Early Warning Indicators for Preventive Banking Supervision

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Early Warning Indicators
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I - Introduction

The State - of - the art theory of Banking Supervision consists in taking preventive measures in order to avoid any type of crisis in the financial sector by predicting, in advance, any major change in factors that may weaken the situation of this sector as a whole, or the situation of any specific unit that may contaminate the sector. The earlier the changes are detected the more efficient the treatment will be.
The ability to monitor the financial system stability and soundness, needs **INDICATORS** that can be used as a basis for analyzing the current health and stability of the Financial System. These Financial Soundness Indicators (FSIs) comprise:

1) Aggregated **Micro-Prudential Indicators** of the health of individual financial institutions.

2) **Macroeconomic Variables** associated with **Financial System Soundness**.

3) **Indicators** of market perception.
A- The Basel Committee on Banking Supervision (BCBS) issued in October 2010 a report entitled “BCBS Response to the Financial Crisis: Report to the G20”.

In the second section of this report, the Committee insisted on the “Macro Prudential Measures”, to help addressing:

• Systemic Risks
• Interconnectedness that may lead to a contagion effects
B- In the *Basel III Accord* (June 2011) it is clearly stated that the BCBS is introducing a number of macroprudential elements into the capital framework, to help contain systemic risks arising from *procyclicality* and from *interconnectedness* of financial institutions.

C- Later on, in September 2012, the BCBS issued the new “*Core Principles for Effective Banking Supervision*” (during the ICBS meeting in Istanbul).
I – Introduction (Cont.)

In this new version of the Core Principles, the key advances in the regulatory thinking include the following:

• *Supervisory attention on Systemic importance of banks.*

• *Adopting a broad financial system perspective that includes both Macro and Microprudential elements of effective supervision.*

• *Adopting a crisis preparation and management strategies with orderly resolution frameworks.*

• *Fostering robust Market Discipline, Corporate Governance, Disclosure framework and Transparency.*
D- Finally the B.I.S. issued a “Working Paper” (#421) in August 2013, entitled “Evaluating Early Warning Indicators of Banking Crisis”.

All these documents focus on indicators that need to be scrutinized permanently by the supervisors, to help them performing a preventive supervision.
The Early Warning “Micro” indicators are commonly derived from the “CAMELS” approach.

With regards to macroeconomic impulses, empirical analysis has shown that macroeconomic indicators can signal imbalances that affect financial systems and have often pre-dated financial problems. For this reason, vulnerability assessments need to take into consideration the broad macroeconomic picture, particularly factors that affect the economy’s vulnerability to capital outflow and currency crises.
I – Introduction (Cont.)

The analysis of such quantitative variables needs to be completed by more **Qualitative Judgments** on the adequacy of institutional and regulatory arrangements *vis - à - vis* the risks being run by the financial system, including issues such as:

* The Quality of Supervision and Regulation
* The Legal Framework
* The Accounting and Disclosure Standards
* The Incentive Framework…

*Macrosupervision is often assimilated to the prevention of systemic risk*
II - Importance of Macro prudential Supervision

Macro-prudential analysis needs to identify:

- The **Trends** in the Economy and in the Financial System, which have implications for Financial Stability and as a result for Macroeconomic Stability.

- The **Interconnectedness** which can be a source of strength or weakness in a financial system. *(A connected system where all components are sound can be a source of resilience. However, if any segment is weak, this can be a source of vulnerability and facilitate contagion).*

- The **Measures** which could be taken to address the resulting Risks.
II- Importance of Macro-Prudential Supervision

The lack of a system-wide macro-prudential approach of supervision and the failure to specify and use macro-prudential levers to offset systemic risks, were far more important to the origins of the global crisis than any specific failure in supervisory process relating to individual banks.

P.S.: In the London G 20 Summit declaration of April 2009, it was clearly stated: “Reshape our regulatory systems so that our authorities are able to identify and take account of macro-prudential risks”
III – Early Warning Indicators & Tools

The major Early Warning Indicators should include trends:

- On the Placement side:
  - Extension of credit to the economy
  - Credit pricing
  - Borrowers’ leverage and the implications for the risks which both borrowers and lenders are running
  - Leverage of the banking system, whether at the institutional level (Capital to Asset ratio) or embedded in collateral margins
  - Trend of Asset prices (Property, Equity and Securitized Papers - through CDS’s) and their eventual relationship.
III – Early Warning Indicators & Tools

- On the Sources of Fund side:
  - Pattern of maturity transformation and resulting liquidity risks *(short term through LCR and Long Term through NSFR)*
  - Increase or decrease in Maturity Mismatches
  - Stability of the Source of funds "Client Based Funding" or "Money Market Funding"

**BCBS issued new short term and long term liquidity ratios that help supervisors and bank managements to better monitor the needs of cash under normal and stressful situations.**
IV- Preventive Supervision framework in Lebanon

The Banque du Liban (BDL) focuses on monetary policy analysis as required by different economic targets, and to stabilize the market during Times of Stress.

