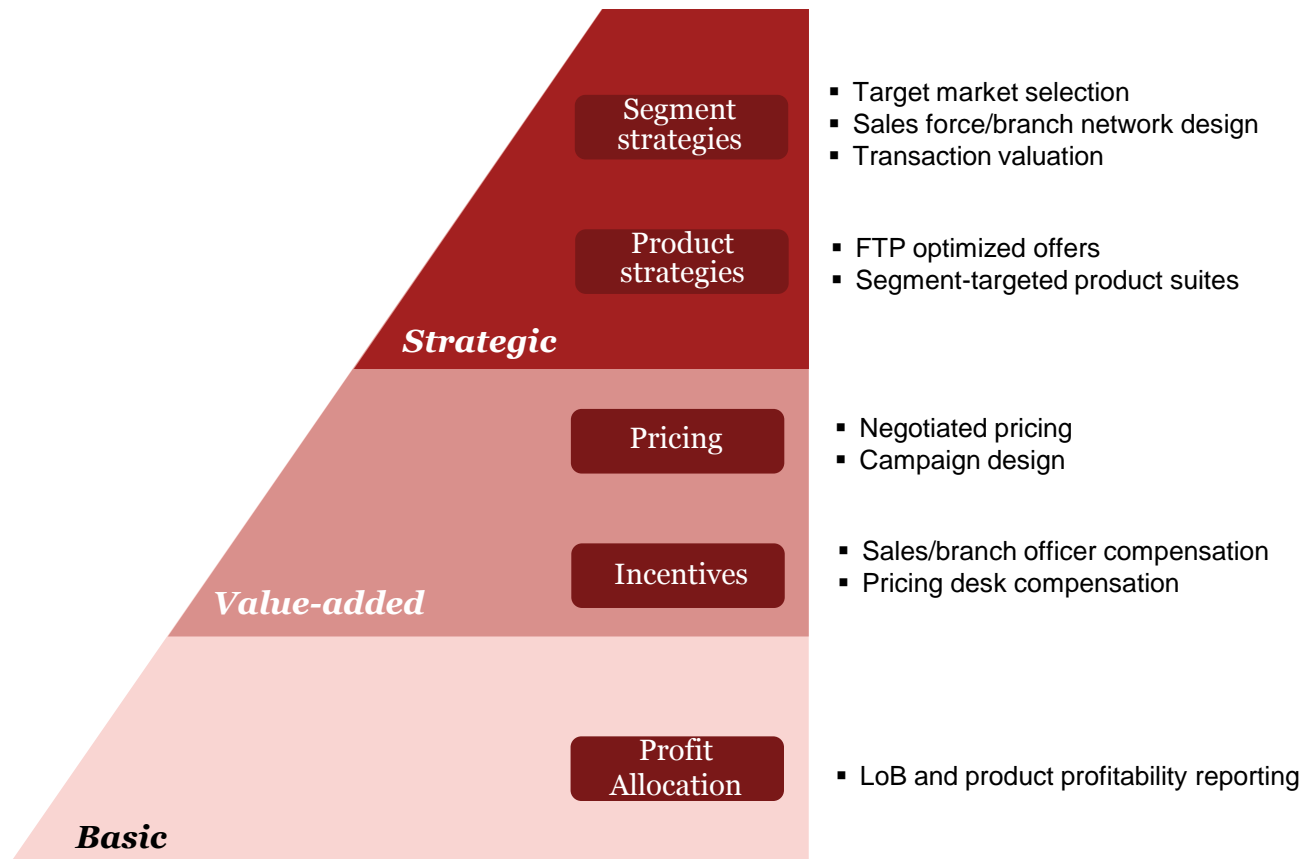
Rate Sensitivity

## Point of view

The FTP framework provides the critical strategic linkage between balance sheet objectives, line of business governance, and field activities.

As banks develop more advanced FTP capabilities, they are able to utilize the framework to drive value-added and strategic activities that reach beyond simply allocating interest margin between asset and liability business lines. In order to deliver strategic results, the FTP framework will need to become increasingly granular.

### FTP Hierarchy of Objectives



### Required Segmentation

- Customer: behavioral attributes
- Company size sub-segments and verticals
- Region
- Product
- Line of business

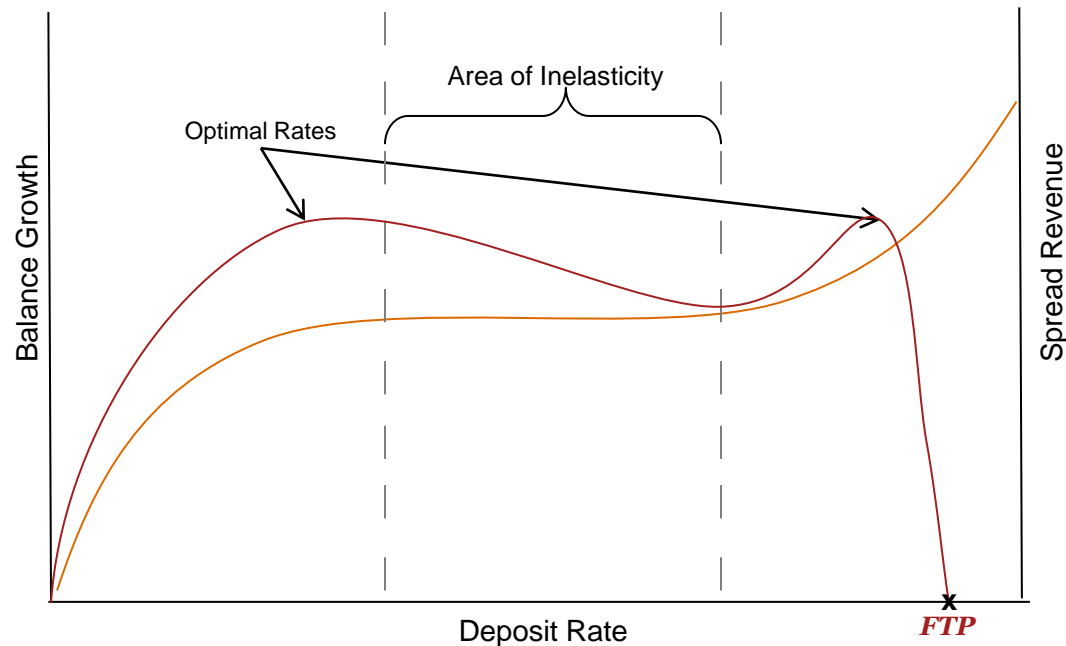
## Point of view

At the business line level, deposit pricing should optimize margin revenue by linking rates to customer sensitivity.

**Customer rate-sensitivity is typically non-linear, i.e., evidencing significant willingness to move money at very high or very low rates, but inertia at rates within an area of inelasticity close to competing rates**

- Two pricing strategies optimize spread revenue: i) setting a rate just below the area of inelasticity to optimize margin; and ii) setting a rate well above the area of inelasticity to optimize balance generation. Rates close to competitors are typically sub-optimal.
- The bank's deposit portfolio is likely to contain a range of rate sensitivities depending on factors such as product, new versus existing money, customer relationship depth, market competitive conditions, and industry. Segmented deposit products and precision rate plays are most likely to optimize portfolio spread revenue.

### Illustrative Deposit Price Elasticity of Demand Curve

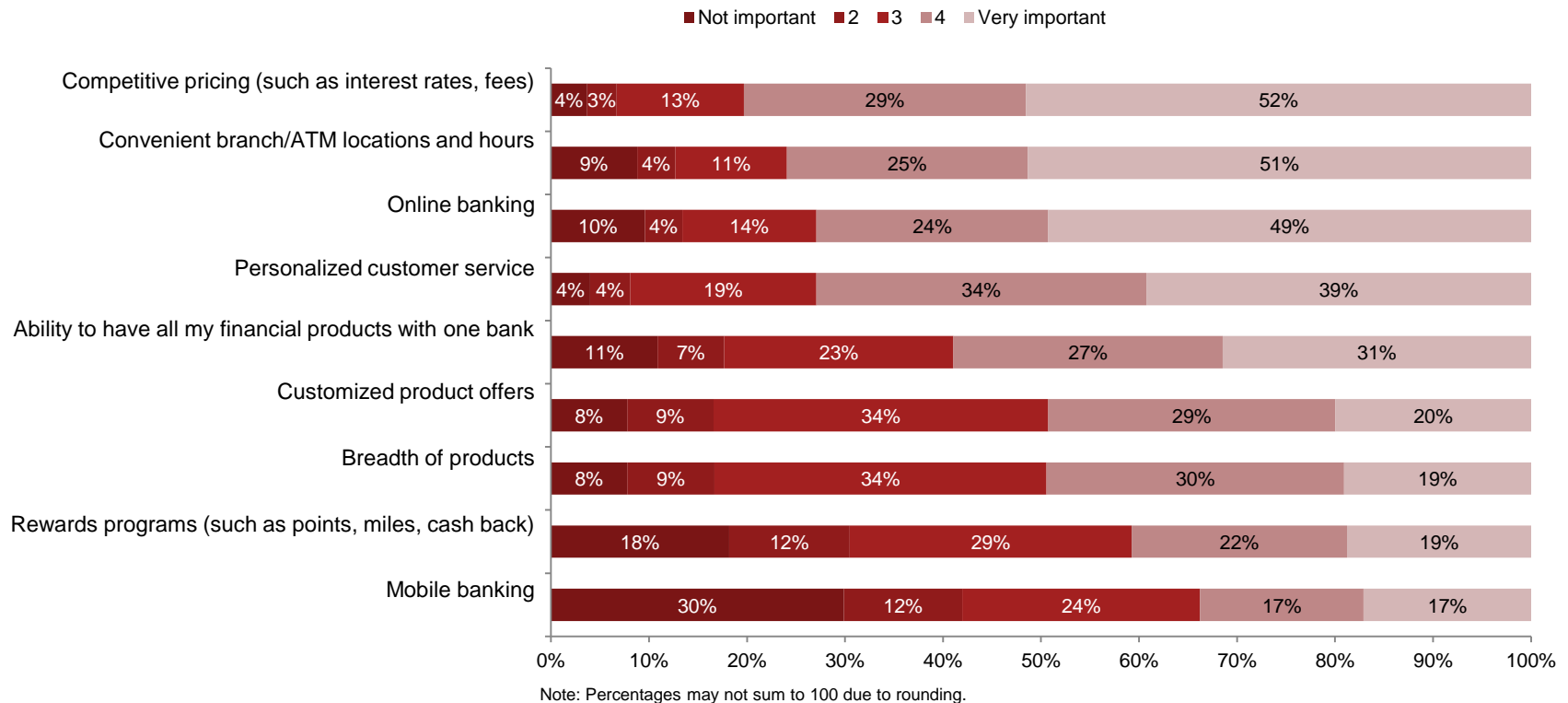


## Point of view

Factors such as ATM convenience and online functionality are on a par with pricing, suggesting opportunities to gain leverage through differentiated capabilities.

