Commercial Bank Charge Offs – The Need for a System View

May 15th, 2011
Key Points

• Commercial Bank Asset Correlations Change in Time
  – Risk Diversification Changes in Time
  – Lack of Risk Diversity Can Hurt at the Wrong Time

• Reversion to Trend Has Long Cycles

• Views of Networks of Relationships are Needed
  – Asset Correlations Changing in Time
  – Client/Customer Cash Flows Changing in Time
  – Quasi and True Experimental Designs to Understand Network Effects
  – Cause and Effect Relationships Among Agents – Predictive not just Descriptive
Most Importantly: A Taxonomy of Uncertainty May Be In Order

• Level 1: Complete Certainty
• Level 2: Risk Without Uncertainty
• Level 3: Fully Reducible Uncertainty
• Level 4: Partially Reducible Uncertainty
• Level 5: Irreducible Uncertainty

• Video lecture available at http://mitworld.mit.edu/video/794
Commercial Bank Asset Correlations Change in Time

Source: Federal Reserve
Reversion to Trend Has Long Cycles

Commercial Bank
Moving Cumulative Charge Off Rate
(10-year Sum)

Source: Federal Reserve
Various asset categories show correlations among themselves during any given period of time.

For example, from 1991Q2 through 1993Q1, shows strong, positive correlations between business loans, leases, and agricultural loans. The business sector shows strength in this period with respect to charge-offs – lower charge-offs (green) means better creditworthiness.

Note: Correlations are tied to % of assets charged off in each asset class.
Views of Networks of Relationships are Needed (2/11)

Correlation Matrix
Quarterly Change of Charge-off Levels Over 8 Rolling Quarters
1993Q2 -> 1995Q4

Through beginning of have benign, positive correlations.
Views of Networks of Relationships are Needed (3/11)

here is a bit of credit deterioration in the mid-cycle among consumers. Diverse portfolio dampens the effect on a portfolio of bank loans and leases.
Views of Networks of Relationships are Needed (4/11)

A\n
ssets are largely unchanged from mid through the beginning of diversification continues to help.

Source: Federal Reserve
Strong positive correlations among deteriorating assets offer little diversification through the recession—both consumer and commercial loans and leases deteriorate.
Views of Networks of Relationships are Needed (6/11)

Correlation Matrix
Quarterly Change of Charge-off Levels Over 8 Rolling Quarters
2001Q2 -> 2003Q1

Portfolios diversify a bit...
Views of Networks of Relationships are Needed (7/11)

Positive benign correlations mark the mid-cycle once more…
Portfolios diversify a bit, but there is a bit of deterioration in some asset classes…
Views of Networks of Relationships are Needed (9/11)

s went residential real estate, so went other assets through the credit and liquidity crisis…

 Studying dynamic system relationships, especially as agents adapt with new behaviors, is a promising frontier for managing risk and optimizing risk-adjusted returns

Source: Federal Reserve
Views of Networks of Relationships are Needed (10/11)

Positive benign correlations helped the recovery of bank balance sheets...
Views of Networks of Relationships are Needed (11/11)

Positive benign correlations mark the mid-cycle once more…

Correlation Matrix
Quarterly Change of Charge-off Levels Over 8 Rolling Quarters
2009Q4 -> 2011Q3