



**CAFRAL Advanced Credit Management Program (Overseas Leg)
New York, USA**

Takeaways from CAFRAL Advanced Credit Management Program Overseas Leg

The Centre for Advanced Financial Research and Learning had organised an international program in association with Stern School of Business, New York University (NYU Stern) in the month of September 2017. The overseas leg of the program was held at NYU Stern campus at New York from September 25 - 29, 2017. This is the first program conducted by CAFRAL in association with NYU Stern.

Summary / Takeaways

1. Financial Architecture

Financial architecture of an economy is a network of financial institutions and a set of financial transactions between them. A strong financial structure is expected to offer efficiency, innovation, fairness, competitiveness, stability and robustness to the economy. It stands on two legs - Information Infrastructure comprising market data, research, ratings, diagnostics, compliance and Transactions Infrastructure comprising payments, exchange, clearance, settlement and custody. US Financial Services sector has evolved hugely from 1950 to 2017. Global crisis of 2007 has accelerated the financial sector reconfiguration. US banking system has grown more concentrated, but measured against the size of the economy not as much as in other countries. Bank consolidation has reduced the number of banks in the country and there is a trend of rising mega banks in USA. Over the years more innovative products have been introduced. Stringent macro prudential supervision is in place to boost the robustness of the US financial system.

2. Financial Distress and Restructuring

Z- Score, Z' Score or Z''- Score Models could be more accurate, which use various ratios with specified weightages to arrive at some score. A general linear form of Z score is calculated as: $Z = a_1x_1 + a_2x_2 + a_3x_3 + \dots + a_nx_n$, where coefficients $a_1 \dots a_n$ are weights assigned to the variables x_1 ,

$x_2 \dots x_n$, which are ratios derived by using various parameters such as working capital, total assets, retained earnings, earnings before interest and taxes (EBIT), market value of equity, book value of total liabilities and sales. Z' score and Z'' score are modified Z score models used to predict private firm and corporate bankruptcy.

3. Credit Derivatives

The concept of credit derivatives was first conceived in 1992 and was introduced by J P Morgan. It grew rapidly before it collapsed during the 2007- 08 crisis. Various regulatory interventions have since been introduced to protect the consumers of these high risk products. Credit derivatives are used primarily to isolate the credit risk and to hedge/ reduce the credit risk.

Basic product categories are:

- Replication products
- Event-triggered products
- Embedded products

Benefits of Credit Derivatives:

- Reduction of transaction costs;
- Making credit markets more efficient;
- Replacement of judgmental actuarial methods by hedging-based option pricing methods;
- Permits arbitraging between different markets for credit risk.

Credit Default Swaps (CDS) market has been growing in the last decade, providing investors an opportunity to hedge/speculate on the underlying credit risk. However, the endogenous nature of payoff contingency could create economic disincentives among creditors with CDS, despite its merit to enhance creditors' bargaining power and deter strategic default by shareholders. Given the rising debt takeovers and various bankruptcy strategies in distressed-debt investments by vulture investors, various stakeholders of a firm have to carefully take into account CDS feedback effects in analyzing corporate restructuring processes and outcomes. As credit events are case-specific, legal aspects of CDS contracts have to be further examined and better understood by various market participants.

4. Capital Structure and Financial Policy: Valuation Implications

Valuation of a firm is important to support decision making. There are two ways to assess the value: a) Account approach and b) Economic Approach. Firm's value may be enhanced by creating and sustaining a positive spread between the Return on Invested Capital (ROIC) and Weighted Average Cost of Capital (WACC). The firms need to develop a financial policy which minimizes the WACC of the firm. The current capital structure of the firm may be determined in terms of market value and may also be evaluated relative to competitors in the industry. The capital structure of the firm may include both debt and equity. Firms can use leverage to have the capital structure best suited for them. There is a moderate tax advantage to corporate borrowing for companies that are reasonably sure they can use the interest tax shield. However, the losses associated with financial distress then must be traded off against the interest tax shields. Firms should increase the use of debt financing to the point where the marginal value of the tax shields on additional debt is just offset by the increase in present value of the potential costs of financial distress. Excess cash in the firm lowers reliance on external financing, disentangles investment from cash flow variability, insulates itself from information asymmetry and financial market conditions and may preserve the value of intangible assets. However, it reflects inefficiencies in resource allocation and may also result in loss of tax benefits.

5. Credit Monitoring – Traditional Approach to Risk Measurement

Traditionally Experts relied on 5 C's to measure credit risk – Character, Capital, Capacity, Collateral and Cycle. However, consistency and subjectivity are two major concerns for this system. Regulators urge upon the large banks to have their own internal rating system which is transparent, validated using large amount of data, flexible and responsive to changing conditions. Rating is decided based on credit score models viz. linear probability model, Logit model, Probit model and Discriminant Analysis model. Problems with credit scoring are that they are based on historical accounting ratios and not on market value and assume linearity. CreditMetrics is a very useful model for evaluating credit risk across entire organization, and provides a statement of value-at-risk (VaR) caused by any credit event.