### Question: Please rate the importance of the following bank features.

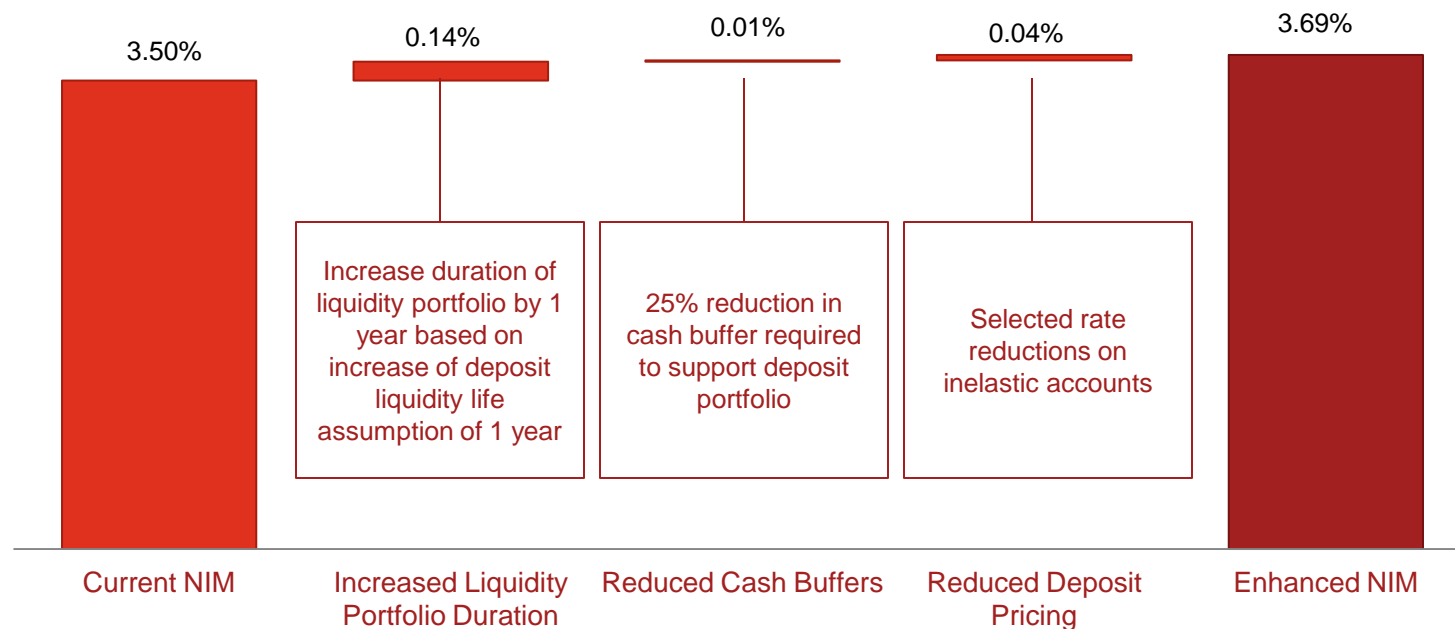
\*PwC's FS Viewpoint, *Getting to Know You*, April 2011.



## *Point of view*

Strategies based on an in-depth analysis of the deposit portfolio yield significant and measurable economic benefits.

### *Improvement in Net Interest Margin through Deposit Enhancements (Illustrative)*



### *Actual results will vary, depending on several factors such as:*

- Interest rate environment
- Current bank funding position
- Revised deposit liquidity life versus current assumptions
- Historical deposit pricing practices

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## ***Section 2***

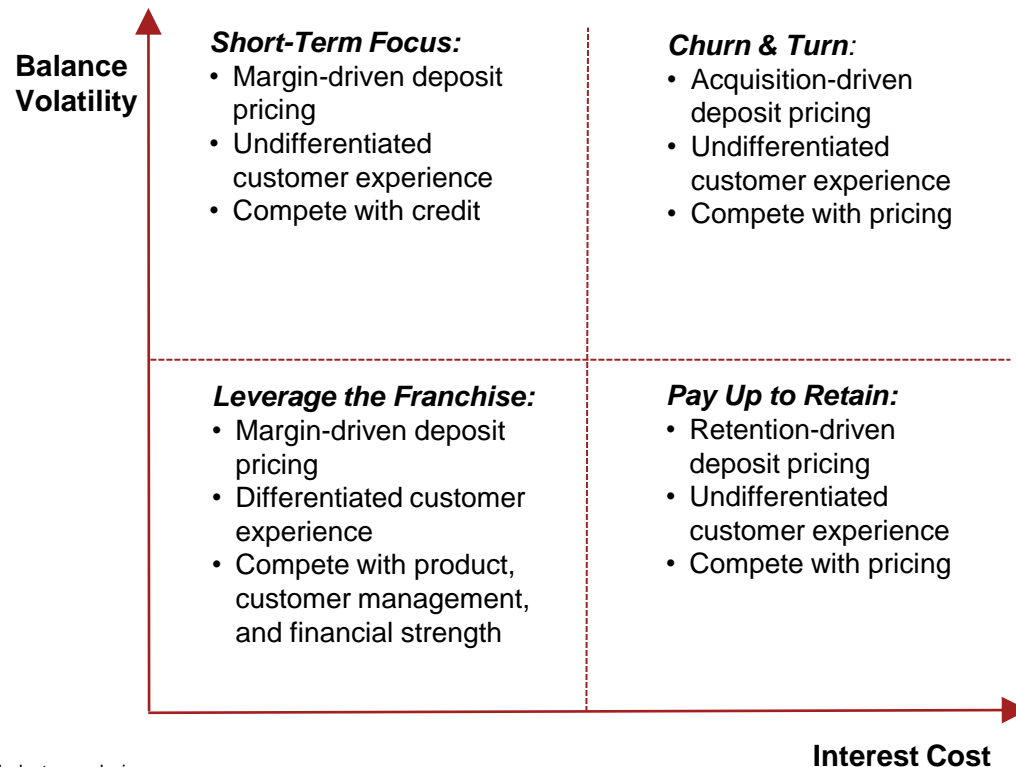
# Competitive intelligence



## Competitive intelligence

Banks leveraging strong franchises can maintain stable, low-cost deposits, while less differentiated banks have to fashion trade-off strategies.

