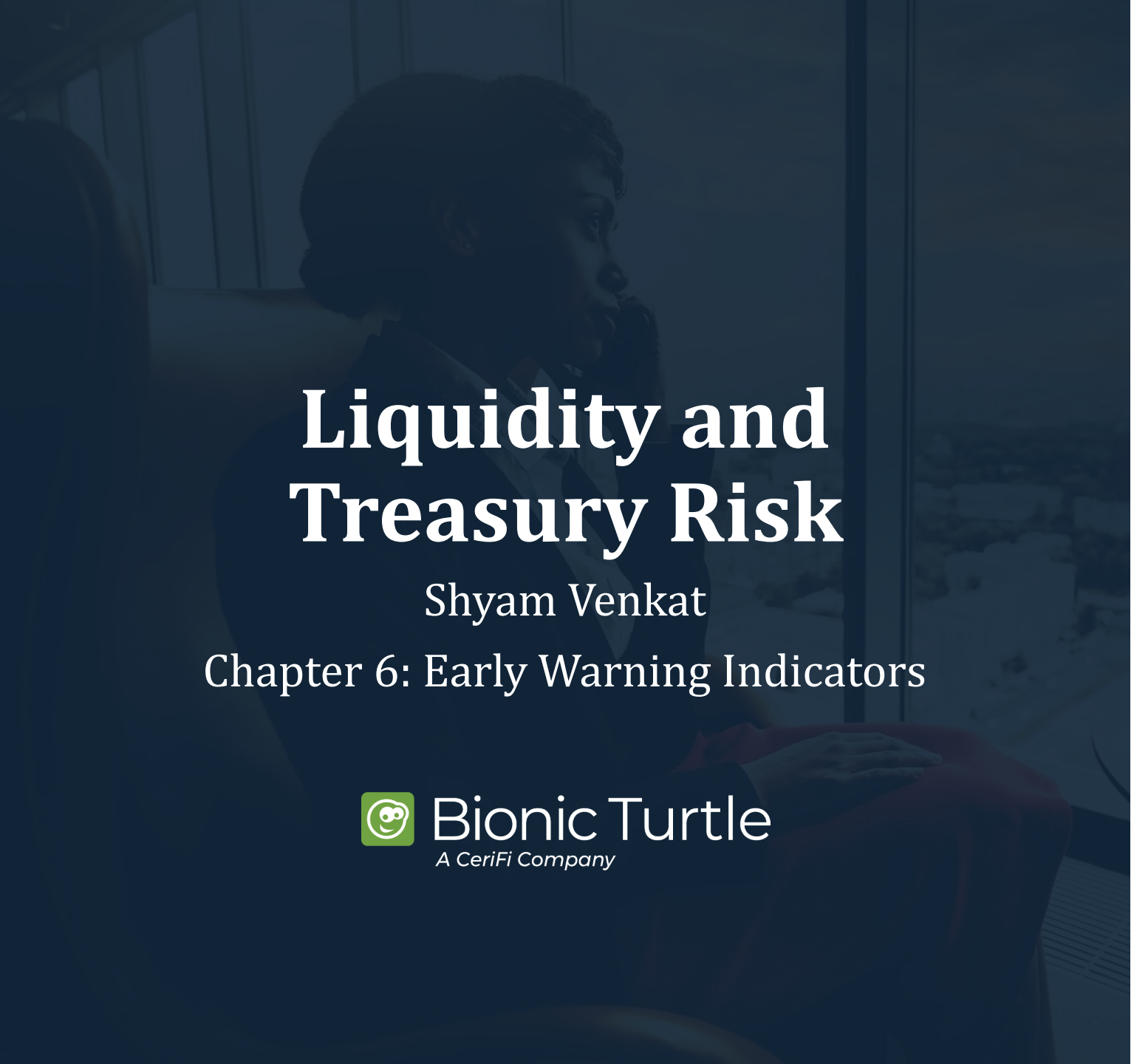

Liquidity and Treasury Risk

Shyam Venkat

Chapter 6: Early Warning Indicators

Bionic Turtle
A CeriFi Company

Shyam Venkat
Chapter 6: Early Warning Indicators

Key Concepts:

- Qualities of Early Warning Indicators
- Suggested EWI's (Non-exhaustive)
- EWI Applications in Practice
- Case Study: Silicon Valley Bank

Bionic Turtle

Qualities of Early Warning Indicators

- **Leading** - Signs of trouble ahead of time

- **External and Internal** - Important to include both metrics; firms do not operate in a vacuum. Liquidity issues can stem from systematic or idiosyncratic issues.

- **Sharp** - They need to be distinguishable amongst a lot of data.

- **Stressed** - And normal. EWI metrics should be examined under both conditions.

- **Multi-Time Horizons** - Critical to examine funding availability across multiple time horizons commensurate with liquidity needs, both known and projected.

Bionic Turtle

Suggested EWI's (Non-exhaustive)

- An unusual growth in assets, particularly when accompanied by volatile liabilities
- Debt (credit) spreads *widen*, and/or credit default swap (CDS) spreads *widen*
- Declining diversity in the makeup of assets and liabilities; or growing currency mismatches
- When the weighted average of liabilities' maturity declines
- Positions going beyond or getting close to regulatory limits
- Certain product line experience negative trends
- The financial condition of the bank weakens or Public press that is negative
- A downgrade in the credit rating; and/or a decline in the stock price

Bionic Turtle

Suggested EWI's (Non-exhaustive) (Cont.)

