Macroprudential Surveillance:
Lessons from Bank of Jamaica

R. Brian Langrin
Head, Financial Stability Department
Bank of Jamaica

CARTAC/CACS/SVG FSA
CREDIT UNION WORKSHOP AND REGULATORY MEETING
CARIBBEAN ASSOCIATION OF CREDIT UNION SUPERVISORS
20 - 22 AUGUST 2014, KINGSTOWN, ST. VINCENT AND THE GRENADINES
Outline

• Presentation will be in the context of explaining the macroprudential mandate of a central bank

• Focus on key elements for macroprudential policy surveillance based on BOJ’s experience
  – coverage of macroprudential surveillance
  – communication of macroprudential surveillance
  – instituting macroprudential governance and legal frameworks
Coverage of macroprudential surveillance

BOJ’s external Financial Stability Report is the primary tool for communication to financial sector stakeholders

“The maintenance of financial stability by the Bank of Jamaica (BOJ) primarily concerns the safeguard of conditions which ensure the proper and efficient functioning of the financial system and consequently, the promotion of real economic activity.”

“The financial system consists directly of three basic financial components: institutions, markets and infrastructure. These components interact with each other as well as with other indirect participants in the system – such as households, nonfinancial corporations and the public sector – to allocate economic resources and redistribute financial risks.”
Coverage of macroprudential surveillance

**Balance sheet positions:**
- market & liquidity risk exposures (net funding position; loan-to-deposit ratio by currency; asset-liability maturity structure by currency; available-for-sale investment portfolio by currency)
- interest rate risk exposures (asset-liability re-pricing profile for interest bearing instruments by currency)
- foreign exchange rate risk exposures (net open position; asset-liability re-pricing profile by currency; breakdown of assets, liabilities & off-balance sheets positions by currency)
- credit risk exposures (breakdown of loans by sector; breakdown of loans by classification; breakdown of loans by currency; non-performing loans by sector)

**Macroprudential risk factors:**
- market & interest rate risk (daily asset price changes; daily zero-coupon domestic and global bond yield curves; duration of assets and liabilities; trading range for money market rates; interest rate historical correlations)
- credit risk (domestic & foreign currency loan rates for mortgage, commercial, installment, personal credit, domestic & foreign loan-to-deposit rate spreads, credit bureau data)
- exchange rate risk (daily exchange rates and historical correlations; loans to non-foreign currency earners)
- Inter-bank contagion risk (breakdown of asset and liability secured and unsecured exposures between each bank)

**Other macroeconomic data:**
- the pace of money and credit growth which tend to precede financial crises through speculative investment by financial sector participants
- movements in the REER and current account balance which may reflect losses in competitiveness and vulnerability of the economy to external shocks
- the adequacy of foreign reserves in maintenance of a currency stability and debt servicing
- movements in fiscal balances and and debt ratios as well as sovereign yield spreads and credit rating migration
- credit, inflation and capital inflow cycles
## Comparison of macroprudential and microprudential surveillance

<table>
<thead>
<tr>
<th></th>
<th>Macroprudential</th>
<th>Microprudential</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective</strong></td>
<td>Limit the likelihood of financial system-wide distress and avoid significant losses in real output</td>
<td>Limit the likelihood of failure of individual institutions and protect consumers</td>
</tr>
<tr>
<td><strong>Focus</strong></td>
<td>Financial system as a whole</td>
<td>Individual institutions</td>
</tr>
<tr>
<td><strong>View of risk</strong></td>
<td>Endogenous</td>
<td>Exogenous</td>
</tr>
<tr>
<td></td>
<td>(risk is seen as dependent on collective actions)</td>
<td>(risk is seen as independent of individual actions)</td>
</tr>
<tr>
<td><strong>Correlations and common exposures across firms</strong></td>
<td>Important</td>
<td>Irrelevant</td>
</tr>
<tr>
<td><strong>Calibration of prudential tools</strong></td>
<td>Top-down (calibrated with respect to cross-sectional and time dimensional risks)</td>
<td>Bottom-up (calibrated with respect to risks incurred by individual institutions)</td>
</tr>
</tbody>
</table>