The Banking Control Commission (BCCL) focuses on the supervision of individual institutions, and on wider sectorial and system-wide risks.

The Global prudential mission and the definition and use of Early Warning Indicators, is conducted between these two authorities.
V- Macro Prudential Supervision in Lebanon: Practices & Examples

1- BDL has established a joint working Group with the (BCCL) to:

- Bring together insights from macro, sector-wide and Bank-specific analysis, and

- The actions to be taken translate the said analysis of risks into Macro-Prudential Policy Measures.
V- Macro Prudential Supervision in Lebanon: Practices & Examples (Cont.)

2- BCCL is conducting on a *Monthly basis* a deep analysis of a set of Early Warning Indicators that relates to:

- Distribution of Deposits
- Banks’ Sovereign Exposure
- Aggregate Income Statement of the Banking System
- Major soundness indicators of the Lebanese Banking System

This followed the two IMF FSAP missions in 1999 and 2001 and the periodic Article IV Assessment missions
V- Macro Prudential Supervision in Lebanon: Practices & Examples (Cont.)

Lebanon is participating to the Financial Soundness Indicators (F.S.I.) program of the I.M.F.:

We publish quarterly, on the I.M.F. site:

• The Core Indicators

&

• The Encouraged Indicators

These indicators are analysed by the team of Experts (joint BDL / BCCL), who suggests the necessary measures to be taken for preventive actions.
3- Since the political turbulences of February 2005, the BCC monitors on a **Daily Basis**:  

- Global liquidity position through: daily conversion between the local currency and foreign currencies (in both sides) because Lebanon is a highly Dollarized Economy (presently 65.5%)  

- Non - Trade - Related Transfers (In & Out of the Banking System), to detect any funds outflow from the system.  

- Interbank Transactions & Interbank Rates: (LC and FC’s) in order to measure the reliance of the banking sector on the interbank financing.
V - Macro Prudential Supervision in Lebanon: Practices & Examples (Cont.)

4- Close Monitoring of Large Exposure Borrowers in banks:
The BCC assesses on a periodic basis (Monthly), through a Specialized Department “Large Exposure Department” the:

- **Financial Performance of large Debtors:** Individuals, Companies and Groups (above $15 Million) Total Exposure in the banking sector, in order to early identify weaknesses and areas of risk, and give recommendations to banks to take appropriate measures to avoid Large Losses.

- **Large Non-Performing Loans**, in order to draw a rescheduling and / or refinancing scheme (if possible), to help the customers resuming their activities, which has a positive impact on the economy as a whole and avoid the burden of new Loan Loss provisions in banks.
V - Macro Prudential Supervision in Lebanon: Practices & Examples (Cont.)

4- Close Monitoring of Large Exposure Borrowers (Cont.)

Perform sector and industry studies & cross sector studies (sectors highly correlated with each other) especially those considered:

- **Highly volatile** (drastic change in commodity prices)
- **Highly leveraged**
- **Rapid expansion** (Real Estate, Telecom, Tourism sectors etc…)
- **Concentration risk**

**P.S.** This helps the BCC estimating LGD for banks that will move from the Standardized Approach to the Foundation Internal Rating Based Approach (FIRB) for measuring Credit Risk.
VI - Macro Prudential Supervision in Lebanon: Practices & Examples (Cont.)

- The Risk Assessment Department analyzes (semi-annually) the Capital ratios of Banks and F.I.’s:

A - Risk weighted C.A.R. with the 3 components:

* CAR I (Common Equity / RWA)
* CAR II (Tier I / RWA)
* CAR III (Total Equity / RWA)

B - A non-weighted Leverage Ratio (semi-annually):

* Tier I Equity / Total Assets (ON & OFF B/S)

P.S. The results of this analysis are used to prioritize Pillar 2 missions.
V - Macro Prudential Supervision in Lebanon: *Practices & Examples* (Cont.)

C- ICAAP (annual), which is a Capital Planning exercise, including quantitative and qualitative analysis of Bank’s Systems, Procedures, Management, Asset quality etc... Under **Normal** and **Stressful** circumstances.