- Debt costs increase
- Retail and/or wholesale funding costs increase
- Counterparties becoming nervous about the financial condition of the bank
- Credit lines are lowered
- Outflows of retail deposits at an increased pace
- Certificates of deposit (CDs) are increasingly redeemed
- Longer-term funding opportunities become more difficult
- Placing short-term liabilities becomes more difficult

Bionic Turtle

Suggested EWI's (Non-exhaustive) (Cont.)

- Market Indices - general and industry-specific
- Interest Rates - OIS, Treasuries, Yield curve spreads, Fed Funds
- Other Economic Indicators - GDP, PMIs, HPIs, Repo Prices, Oil Prices, Currency Prices

Bionic Turtle

EWI Applications in Practice

M.E.R.I.T.

- **M**easures - of forward-looking liquidity risk exposures, including the term structure of the balance sheet, projected cash flows and liquidity needs, and off-balance sheet liabilities.
- **E**scalation - there MUST be an escalation process!
- **R**eporting - should be regular, typically daily but in some cases intraday.
- **I**ntegrated Systems - backend of each division must be linked, consolidated, and readable by the risk management department.
- **T**hresholds - stoplight system (green, yellow, red)
  - Green - within acceptable boundaries.
  - Yellow - merits further analysis.
  - Red - warrants immediate attention and action.
    - Boundary widths must be just right
      - Too wide - will not pick up anything
      - Too narrow - too many false alarms

Bionic Turtle

EWI Applications in Practice (Key Supervisory Guidelines)

OCC-2012	BCBS-2008	BCBS-2012	SR 10-6
EWIs that signal whether embedded triggers in certain products (i.e., callable public debt, OTC derivatives transactions) are about to be breached. EWI's may include: • Reluctance of traditional fund providers • Pending regulatory action • Widening spreads or stock price declines • Difficulty accessing long-term debt markets • Counterparty resistance to off-balance-sheet products or increased margin requirements • Elimination of committed credit lines by counterparties	Early warning indicators can be qualitative or quantitative and may include but are not limited to: • Rapid asset growth, especially when funded with potentially volatile liabilities • Growing concentrations in assets or liabilities • Increases in currency mismatches • Decrease of weighted average maturity of liabilities. • Repeated incidents of positions approaching or breaching internal or regulatory limits • Negative trends or heightened risk associated with a particular product line	Intraday liquidity monitoring indicators include: • Daily maximum liquidity requirement • Available intraday liquidity • Total payments • Time-specific and other critical obligations • Value of customer payments made on behalf of financial institutions' customers • Intraday credit lines extended to financial institution customers • Timing of intraday payments • Intraday throughput	The institution should tailor these indicators to its specific liquidity risk profile. Early-warning signals may include, but are not limited to: • Negative publicity concerning asset class owned by institution • Increased potential for deterioration in institution's financial condition • Widening debt or credit default swap spreads • Increased concerns over funding of off-balance-sheet items

Source: GARP's Table 3.2 (but further abbreviated)

Bionic Turtle

Case Study: Silicon Valley Bank

"Banking is the ultimate confidence game." – ZeroHedge.com

- An unusual growth in assets, particularly when accompanied by volatile liabilities;
- When the weighted average of liabilities' maturity declines;
- The financial condition of the bank weakens; or, Public press that is negative;
- A downgrade in the credit rating; and/or a decline in the stock price;
- Outflows of retail deposits at an increased pace;
- Interest Rates- Yield curve spreads, Fed Funds
- Falling stock price

Bionic Turtle

Case Study: Silicon Valley Bank (cont.)

SVB had multiple points of failure from a risk management perspective. Here we just examine failures to react to EWI.

1. SVB grew very quickly from RBO (Regional Banking Operation) to LFBO (Large and Foreign Banking Operation). Had rapid rise in demand deposits (mostly uninsured) and assets.
2. Maturity mismatch increased. SVBs went out further on yield curve, searching for Net Interest Income. Net duration also increased when they sold their hedges in 2021.
3. SVB was performing poorly financially because they were losing deposits. They were forced to sell assets HTM at a $2 billion loss. Shortly before they blew up, they scuttled a well-publicized planned capital raise.
4. Moody's was preparing to lower their credit rating, and SVB was aware of this.
5. Deposit outflows accelerated, mainly due to concentration risk. SVB catered to VC and private equity industry. They all talked, and nobody wanted to be last one out of the pool. $42 billion was withdrawn on last full day of business, over $1.1 million per second.
6. SVB ignored most widely-telegraphed rate hikes in history. Management was more concerned about rates dropping.
7. Their stock price had been falling for some time.

Those are just some of the EWIs they missed with respect to liquidity! There were other serious issues of both governance and regulation.

Bionic Turtle

Shyam Venkat
Chapter 6: Early Warning Indicators

Key Concepts:

- Qualities of Early Warning Indicators
- Suggested EWI's (Non-exhaustive)
- EWI Applications in Practice
- Case Study: Silicon Valley Bank

Bionic Turtle

Bionic Turtle Forum

https://forum.BionicTurtle.com

Bionic Turtle