### Deposit Risk/Return Tradeoff: Basic Strategies

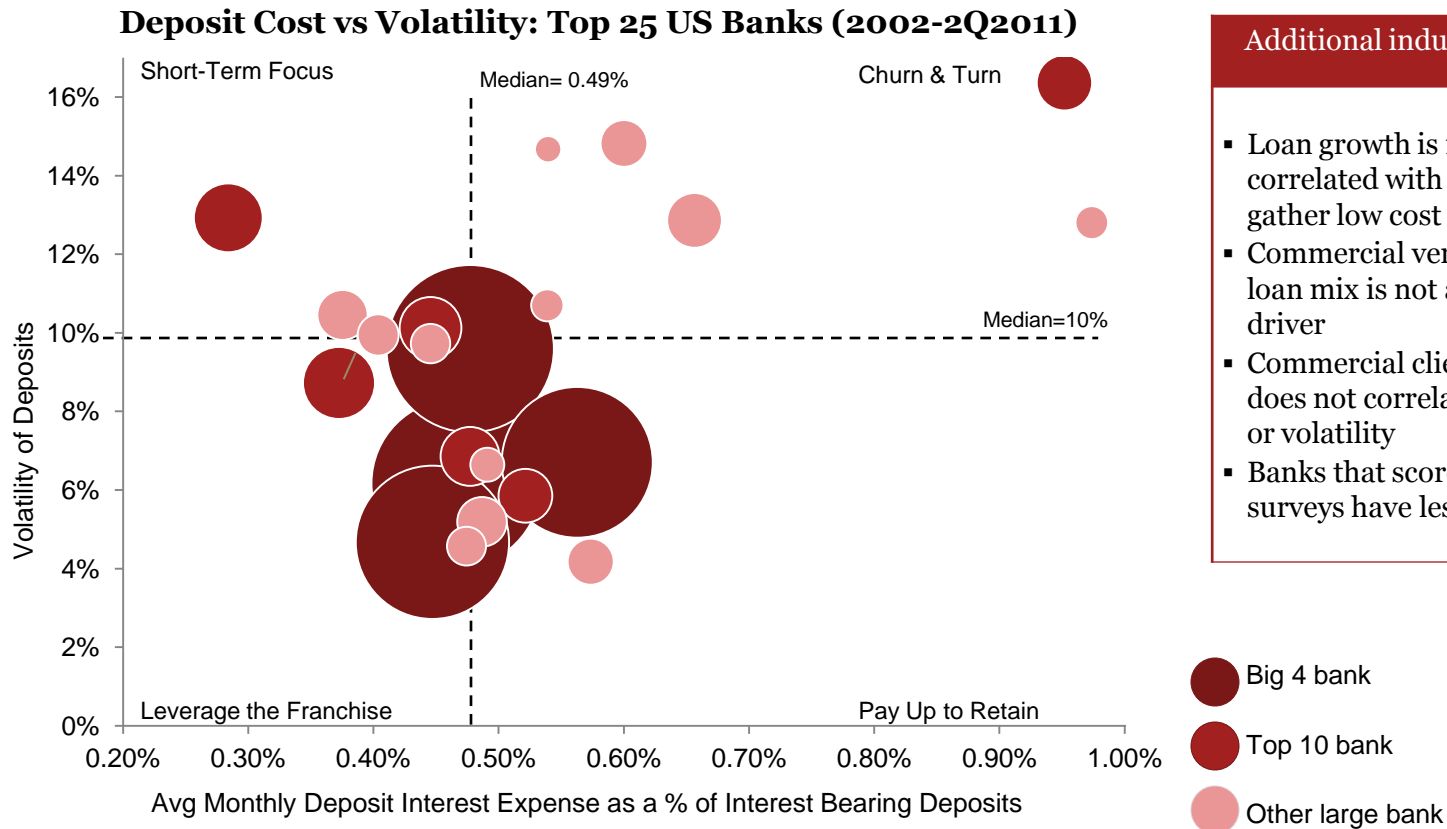


#### Industry Observations

- The success of the largest banks in maintaining low volatility, low-cost deposits indicates that national banking capabilities (leading products, branch coverage) are most advantageous.
- The largest banks have also maintained stable deposit portfolios despite a higher indexing of institutional customers, suggesting that wholesale segments offer an attractive venue for gathering sticky deposits.
- The higher rate profile of several banks indicates potential opportunities to optimize pricing at those institutions.

## Competitive intelligence

The largest banks leverage strong product capabilities and network breadth to achieve lower deposit volatility and interest cost.



### Additional industry observations

- Loan growth is inversely correlated with the ability to gather low cost deposits.
- Commercial versus consumer loan mix is not a performance driver
- Commercial client satisfaction does not correlate with lower cost or volatility
- Banks that score well in consumer surveys have less volatile deposits.

Note: Volatility of Deposits defined as seasonally and trend adjusted coefficient of variation of monthly total deposit balances. Results adjusted for acquisitions of Merrill Lynch, National City, WaMu, and Wachovia. Source FDIC.

## Competitive intelligence

### What we observe in the industry—Deposit management

#### Case studies of large North American and European commercial banks

##### Balance sheet optimization:

Utilizes customer and account-level analytics to precisely measure liquidity life, employing highly granular segmentation

- Liquidity life is measured based on customer segment, industry, country, and product utilizing stressed (to set buffers) and non-stressed (to set durations) attrition models. Models are updated annually. ●
- Liquidity requirements are established based on multiple stress scenarios and liquidity metrics. Deposit run-off assumptions fall into three tiers based on product and business segment. ▲
- A general runoff assumption is used for deposit liquidity life, in sizing the liquidity reserve, distinguishing only between insured and uninsured balances. ■

##### Funds transfer pricing:

Required cash buffers explicitly captured in FTP based on segmented behavioral life analysis. Duration and interest sensitivity also modeled based on in-depth segmentation

- Assigns deposit duration based on historical attrition behavior across products, customer size, industry vertical, and other behavioral attributes. Partial segmentation is captured in standard FTP schedule while more advanced segmentation is reflected in deal pricing. ●
- Business as usual behavioral life modeling drives duration assumptions for FTP purposes. Stressed runoff modeling drives determination of required liquidity buffer and buffer charges included in FTP. Segmentation includes business segment and region. ●
- Liquidity attributes are captured through liquidity term premiums. FTP components are applied based on assumed mix of core versus volatile balances and non-stressed duration. ▲

##### Deposit price optimization:

Building pricing strategies and tactics based on modeled price elasticity curves that precisely quantify the rate-volume relationship.

- Analytic pricing group utilizes product, region, and segment-level pricing curves to set rates. Advanced methodologies are also used to determine customer reference rates. ●
- Retail deposit rates are set by product, segment, and region based on regular review of competitive rates and balance/margin objectives. Commercial rates are set based on FTP and/or changes in wholesale rates. ▲
- Rates are set by product, but not differentiated regionally. Rates based on FTP and/or changes in wholesale rates. Rate positioning is generally low and balance growth lags peers. ▲

● Leading ▲ On par ■ Lagging

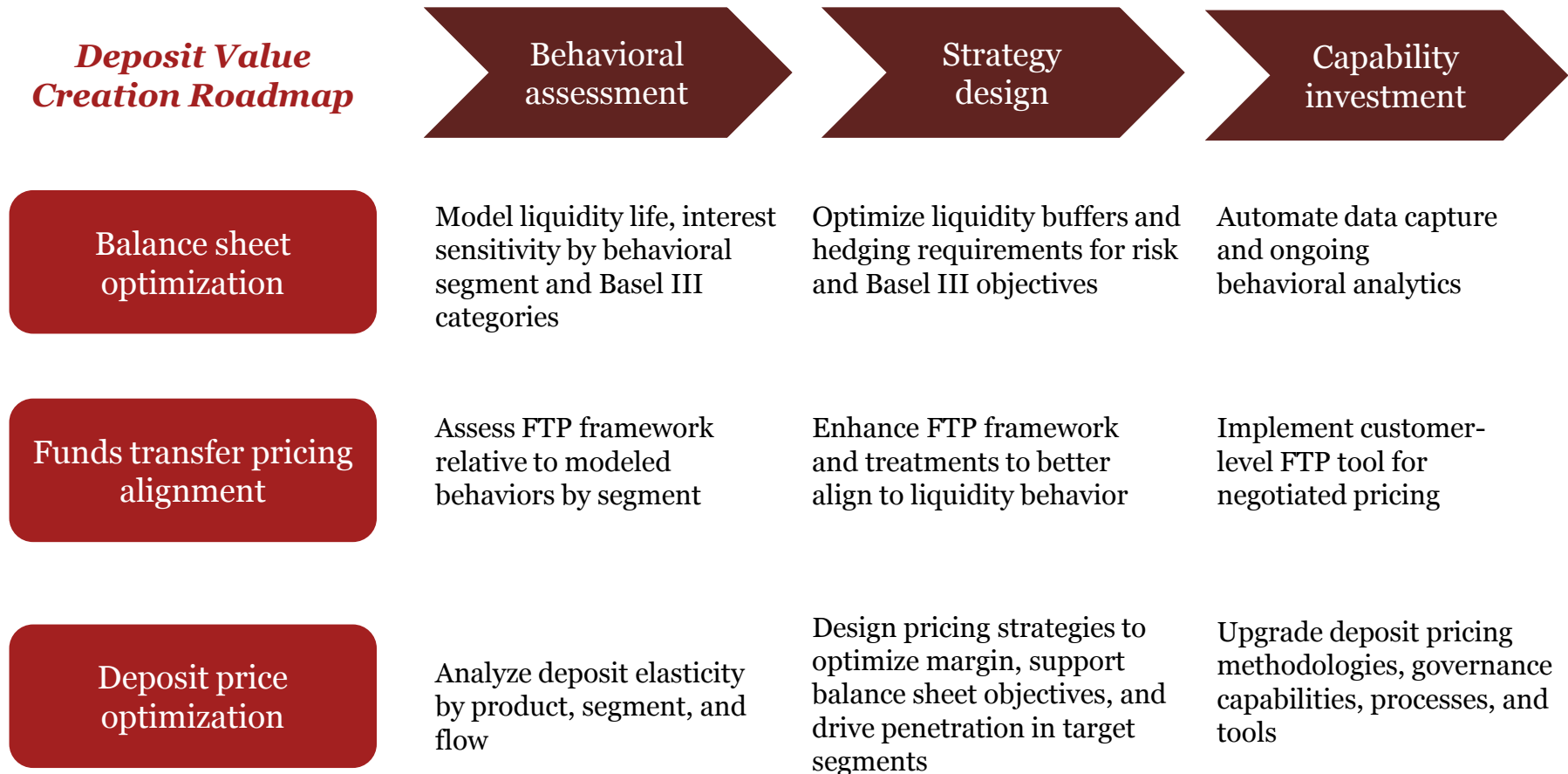
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## *Section 3*