The results of this exercise are analysed (**off-site**) and assessed (**on-site**) through SREP missions in banks (Pillar II).
C.A.R. under Pillar 2

In application of the Supervisory Review Process (SREP), BCCL has developed an internal Capital Adequacy Assessment Methodology (CAAM) that has been tested in many banks. The methodology consists of assessing a bank’s Internal Governance and its Management for the different types of risks, based on the IC AAP results submitted by the bank which include:

1- **Internal Governance**: (B.O.D, Senior Management, Internal Audit, Internal Control, Risk Management Infrastructure)

2- **Generic Types of Risk**: (Credit Risk, Market Risk, Operational Risk)

3- **Specific Types of Risk**: (Interest Rate Risk in the Banking Book, Liquidity Risk, Concentration Risk, Strategic Risk)

4- **Stress Testing Practices**

   Each element is given a grade between 1 and 10 (10 being the worst grade)
C.A.R. under Pillar 2

As a result of the Assessment Methodology, an *Individual Capital Ratio (ICR)* is calculated for each bank by adding a scaling factor to the minimum CAR under Pillar I. The scaling factor is determined based on the total assessment grade as shown below:

<table>
<thead>
<tr>
<th>Total Assessment Grade</th>
<th>Scaling Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 20</td>
<td>[0%, 1%]</td>
</tr>
<tr>
<td>From 21 to 40</td>
<td>[1%, 2%]</td>
</tr>
<tr>
<td>From 41 to 60</td>
<td>[2%, 3%]</td>
</tr>
<tr>
<td>From 61 to 75</td>
<td>[3%, 4%]</td>
</tr>
<tr>
<td>More than 75</td>
<td>[4% and above]</td>
</tr>
</tbody>
</table>

Based on the results of the assessment, the B.C.C.L. considers some measures such as: requiring the bank to improve its risk management practices, closely monitoring the bank’s lending activities, restricting the expansion of the bank, imposing additional capital requirements etc...
V – Macro Prudential Supervision in Lebanon: Practices & Examples (Cont.)

6- The BCC analyses on a daily basis the CDS price of the Lebanese Bonds of different maturities.

7- BDL Monitors on a Monthly basis:
   • Average Cost of Funds (LL, USD, Euros, other currencies) for both Commercial & Investment Banks
   • Distribution of Weighted Average Interest Rates for short & long term loans (LL, USD, Euros, other currencies)
   • Interbank volume and prices paid, on a daily basis.
   • Sectoral distribution of loans
   • Evolution of N.P.L.’s, by sector
   • Real Estate price index
V– Macro Prudential Supervision in Lebanon: *Practices & Tools* (Cont.)

8 – The BCC requires Banks, Financial Institutions and Brokerage Firms to disclose, on a *Monthly Basis*:

* Investments in Bonds, Equities, Investment Funds and Structured Products.

*The assessment (Fair Value) of the gains or losses on these investments (Realized or Unrealized = FVTPL, FVTOCI, AC).

_This allows the BCC to take corrective actions proactively._

9- The Off – Site Department of the BCC analyses the corporate governance practices in banks and F.I.’s including:

• B.O.D. Composition (Nbr, Quality…)
• Composition and Chart of B.O.D. “Risk Committee”
• Composition and Chart of B.O.D. “Audit Committee”
10- The B.C.C.L. analyses, on a monthly basis the degree of concentration of Banks’ loan portfolios:

- Repartition of loans by sector
- Repartition of loans by country (of utilization)
- Repartition of loans by category (Corp., S.M.E., Retail, Housing, etc…)
- Repartition of loans by grading

In this respect, the B.C.C.L. asks banks to perform Stress Tests on their loan portfolio, more frequently in unstable markets (Syria, Egypt, Turkey…)}
VI - Conclusion

Early Warning Indicators are helping the Regulators, (BDL & BCC) to:
Focus, not just on the soundness of individual banks, but on broader financial stability objectives.
Manage a Long Term Reform of the Banking Sector, through a number of actions:

* Encouraging Merger & Acquisition operations
* Dealing Successfully (at an early stage) with weak banks
* Providing Liquidity in times of Stress:
  - 2005 (Assassination of Prime Minister Hariri)
  - 2006 (Israeli War against Lebanon)
  - 4th Quarter 2007 - Mid 2008 (Presidential Election Crisis)
  - 1st & 2nd Quarter 2013 – Government Crisis
Questions?

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