7. Earnings Analysis: Indicators and Techniques

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Importance of Earnings to Bank Performance and Analysis

Earnings (profitability) are a fundamental indicator of management's skill in running the bank.

- Profitability adds to capital, which is the single most important indicator of a bank's financial strength.
- Profitability also makes shareholders more willing to invest additional capital in the bank, if required.
- Profitability enhances liquidity by increasing net cash flow and inspiring depositor confidence.

Relation of Profitability to Other CAMELS Components

Asset Quality affects profitability: weaker loan quality requires higher loan-loss provisions (an expense)

Capital affects profitability: higher capital may lower borrowing costs, increasing net interest margin; higher capital also increases earning power by increasing excess of interest-earning assets over interest-bearing liabilities

Profitability affects capital: higher profitability adds to capital directly, and makes shareholders more willing to invest more capital

Liquidity affects profitability: higher liquidity may lower borrowing costs

Profitability affects liquidity by increasing net cash flow

Sensitivity to market risk affects profitability by the classic tradeoff: higher, unstable profits (more risk) vs. lower, stable profits (less risk)

Foundations of Profitability Analysis
(1/2)

Profitability indicators are *flow* indicators – measured over a *period of time,* not at one point in time. The period of time must be specified in the analysis.

Profitability indicators must be *standardized* – because banks differ in size and time periods differ in length. Normally, profitability and its components are measured ***as a percentage of average total assets (or capital)*** and ***annualized.***

Example: Return on Equity (ROE). Profit over a certain period, say 3 months, as a percentage of average total capital over the same period, multiplied by 4 to annualize

Foundations of Profitability Analysis
(2/2)

Profitability components can be analyzed for their

- ***Level*** (strong, weak, or average)
- ***Trend*** (getting better, getting worse, or staying about the same)
- ***Stability*** (same from period to period, or wildly fluctuating)
- ***Comparison to similar banks*** (peer group – helps to develop a sense of what is a "normal" value or range for a profitability indicator in a given banking system, and identify outliers for further analysis)

Return on Assets and Its Composition: Goal of Analysis

Return on Assets (ROA): profit divided by average total assets and annualized

Goal of all earnings analysis is to explain why ROA is high or low, where it is going, why and how much it fluctuates, and how it compares to similar banks.

To do this, we need to *decompose* ROA into its constituent components with a *profitability model.*

The Profitability Model: Decomposition of ROA (1/3)

(All amounts expressed as a percentage of average total assets and annualized)

	Net Interest Income
+	Fees and Commissions
+	Net Trading Income (possibly)
--	Operating Expenses
=	***Subtotal: Core Income***
--	Net provisions for loan losses
+	Net gain (loss) from mark-to-market adjustment on securities, derivatives, etc.
+	Other op income – other op expense (net)
=	***Subtotal: Net Operating Income***

The Profitability Model: Decomposition of ROA (2/3)

=	***Subtotal: Net Operating Income***
+	Net gain (loss) on sales of securities, fixed assets, repossessed assets, real estate held for investment, etc.
+	Net gain (loss) from revaluation of assets, liabilities, and off-balance sheet items due to foreign currency fluctuations
=	***Subtotal: Profit before taxes***
--	Corporate profits taxes
=	**RETURN ON ASSETS**

The Profitability Model: Decomposition of ROA (3/3)

= RETURN ON ASSETS

The above profitability model conveniently summarizes incomes and expenses into 10 components (some of them net) and 4 subtotals – a useful simplification for analytical purposes

For each, analyze level, trend, compare to peer

(There are other ways to categorize incomes and expenses and analysts sometimes disagree on definitions – consult your own regulatory authority for guidance!)

The Profitability Model: Core Income (1/4)

Core income: the ***regular, recurring*** profitability from a bank's ***basic*** activities of taking deposits, making loans and investing in various securities; providing services for customers that earn fees and commissions; trading securities, derivatives, and foreign exchange (possibly); and incurring various operating expenses.

Key words: regular, recurring, basic

Whether net trading income should be included in core income or not depends on its stability!

Excludes provisions, net gains on asset sales

Benchmark varies, traditionally 2 percent of average assets

The Profitability Model: Core Income (2/4)

A variation on the Core Income concept is the Efficiency Ratio:

= (Net Int Inc + Comm/Fee Inc + Net Trading Inc)/ Operating Expenses

(Sometimes expressed as its reciprocal – the "inefficiency ratio")

Measures the amount of extra core income a bank gets for one dollar (yen, yuan, won, baht, etc.) extra of operating expenses

The higher this ratio, the more efficient the bank

The Profitability Model: Core Income (3/4)

?