A framework for response

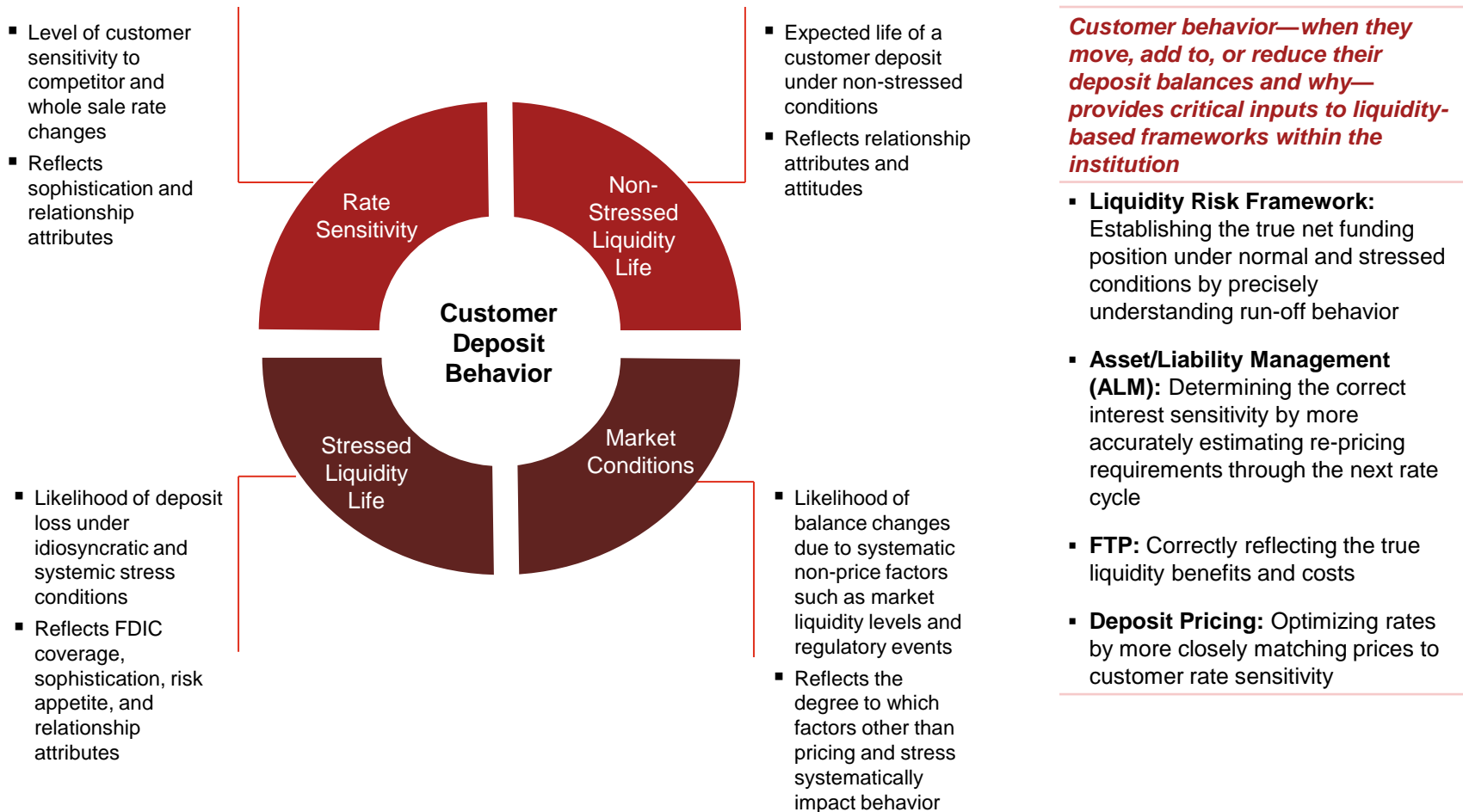
## *A framework for response*

A framework for improvement leverages in-depth understanding of customer behavior and integrated governance to profitably gather deposits.



## *A framework for response*

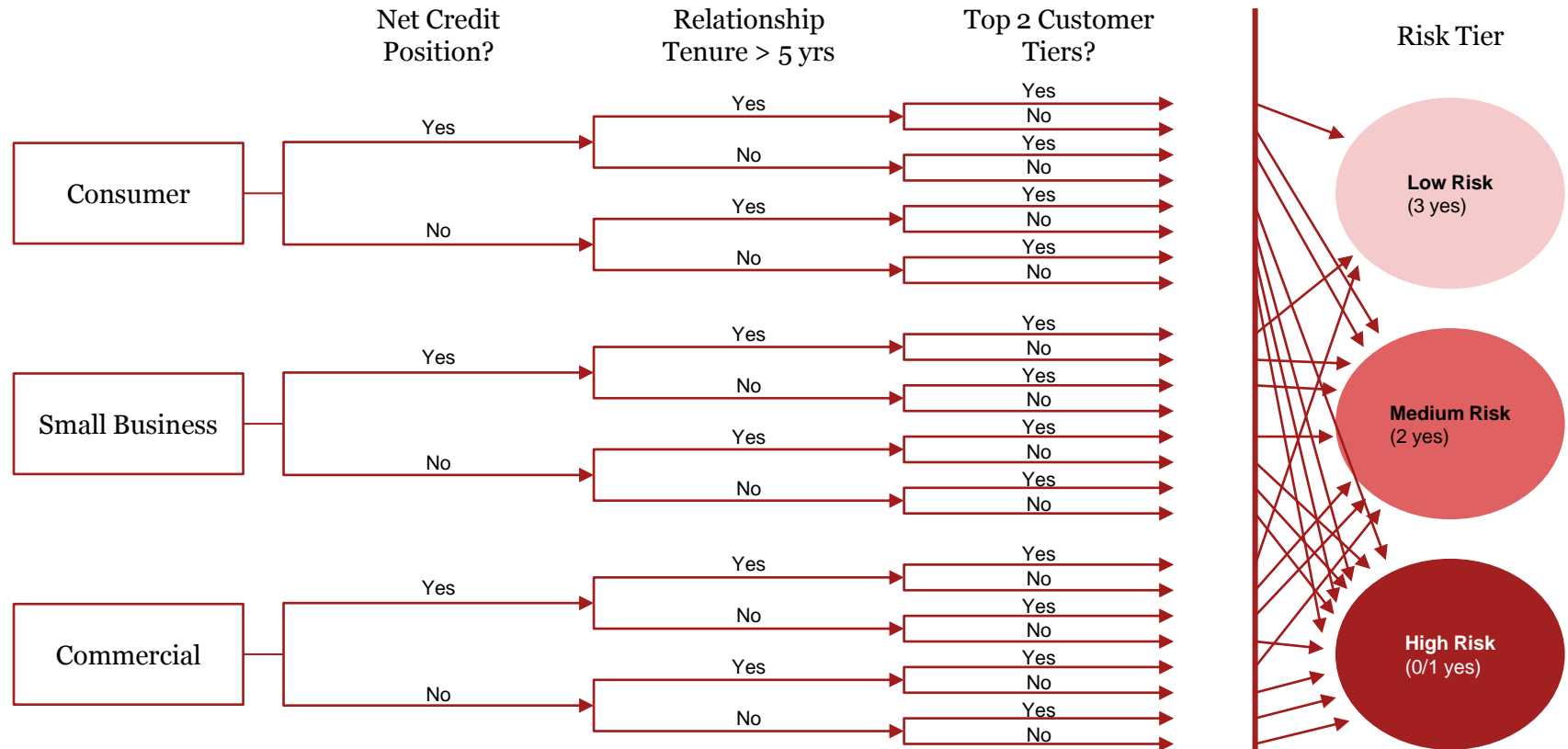
Establishing a robust understanding of how each segment behaves in managing deposit balances provides the foundation for strategy design.



## A framework for response

The behavioral assessment begins with segmentation analytics that capture common characteristics of customers—typically across top-down bank lines of business.

### Behavioral Segmentation Example

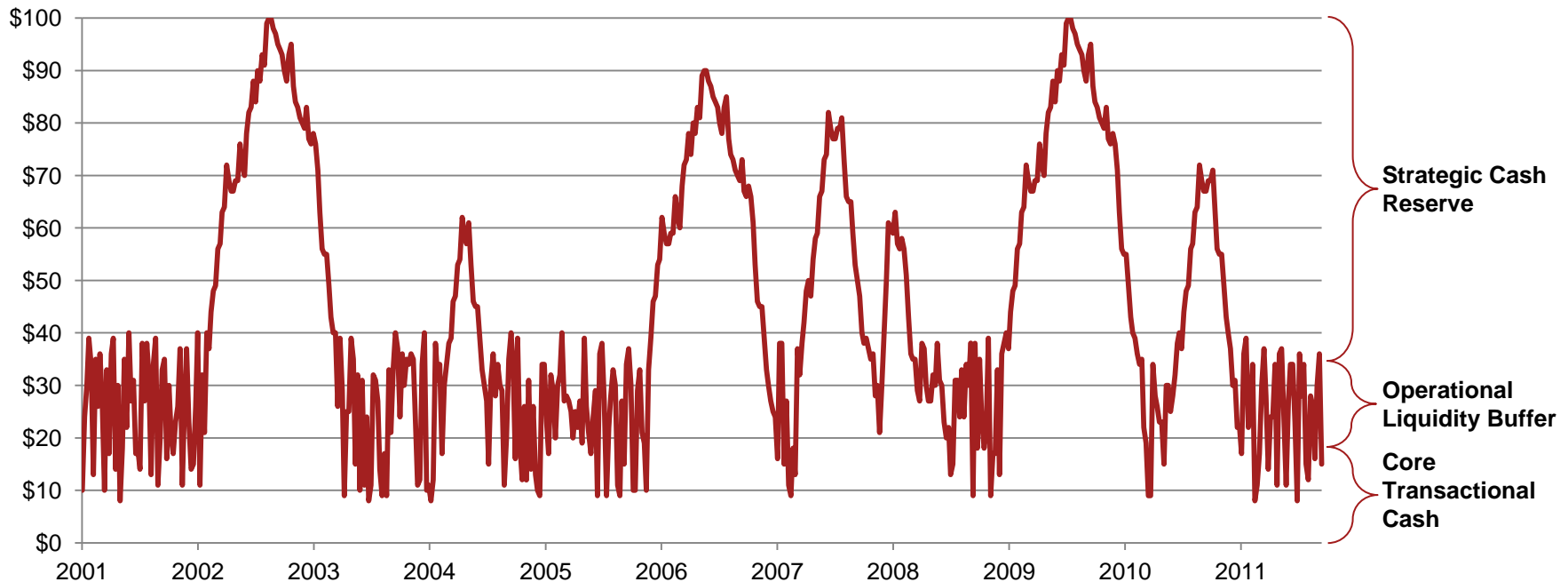


## A framework for response

Viewing deposit behavior at the customer level reveals a mix of very stable and more volatile balance types.

A precise analysis of liquidity life should include consideration of three functions of cash on deposit: core transactional cash, an operational liquidity buffer, and strategic cash reserves. The likelihood of runoff is significantly different for cash used for each of these functions. Each customer segment requires different levels of cash used for each of the functions.