6. Consumer Credit

In USA large and important credit classes can be divided into five major categories - Mortgage; Home Equity Revolving; Auto Loan; Credit Card and Student Loan with Mortgage loan having the biggest share. In consumer lending sophisticated financial institutions have unsophisticated consumers in need of protection. CARD Act 2009 has been introduced to help protect consumers by prohibiting various unfair, misleading and deceptive practices in the credit card market of USA. The Act has resulted in decline in overall profitability; but no effect on credit limits, new accounts, or Average Daily Balance and consumer demand remains unaffected. The nudge has noticeable effect on payoff behaviour although no evidence that it increased aggregate payments. Reduction in credit volume is also not noticed.

7. Structured Finance

Structured Finance is the umbrella name for financing techniques tailored to suit special needs or constraints of issuers or investors. Securitization is a structured finance process that distributes risk by aggregating debt instruments in a pool, then issuing new securities backed by a pool. Risk on the asset pool equals the risk of the bonds issued. But risk allocation is more efficient as most of the risk is taken by parties willing to bear it. Risk transfer is a big advantage to the issuer of the security. It also reduces funding cost and improves fund diversification. The advantage for the investors is it adds new classes of assets for better portfolio diversification independent of originating entity. But complex structures and dependency on ratings agencies make investors' position difficult. Risk management of Structured Finance products is complex, goes far beyond traditional credit risk management in conventional lending business. Complexity calls for multiple quantitative and qualitative approaches instead of single quantitative approach.

8. Regulatory and Stress-Test aspects of Credit Risk

The stress is a general macro-economic scenario over say a three year period, when the shock

is significant enough to cause recession and impact both bank's balance sheet and income statement and thus its capital position. Stress Tests are meant to deal with changing risk weights in certain periods and how much does bank capital fall during a stressed period. European Authority conducted stress test in 2016 covering 51 banks with minimum 30 billion Euros in Assets. Focus of impact of stress test was on credit risk, market risk and operational risk. There has been significant shift in the objective of stress test from 2011 to 2016. During 2011-14 the goal was to identify capital shortfall as a result of shock and during 2014-16 the goal was to advise forward looking capital as the CET1 average is much above Basel requirement.

9. Project & Infrastructure Finance

Infrastructure financing is generally meant for essential services or public goods with long gestation periods and are capital intensive. The various risks in infrastructure financing and the possible risk mitigants are:

Key Risk	Mitigants
<p>Construction/ Completion Risk</p> <ul style="list-style-type: none"> - Project may not be completed on schedule, may incur cost and other budgetary overruns and/or fail to achieve commercial acceptance for technical reasons 	<ul style="list-style-type: none"> •Fixed-price, date-certain turnkey EPC contracts •Cost-sharing arrangements and contingency cushions •Experienced contractors and proven technologies •Third-party detailed engineering studies •Brownfield versus greenfield
<p>Market/ Competition Risk</p> <ul style="list-style-type: none"> - Projected cash flows may fall short of expectations due to weak volume demand, price pressures and/or higher-than-anticipated operating and maintenance costs 	<ul style="list-style-type: none"> •Long-term concessions •Third-party market sensitivity analyses •Monopolistic and regulated goods and services •Take-or-pay off-take contracts, tolling arrangements and dedicated supply agreements
<p>Operational Risk</p> <ul style="list-style-type: none"> - Project may experience production disruptions and unplanned outages due 	<ul style="list-style-type: none"> •O&M agreement with experienced operator

<p>to technical issues, poor maintenance and/or force majeure events such as earthquakes or hurricanes.</p>	<ul style="list-style-type: none"> •Business interruption and casualty insurance policies •Technical audits, product warranties and latent defect guarantees •Maintenance schedules and reserves
<p>Political/ Sovereign Risk</p> <ul style="list-style-type: none"> - Once operational, project may be subject to increased taxation, regulatory regime changes, growing pressure to renegotiate contract terms and/or outright expropriation 	<ul style="list-style-type: none"> •Political risk insurance •Off-shore cash lockboxes •Choice of governing law and arbitration forum •National government, multi-lateral financial institution and sovereign agency involvement
<p>Financial Risk</p> <ul style="list-style-type: none"> - Project must be structured to facilitate the raising of significant amounts of capital, including both debt and equity funding, from a variety of sources and markets 	<ul style="list-style-type: none"> •Joint venture ownership agreements •Non-recourse and limited recourse financing vehicles •Reliance on cheaper debt capital •Limit on number of financial counterparties during construction period

10.Strategic Positioning, Execution and Performance

A firm's Strategic Positioning and Execution is supposed to:

- Access sustainably profitable markets and achieve market leadership;
- Harvest all available scale of economies and operating efficiencies;
- Exploit available revenue and cost economies of scope and avoid diseconomies and conflict of interest exploitation;
- Deal effectively with integrated risk control;
- Mitigate bankruptcy risk while avoiding conglomerate discount.

Compiled by CAFRAL Team