Why aren't provisions included in core income?

A. Banks should be making *regular, recurrent* provisions, and respond promptly to deterioration in asset quality. In reality, however, provision expense tends to show sharp peaks – often after on-site examination – and troughs (near the end of the year when some banks "adjust" provision expense to meet earnings targets.

The Profitability Model: Core Income – Conclusion (4/4)

Core income must be sufficiently HIGH and sufficiently STABLE to handle normal and unusual provision expense.

If core income is weak or negative, there is very little chance the bank will survive.

There are not any reliable sources of income left for the bank!

The Profitability Model: Decomposition of Net Interest Income (1/5)

We can decompose Net Interest Income, just like we decomposed ROA...

NII = Interest Income – Interest Expense

And, in turn, II and IE can be decomposed into determinants, and *each one* can be analyzed for level, trend, and peer group comparison:

II = *amount* of interest-earning assets x *weighted average interest rate* on IEA

IE = *amount* of interest-bearing liabilities x *weighted average interest rate* on IBL

The Profitability Model: Decomposition of Net Interest Income (2/5)

Special names and relationships exist among these components of net interest income:

Weighted average interest rate on IEA or IBL:

Yield

Yield on IEA – Yield on IBL:

Spread

(IEA – IBL) / IEA:

Net Interest Position (Earning Power)

It can be shown that NII (as % of ave. assets) =

***f* (Spread, NIP, IEA/Ave. Assets)**

The Profitability Model: Decomposition of Net Interest Income (3/5)

Take a closer look at the spread – 4 scenarios:

1. High YA, High YL → average spread
2. Low YA, Low YL → average spread
3. High YA, Low YL → high spread
4. Low YA, High YL → low spread

1 and 2 are not equivalent – why?

In general, we are concerned by a high YL – could mean bank is having trouble attracting funds

***Aggregate* spread of banking sector often used as index of competitiveness**

The Profitability Model: Decomposition of Net Interest Income (4/5)

Take an even deeper look at the spread...

Understand the factors that influence YA and YL:

If YA, for example, is high relative to peer group, look at two determinants:

1. **Composition of IEA – is bank investing more heavily in assets that typically earn higher rates?**
2. **Yields on individual types of IEA – is bank charging or collecting higher interest rates on certain assets?**

The Profitability Model: Decomposition of Net Interest Income – conclusion (5/5)

Net Interest Income will be favorable *if:*

- **Spread is high**
- **Net Interest Position is high**
- **Bank has high IEA relative to TA**
- **Or some combination of above**

Necessary to analyze *all* above components to understand why NII is weak or strong!

The Profitability Model: Other Components of Core Income

Fee and Commission Income:

- **Includes fees for issuing guarantees, letters of credit, performing payroll services, plus service charges on deposits, late fees on credit cards, etc.**
- **Depends mostly on the level of competition and the overall level of economic activity**

Net Trading Income:

- **Depends on volume of trading activity, volatility of prices of securities, derivatives, etc., and skill of traders**

Operating Expenses:

The Profitability Model: Operating Expenses (1/2)

Banks cannot control general level of interest rates, exchange rates, level of economic activity, state of competition...

BUT:

They have STRONG control over their operating expenses

Excessive operating expenses, relative to similar banks, reveal poor management

Tell bank if operating expenses are high!

The Profitability Model: Operating Expenses (2/2)

Operating expenses (also called "general and administrative expenses") consist of:

- Personnel expenses
- Rents
- Utilities (including telecommunications)
- Marketing expenses
- Professional service expenses (auditing, legal, security)
- Depreciation on fixed assets
- Stationery, postage, other office supplies
- Amortization of intangible assets

If operating expenses are high or rising, determine the cause – which component?

If personnel, calculate average salaries or number of employees/TA and compare to peer group

Summing Up: Threats to Profitability – a Risk-Based Approach

Profitability model can be used to organize our understanding of the *threats* to profitability:

NII is threatened by:

- **Nonperforming loans (decreases NIP)**
- **Unfavorable interest-rate movements (if bank is exposed to interest-rate risk) (decreases spread)**

Fee/Commission income is threatened by:

- **Increased competition**
- **Decline in level of economic activity**

Operating expense is threatened by:

- **Lack of proper control over expenses, poor budgeting**

Provision expense is threatened by:

- **Rise in nonperforming loans (increases necessary expense)**

Net gain/loss due to exchange rate fluctuations is threatened by:

- **Unfavorable exchange rate movements (if bank is exposed to FX risk)**

Profitability is a window on management's success or failure!