### Liquidity Life: Illustrative Customer View



#### Strategic Cash Reserve

Large liquidity build ups, typically temporary due to large inflows or planned purchases. Emphasis on yield. **Highest likelihood of runoff.**

#### Operational Liquidity Buffer

"Rainy day" money retained for liquidity risk objectives. Emphasis on liquidity (money market deposit account (MMDA), 2a-7 funds). **Moderate likelihood of runoff.**

#### Core Transactional Cash

Minimum cash required for day-to-day banking. Emphasis on convenience (checking). **Lowest likelihood of runoff.**



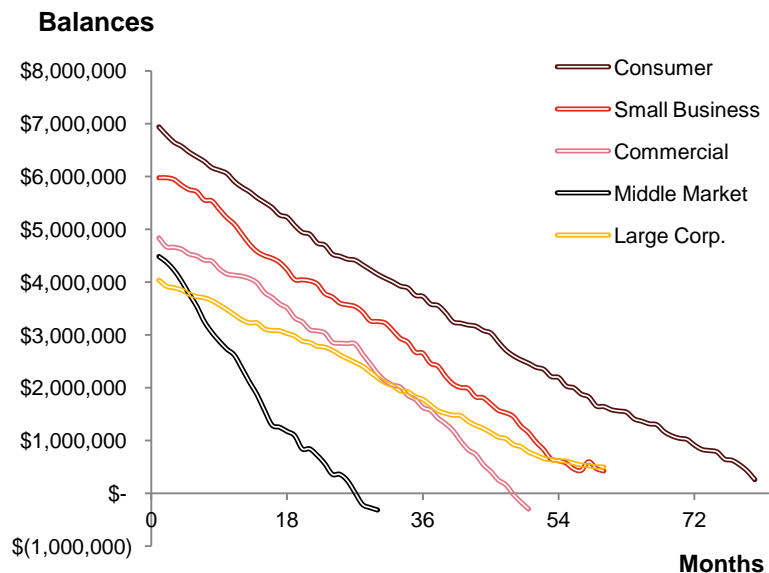
## A framework for response

More in-depth segmentation based on liquidity behavior enables balance sheet optimization and FTP enhancement.

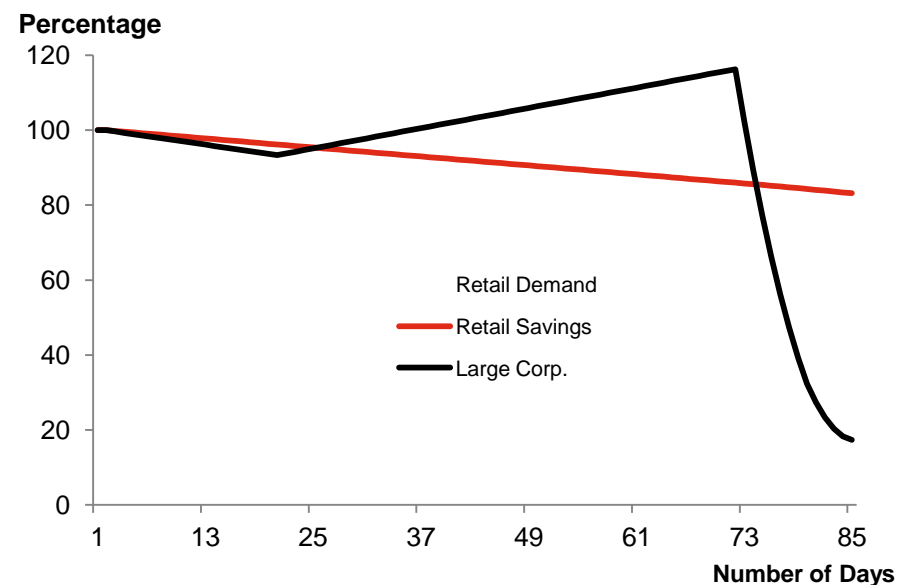
### Deposit Behavioral Components

- Non-Stressed Liquidity Life—Expected attrition horizon of deposit funds under non-stressed conditions. Important for deposit valuation and baselining stress test assumptions.
- Stressed Liquidity Life—Likely attrition rate under stressed conditions. Important for sizing liquidity buffers.
- Rate Sensitivity—Required re-pricing in response to wholesale rate changes to avoid account attrition. Important for deposit valuation as well as setting optimal rates.
- Market Factors—Systematic response to non-stress and non-rate factors such as market liquidity level changes, regulatory events, and equity market developments. Important for reconciling historical behavior to expected future behavior.

Liquidity Life by Segment—Non-Stressed (Illustrative)



Deposit Depletion—Stressed (Illustrative)



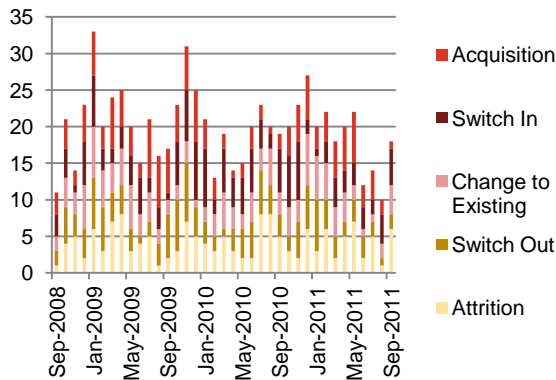
## A framework for response

In order to optimize customer pricing, account-level elasticity analytics are required.

The elasticity-based deposit pricing methodology comprises three steps. First, deposit customers, accounts, and account flow types are segmented and mapped to prepare the balance flows to be modeled. Second, a regression is performed to quantify the correlation between each historical balance flow and rate position. Finally, elasticity is assessed based on the regression output.

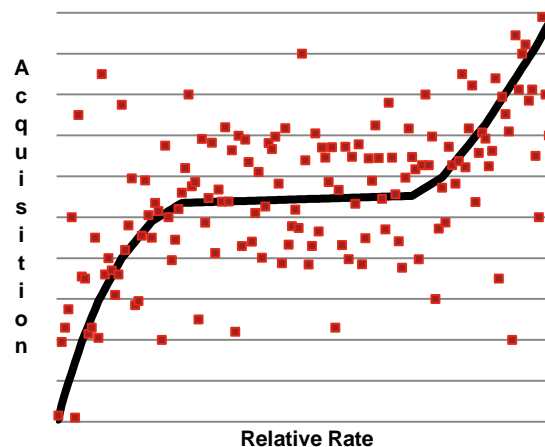
### Step 1: Account Waterfall

**MMDA: Monthly Waterfall Analysis**



- Confirm segmentation cells (e.g., product, business segment, new vs. existing, householding)
- Collect, validate, and clean account-level data
- Map accounts to segment structure
- Confirm business rules for account flows (e.g., expected run-down period for closed accounts)
- Perform waterfall analysis of account flows by cell

### Step 2: Rate-Volume Regression



- Confirm reference rate methodology (rates to be used and competitive samples)
- Calculate reference rates
- Review rate-volume time series by cell and adjust for outliers/unusual events
- Model relative rate-volume regressions utilizing single-variate best fit

### Step 3: Elasticity Assessment

Product	Region 1		Region 2		Region 3	
	Acquisition	Attrition	Acquisition	Attrition	Acquisition	Attrition
Checking						
Interest Checking						
Savings						
MMDA						
3 Mo. CD						
6 Mo. CD						

High elasticity Minimal elasticity

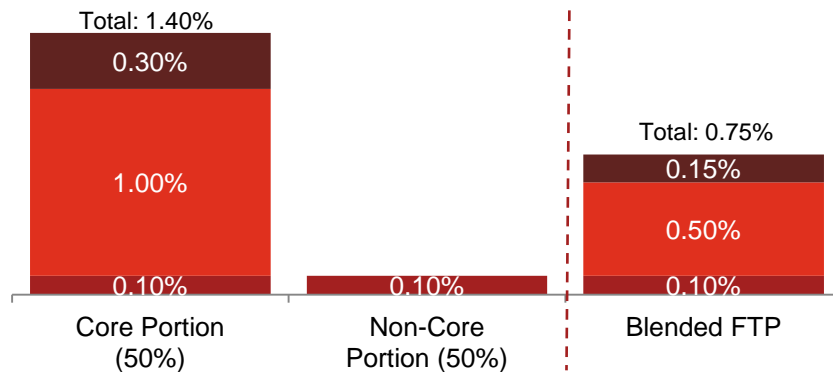
- Assess curves: evidence of non-price factors, limitations of rate experience, level of fit
- Finalize pricing equations
- Score elasticity by cell and conclude relative elasticity across cells
- Review current rate positioning for priority opportunities to optimize pricing

## A framework for response

In order to capture liquidity life behavior in the FTP framework, a contingent liquidity methodology is employed.

Business as usual behavioral life should determine the duration assumptions for FTP purposes. Stressed runoff modeling should determine the required liquidity buffer and buffer charges included in FTP. Robust segmentation should enable precision treatments.

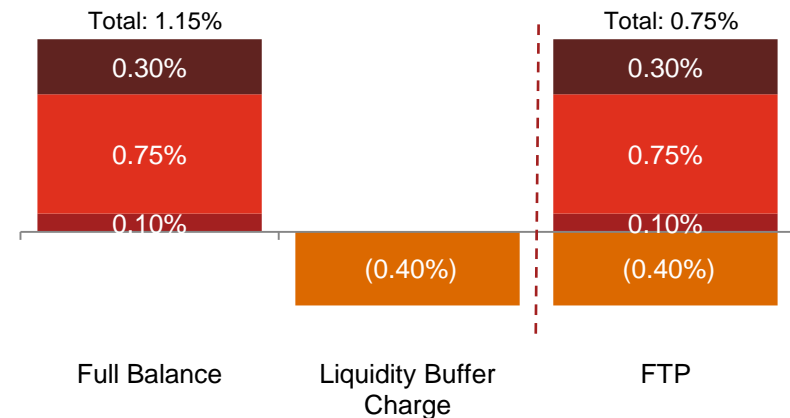
### FTP: Blended Methodology



■ Overnight Funding Rate ■ Matched Funding Rate  
■ Term Liquidity Premium

- Core portion is assumed to be stable and receives matched funding rate and term liquidity premium based on liquidity life
- Non-core portion is assumed to have no liquidity life and receives overnight funding rate
- FTP is understated when non-core liquidity life is realized such as under a non-stressed scenario
- FTP is overstated if core portion is subject to run-off, such as under a stressed scenario

### FTP: Contingent Liquidity Methodology



■ Overnight Funding Rate ■ Matched Funding Rate  
■ Term Liquidity Premium ■ Liquidity Buffer Charge

- The full balance is assigned a liquidity life under non-stressed assumptions, receiving matched funding and term liquidity premium
- Required contingent liquidity is estimated based on stressed scenario modeling (or regulatory requirements), resulting in a liquidity buffer charge

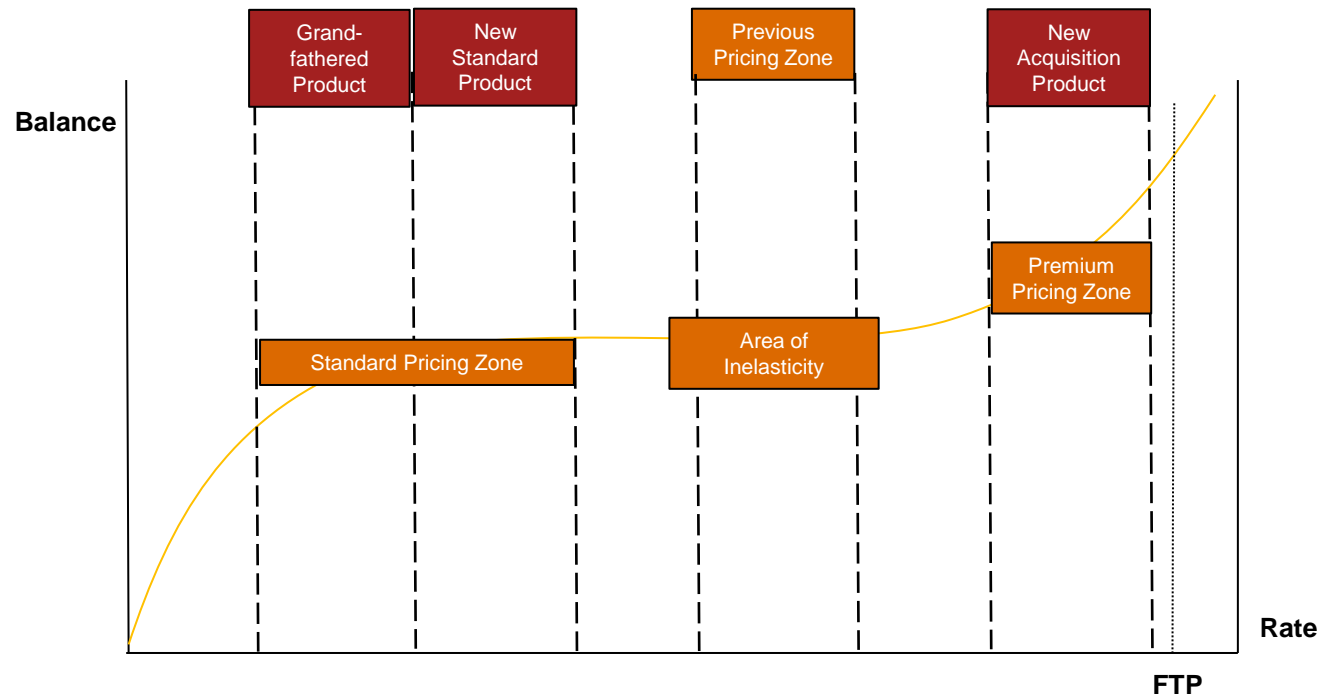
## *A framework for response*

Utilizing elasticity analytics, the bank can design and calibrate price optimization strategies such as grandfathering.

### ***Illustration: Product Grandfathering***

- Existing consumer MMDA product is priced close to competitors within the “area of inelasticity” due to rate insensitivity
- Reduce the rate on the existing product with minimal balance loss based on elasticity analytics
- Introduce new low-rate savings product with marginally more attractive pricing and grandfather existing product
- Introduce new premium-rate product for new money campaigns

### **Illustrative Deposit Pricing Strategy for Consumer MMDA**



## A framework for response

Translating optimal pricing strategies into actionable tactics typically requires adjustments to the product continuum.

Each customer maps to one product based on profile

### Illustration: Business checking product continuum

	Basic Checking	Premium Checking	Analysis Light	Analysis Standard	Hybrid
<b>Target Customer</b>	Small business with modest banking needs	Small business with large balances and basic cash management	Small business with more complex cash management needs	Corporation with full cash management needs	Corporation with full cash management needs seeking interest on excess balances
<b>Service Limitations</b>	No analysis services and limited monthly items	No analysis services and high monthly items	Limited analysis services and high monthly items	Full analysis services and high monthly items	Full analysis services and high monthly items
<b>Fees</b>	None	Medium (balance offset)	Medium	Medium	High
<b>ECR Positioning</b>	N/A	N/A	Low	Medium	Low
<b>Interest Positioning</b>	No interest	Low interest	No interest	No interest	Low interest

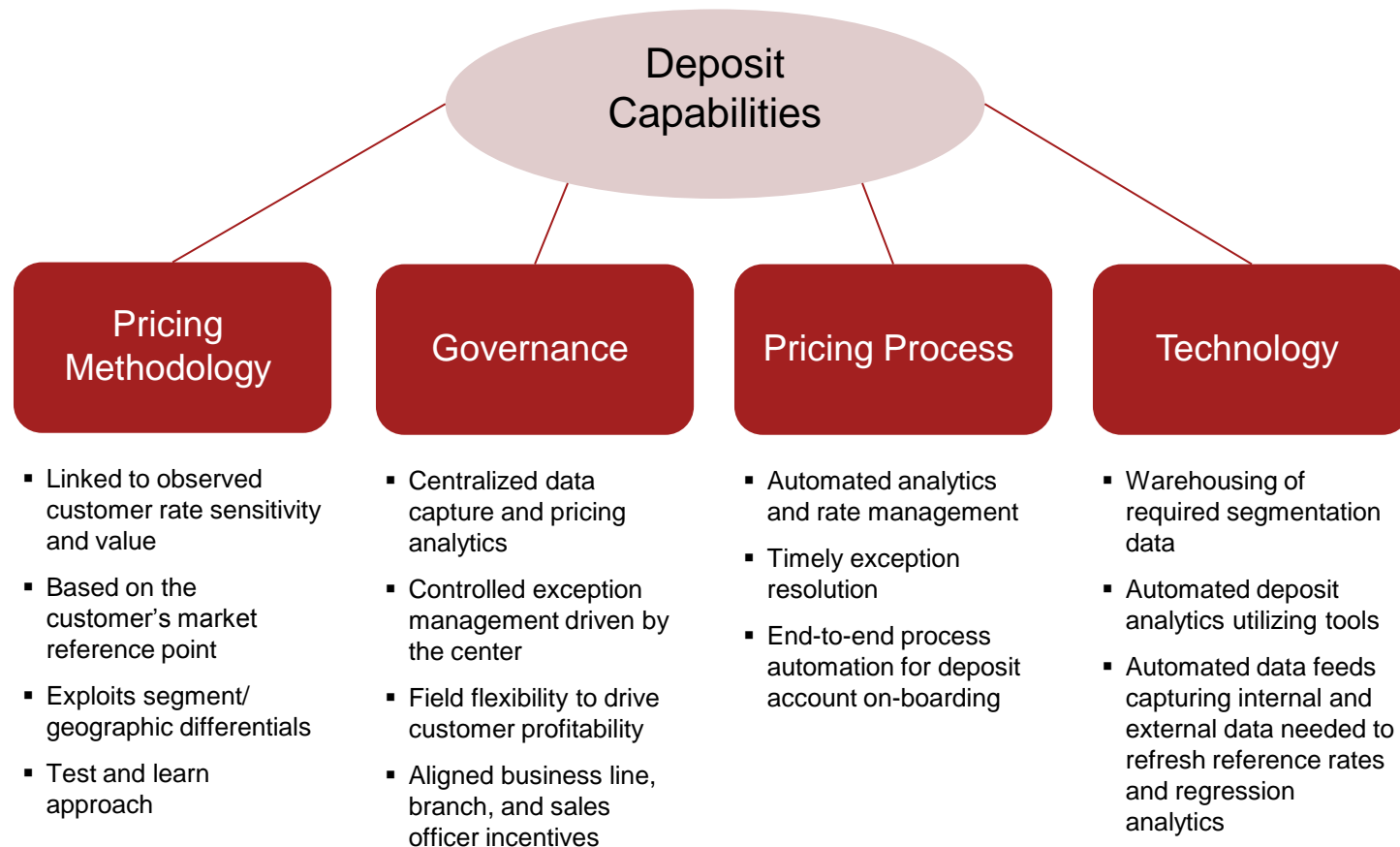
Fences prevent gaming by customers (and sales officers)

Price sensitivity reflected in pricing

## *A framework for response*

To support ongoing excellence in deposit pricing, a bank must excel in four areas of capability.

Establishing a competitive advantage in driving deposit value is not a one-time or periodic effort. Leading institutions invest in technology, human capital, advanced methodologies, and process improvement to ensure ongoing advantage.



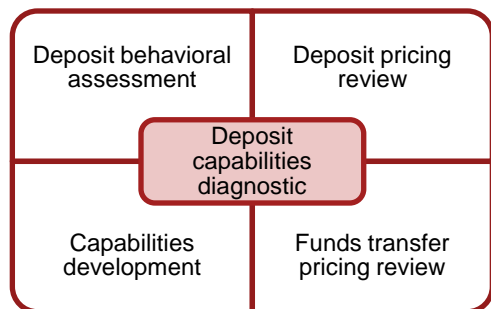
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## *Section 4*

How PwC can help

## How PwC can help

A cross-functional capabilities diagnostic enables the bank to identify priority improvement opportunities and associated business cases.



### Capabilities diagnostics

#### Treasury

- Assess current methodologies and frameworks for incorporating deposit behavior in liquidity risk analysis, reporting, and decision-making
- Review the FTP framework relative to leading practices and emerging regulatory requirements
- Assess FTP governance and processes relative to leading practices
- Evaluate deposit organizational and system capabilities relative to leading practices

#### Lines of Business

- Evaluate the deposit product and sales operating models relative to leading practices
- Measure customer deposit penetration and available headroom by product, segment, and region based on PwC wallet models
- Assess deposit product continuum relative to peers based on benchmarking, vendor data, and PwC data sets
- Review deposit pricing framework and methodologies relative to leading practices
- Hypothesize optimality of deposit pricing based on balance performance relative to competitive rate positioning
- Evaluate deposit organizational and system capabilities relative to leading practices
- Synthesize findings in a capabilities diagnostic deliverable, identifying key opportunities and recommending an improvement roadmap
- Build a business case quantifying the projected revenue impact by opportunity

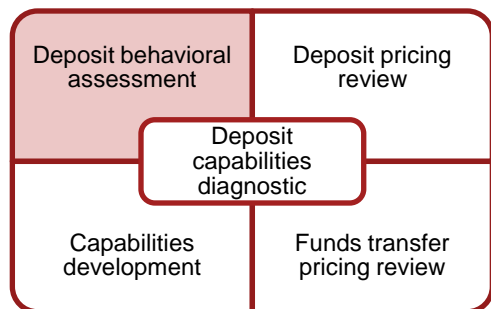
### Deliverables

- Treasury capabilities diagnostic identifying key opportunities and recommending an improvement roadmap
- Business case quantifying the projected economic impact by opportunity
- Capabilities diagnostic by line of business identifying key opportunities and recommending an improvement roadmap
- Business case quantifying the projected economic impact by opportunity



## How PwC can help

The behavioral assessment provides the foundational analytics to design FTP and deposit pricing enhancements.



### Deposit behavioral assessment

#### Treasury

- Scope and develop account-level data request, which will include deposit and firmographic information
- Process, map, and validate account-level data
- Confirm segmentation cells for FTP analysis purposes
- Analyze stressed and non-stressed liquidity life based on vintage-level decays
- Confirm optionality variables to be tested and model balance behavior
- Model rate sensitivity of administered rate products based on regression analysis

#### Lines of Business

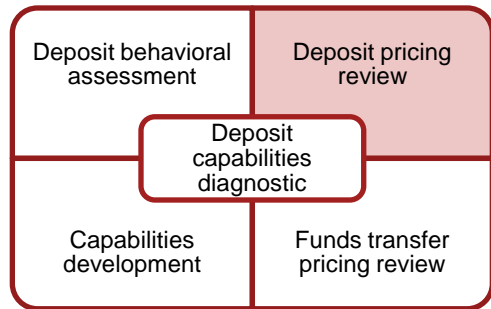
- Scope and develop account-level data request, which will include deposit and firmographic information
- Process, map, and validate account-level data
- Confirm segmentation cells for pricing analysis purposes
- Gather competitive rate data and calculate reference rates
- Model rate elasticity based on regression analysis
- Model rate sensitivity of administered rate products based on regression analysis

### Deliverables

- Behavioral assessment synthesizing the results of the analysis, which will identify for each cell the liquidity life (stressed and non-stressed), optionality, and rate sensitivity of each segmentation cell
- Summary of implications of the analysis and priority next steps: opportunities to enhance FTP methodology, calibrations, governance, and supporting infrastructure
- Behavioral assessment synthesizing the results of the analysis, which will identify for each cell the rate sensitivity of each segmentation cell
- Summary of implications of the analysis and priority next steps: hypothesized price optimization strategies

## How PwC can help

The deposit pricing review leverages elasticity analytics to fashion pricing strategies that optimize margin, support balance objectives, and drive performance in target segments.



### Deposit pricing review

#### Lines of Business

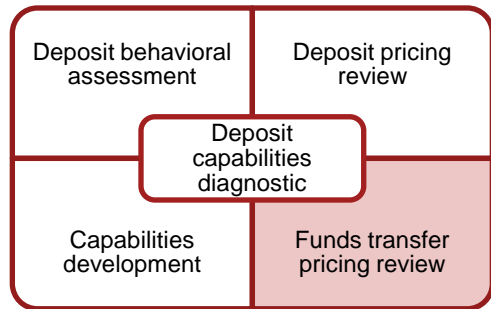
- Confirm segmentation cells (products, regions, customer segments, etc.) to be assessed based on behavioral assessment and strategic priorities
- Based on behavioral analytics, assess relative elasticity across all cells (e.g., scale 1 - 5)
- Based on behavioral analytics, create price-volume equations for each cell
- Model alternative rate scenarios—rate changes and associated volumes—to determine one or more optimal rate positions for each cell
- Identify opportunities to re-price exceptioned accounts
- Design and recommend pricing alternative strategies by cell
- Design and recommend product strategies by cell to support pricing strategy alternatives
- Model financial impacts of each alternative strategy
- Assess customer impacts of each alternative strategy

#### Deliverables

- Exception pricing analysis: recommended re-pricing actions by account
- Elasticity analytics: pricing curves by segmentation cell where statistically predictive
- Elasticity summary: elasticity rating by segmentation cell based on regression functional forms and slope
- Pricing strategy: recommended rate positioning by segmentation cell and financial impact
- Customer impact: assessment of rate impacts on customer segments

## *How PwC can help*

The funds transfer pricing framework will need to be reassessed based on the in-depth behavioral assessment and leading practices.



### **Funds transfer pricing review**

#### **Treasury**

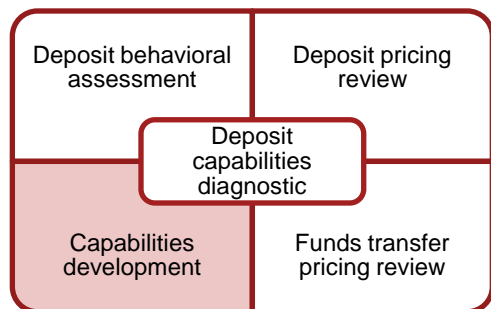
- Review existing FTP framework and calibrations
- Confirm segmentation cells (products, regions, customer segments, etc.) to be assessed based on behavioral assessment and strategic priorities
- Review FTP framework relative to peers and provide feedback on leading practices currently employed and potential improvement opportunities
- Based on behavioral analytics, assess liquidity life and interest sensitivity across all cells

#### **Deliverables**

- Recommended enhancements to the FTP framework to better capture liquidity risk characteristics across deposit and liability products
- Recommended additional segmentation of FTP where appropriate based on behavioral analytics
- Recommended model calibration changes based on behavioral analytics
- Pro forma impacts of recommendations

## How PwC can help

Investing in capabilities enables the bank to establish ongoing methodologies, governance, processes, and tools for deposit value creation.



### Capabilities development

#### Treasury

- Recommend ongoing FTP recalibration process as needed to support planned enhancements
- Assess implications of FTP pricing changes on rate governance and recommend enhancements
- Recommend opportunities to improve FTP analytics through automated solutions
- Design, develop, and implement FTP tools to support recommendations
- Train staff in advanced FTP concepts and methodologies

#### Lines of Business

- Design process for ongoing application of analytic deposit pricing methodology
- Assess implications of deposit pricing changes on rate governance and recommend enhancements
- Evaluate current staffing levels and structure devoted to deposit management and recommend enhancements
- Recommend opportunities to improve rate management through automated solutions
- Assess current technology utilized for pricing analytics and recommend enhancements
- Design, develop, and implement deposit pricing tools to support recommendations
- Train staff in advanced deposit pricing concepts and methodologies

### Deliverables

- Capabilities assessment: methodologies, operational models, supporting capabilities
- Tool development and implementation
- Training
- Capabilities assessment: methodologies, operational models, supporting capabilities
- Tool development and implementation
- Training

## *How PwC can help*

PwC is distinguished by the depth and breadth of its professionals.

### Experience

Our teams have significant experience in performing comprehensive evaluations of deposit capabilities, deposit pricing and fund transfer pricing for several large and private banks. Throughout these evaluations, areas of focus have included:

- Assessing the liquidity framework's ability to meet the expectations of various regulatory bodies and prioritize action plans to ensure the stress testing framework meets or exceeds regulatory expectations.
- Assessing the key regulatory, operational, financial, and strategic risks posed by various deposit strategies
- Diagnosing FTP frameworks to assess how effectively the framework matches the typical deposit behavior in business segments
- Recommending elasticity-based pricing strategies for each product to move rate position closer to the optimal rate-balance point based on detailed analytics and analyses
- Recommending rate governance enhancements to centralize deposit pricing in product management
- Understanding the key regulatory, operational, financial, and strategic risks posed by various deposit strategies
- Providing guidance on opportunities to enhance the deposit control environment

### Clients

PwC team members have performed deposit or liquidity risk analysis engagements for a wide variety of clients. Selected recent clients include:

- Commercial services division of a Big 5 Canadian bank
- Corporate treasury division of a Big 5 Canadian bank
- Corporate banking division of a UK-based global bank
- Retail and commercial divisions of a Top 5 East Coast regional U.S. bank based
- Private banking division of an East Coast community bank
- Corporate treasury and commercial division of a Top 25 Midwest regional bank
- Retail division of a Top 10 East Coast regional bank
- Small business division of a Top 10 Midwest regional bank

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## *How PwC can help*

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## ***Section 5***

Select qualifications

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## Select qualifications

### Corporate liquidity management diagnostic—Large UK bank

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#### Issues

A large global bank based in the U.K. sought a leading practices review of its corporate banking liquidity pricing desk. Although the relationship teams had been successful in driving aggressive balance growth from corporate customers following the financial crisis, management was concerned that a more centralized pricing approach was needed to ensure profitability. At the same time, the bank sought to retain a balanced governance model that provided appropriate flexibility to the field.

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#### Approach

- Assessed the core pricing methodology utilized by the pricing desk and field personnel relative to leading practices. Validated the opportunity to implement more analytic capabilities through an account-level by statistically correlating historical pricing decisions to elasticity drivers.
- Mapped and reviewed the organizational structure supporting liquidity pricing. Compared the structure relative to leading practices and interviewed stakeholders in pricing, product management, and the sales teams to uncover issues.
- Assessed the efficacy of liquidity pricing processes to identify governance obstacles and transaction-flow bottlenecks.
- Reviewed existing technology resources available to the organization in order to identify opportunities to improve analytics and process efficiency through automated tools.
- Based on the analysis, designed and recommended an improvement program built around a pricing center of excellence model for the corporate bank. The improvement program included recommendations to implement analytic pricing, centralize and strengthen rate governance, and deploy a distributed pricing tool.

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#### Benefits

The liquidity management diagnostic delivered a roadmap that the client leveraged to roll out a multi-year improvement program. The anticipated benefits of the program include 1) improved discipline in re-pricing exceptioned accounts over time; 2) higher level of pricing expertise on the liquidity desk; 3) more smoothly functioning, less exception-based, interaction between the desk and relationship teams; and 4) implementation of a proprietary, distributed exception-pricing tool to automate analytics and field pricing discretions.

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## *Select qualifications*

### Readiness for Reg Q repeal—Large North American bank

<b>Issues</b>	A large North American bank sought to ensure readiness for the repeal of Regulation Q's prohibition on interest-bearing business transaction accounts as prescribed by Dodd-Frank.
<b>Approach</b>	<ul style="list-style-type: none"><li>▪ Utilized a behavioral segmentation methodology to risk-tier each small business and commercial customer based on propensity to attrite in response to a competitive interest offer. Factors depended upon segment and included product usage, balance level, and current pricing/ECR position.</li><li>▪ Compiled industry intelligence on likely competitor responses.</li><li>▪ Interviewed sales teams and select customers to assess need for new offers post Reg Q repeal.</li><li>▪ Designed and modeled financial impacts of multiple potential product continuums, ranging from taking no action to actively marketing new, premium-rate products.</li></ul>
<b>Benefits</b>	Based on our analysis, the bank was able to comfortably conclude that taking minimal action in response to Reg Q repeal would best control margin compression and was unlikely to result in a competitive disadvantage. Subsequent events following the effectiveness date of Reg Q repeal in July, 2011, validated our analysis of likely competitor and customer actions.

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## Select qualifications

### Deposit price optimization—Large North American bank

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#### Issues

A large North American bank sought to implement improved deposit pricing practices in its commercial segment. Pricing decisions were highly decentralized, with relationship teams able to price customers individually within broad guidelines set by product management. The objective of the assessment was to test how effectively relationship teams had priced deposit accounts relative to customer elasticity.

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#### Approach

- Modeled price-elasticity curves based on account-level analysis of all business customers, segmented by multiple factors including company size, region, industry, product usage, and balance tier.
- Assessed rate positioning relative to theoretically optimal rate points on the elasticity curves.
- Tested field discipline in following pricing guidelines by analyzing account attributes, validating that account executives frequently priced outside of guidelines and failed to perform re-pricing reviews.
- Performed an FTP diagnostic to assess how effectively the framework matched typical deposit behavior in business segments.
- Based on the analysis recommended pricing strategies for each product to move rate positioning closer to the optimal rate-balance point. The recommended pricing strategies ranged from downward re-pricing in certain segments and products to introduction of premium-rate small business accounts.
- Recommended a new administered-rate product for large customers expected to generate significant volumes through a rate enhancement while receiving more favorable FTP treatment.
- Recommended rate governance enhancements to centralize deposit pricing in product management.

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#### Benefits

Following our analysis, the product management team validated our findings with the relationship teams and reached consensus within the bank that over \$30 million CAD improvement in margin was achievable through re-pricing of accounts and strengthened pricing controls.

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## Select qualifications

### Post-merger integration of deposit operations—North American regional bank

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#### Issues

A North American regional bank was faced with the challenge of integrating three recently acquired community banks based on the west coast. This required integration of commercial lending, residential mortgage, treasury and deposit services as well as investment management and trust business units. Operationally this integration was particularly challenging in the deposits area as each of the banks had its own products, pricing, vendor relationships and processing models. Additionally, it would be difficult to bridge the customer experience gap between the community banks and the clients' private banking model while simultaneously achieving the synergy targets established by management.

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#### Approach

- Reviewed existing liquidity management policies, methodologies, and reports to gain an understanding of the firm's current liquidity risk practices and metrics from both liquidity and funding perspectives.
- Interviewed key stakeholders in Treasury and Finance to gain substantive detail regarding the current approach and vision for future developments in this area.
- Prepared an evaluation of the organization's current liquidity risk metrics, limits, reports, policies, and oversight practices, relative to industry standards, to identify any differences or potential gaps and improvement opportunities.
- Conducted a proprietary benchmarking survey to collect data from selected institutions to gain a deeper understanding of liquidity management practices at leading financial institutions.

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#### Benefits

PwC was able to assist the client throughout the integration journey starting with the planning phase during which synergy targets were calculated. This was followed by implementation of a new integrated organization model and rationalization of the disparate products. Next came the mobilization phase, during which specific resources within each region were identified to act as integration agents, vendors / third parties were contacted and asked to provide for a larger footprint and new operating models were defined for servicing, new business generation, treasury operations and support functions. PwC helped the client to meet all of its Day 1 objectives from a regulatory/legal perspective and to achieve a seamless re-branding of its west coast divisions.

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## *Select qualifications*

### Liquidity risk management review and benchmarking initiative—Large North American bank

<b>Issues</b>	A large retail, commercial, and wholesale bank in North America was having difficulties with its liquidity governance processes and the communication of critical liquidity information to senior management and the board. The organization was also concerned about how its liquidity management approach compared to industry practice at peer institutions.
<b>Approach</b>	<ul style="list-style-type: none"><li>• Designed an integrated future state operating model based on a hub-and-spoke approach which leveraged synergies while providing an improved customer experience at each of the west coast branch locations</li><li>• Developed a methodology for comparing deposit products, services and features across the four banks to determine the optimized end state product portfolio and the roadmap for reaching the proposed end state</li><li>• Proposed and facilitated the implementation of an end state deposits organizational structure, including defining key reporting lines, client ownership policies, roles and responsibilities, etc.</li><li>• Developed a detailed project plan for integrating risk assessment processes across the four banks, implementing the common core platform and including the integration of various disparate systems (lockbox, cash management, teller platform, etc.) onto the common core</li></ul>
<b>Benefits</b>	PwC provided an extensive list of recommendations for improving the client's liquidity management practices. The recommendations included enhancement opportunities in the areas of governance and organization, policies and procedures, analytics and reporting, and data and infrastructure. For each recommendation, PwC identified the business functions that were affected by the proposed changes; the area of liquidity management that was affected (i.e., tactical, structural, and contingent) the prerequisites required for implementing the change; the priority of the effort; an estimated timeframe for completion; and the benefits that could be derived from each change.

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## *Select qualifications*

### Liquidity management review—Large North American bank

<b>Issues</b>	The client needed to perform a liquidity management review as part of a larger initiative to assess the bank's governance, risk management, and controls on an enterprise-wide basis.
<b>Approach</b>	<ul style="list-style-type: none"><li>• PwC performed the review in two phases. The first phase focused on the risk management practices related to wholesale bank liquidity, while the second phase focused on liquidity risk management at the enterprise level. Both reviews addressed governance, reporting measures, limits and analytics, and the liquidity risk management control infrastructure.</li><li>• The review focused on assessing five key areas of liquidity risk management:<ul style="list-style-type: none"><li>- The bank's global liquidity framework</li><li>- Risk identification and escalation processes when liquidity issues arise</li><li>- Information about liquidity available to management and the board</li><li>- Integration of recently acquired entities into the global liquidity framework</li><li>- Involvement of independent risk oversight in managing liquidity risks and key assumptions impacting liquidity risk management</li></ul></li><li>• PwC conducted a series of interviews with key liquidity management staff to understand relevant policies, procedures, and mandates.</li></ul>
<b>Benefits</b>	PwC developed a series of recommendations for improvement, including identification of specific gaps PwC and their impact, along with recommendations to close the gaps. As part of the assessment, PwC evaluated the institution's practices against regulatory guidance and peer institutions in order to provide insight into how the client could bring its practices more in line with industry standards. Additionally, the client was able to utilize the PwC report as required documentation for submission to its regulator in response to action items resulting from the client's most recent regulatory review.

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## *Select qualifications*

### Liquidity stress testing and scenario analysis review—Major European bank

<b>Issues</b>	The client required a review and assessment of its scenario analysis and stress test model for liquidity risk. The objective of the review was to validate the model and assess whether it met the requirements set by supervisory authorities in both home and host countries.
<b>Approach</b>	<ul style="list-style-type: none"><li>• Evaluated the bank's current liquidity stress testing framework, including methodology, process, assumptions, calculations, and data quality. Gained an understanding of the bank's approach in order to provide insights based upon our knowledge and experience working with other leading financial institutions.</li><li>• Reviewed elements and assumptions of the liquidity stress tests as they pertained to both systemic and firm-specific economic scenarios.</li><li>• Interviewed key stakeholders to gain insight into the current approach and the strategies used to develop relevant and applicable liquidity risk scenarios.</li><li>• Assessed the model against leading practices in terms of quantification of liquidity risk, stress test methodologies, and chosen scenarios.</li><li>• Determined the ability of the current approach to meet the expectations of various regulatory bodies. Where issues were identified, prioritized action plans were developed to ensure the bank's stress testing framework would meet or exceed regulatory expectations.</li></ul>
<b>Benefits</b>	PwC recommended a number of potential enhancements to strengthen the bank's liquidity stress testing methodology and provided a level of comfort that the bank was employing a robust and rigorous liquidity risk management methodology. The enhancements also will enable senior management to understand the potential impact of extreme market developments on its liquidity risk profile.

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“When Cash Isn’t King: Driving Deposit Value in a World of Excess Liquidity,”  
PwC FS Viewpoint, December 2011. [www.pwc.com/fsi](http://www.pwc.com/fsi)

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