Key elements of FSR communication on macroprudential surveillance

- holistic outlook of the financial system, covering the components of the financial system and their interaction with the real economy

- aim at influencing changes in behavior of financial sector participants that may pose systemic threats and advance their risk awareness

- reflect measurement and assessment of the potential direct and indirect impact of macro-financial developments on financial system exposures

- indicate reasons that the current value of indicators substantiate (or not) the need for policy action, the rationale underpinning the selection of instruments if action is required and tracking of impact on financial stability

- reflect assessment and monitoring of the debt-servicing ability of the corporate, household and government sectors and the potential for debt spillovers from vulnerable sectors to the financial system.
Institutional coverage - assets of Jamaican financial institutions (182% of GDP)

Financial sector dominated by commercial banks and securities dealers
Financial institutions surveillance...

**Financial Stability Cobweb**

Overall risk levels increased marginally

**Gaps from long-term trends**

Improvement in stability of the banking sector

Improvement in stability of the banking sector

Financial institutions surveillance…

CCA distance-to-default for banks*

CoVaR for banks**

Volatile market-based systemic risk measures

Financial markets are active but still developing.
Financial markets surveillance…

**Composite Indicator of Systemic Stress**

- Deterioration in domestic financial market conditions

**Jamaica-EMBI+ Global bond spread**

- Demand for FX rate hedge rises

Financial markets surveillance…

Spreads of GOJ bond yields & 180-day Treasury bill rate

TRE spread

Fiscal efforts drive decline in yields after both debt swaps

Increase in counterparty risk coincides with tight liquidity conditions
Financial markets surveillance…

Amihud Index of FX market depth

Low levels of market depth

Amihud Index of stock market depth
Vulnerabilities of indirect financial system participants

Households
- NPL to loans
- Loan to value
- Debt service to income
- H/H credit to GDP
- Growth in mortgage credit

Non-financial firms
- NPL to loans
- Debt service to income
- Number of bankruptcies
- Credit concentration
- Firm credit to GDP

Government
- Debt to GDP
- Debt service to revenue
- Ext. debt service to exports
- Interest payments to GDP
- Fiscal stability ratio

Probabilities of default

Exposure at default to capital of financial sectors
Improvement in H/H loan quality despite growing indebtedness
Corporate sector surveillance…

Growth in corporate debt held by banks

Corporate sector NPLs to corporate loans

Leverage ratio for listed companies

Improvement in corporate sector loan quality despite higher leverage

Public sector surveillance...

Growth in public sector debt

Probability of sovereign default and bank exposure*

Public sector debt service to budget revenue

Lower GOJ probability of default reflect improvement in public sector performance

Financial institution stress test assessment

Sources of Financial Risks

Market Risk
- Equity Price Risk
- FX Rate Risk

Interest Rate Risk
- Value-at-Risk

Credit Risk
- Counterparty Risk
- Concentration Risk

Contagion Risk

Liquidity Risk
- Gap Risk
- Funding Risk

Interest Rate Risk
Market risk surveillance…

**Overall increase in VaR inter-quartile ranges**
Interest rate risk surveillance...

**IRR stress tests for banks:**
1100 bps increase in domestic rates

**Decline in IIR resilience for banks and SDs**
Credit risk surveillance…

Credit risk stress tests for banks:
30% increase in NPLs

Greater resilience of banks to credit quality shocks
Contagion risk surveillance...

**Network of exposures**

**Contagion stress test**

SD sector is most vulnerable to contagion
Liquidity risk surveillance…

**Gap analysis for SDs**

**Funding risk stress test for SDs: 10% withdrawal of repo liabilities**

Slight increase in liquidity risk exposure for SDs
Modern but still developing financial infrastructure
Payments and settlement risk surveillance...

**Risk Index of Payment Concentration**

**Share of BOJ intraday repos for 4 of 16 institutions**

**High liquidity concentration**

Payments and settlement risk surveillance…

Volume of DvP trades for GOJ securities

Values DvP trades for GOJ securities

Sharp decline in trading sovereign bonds following the debt exchange
Current Regulatory Structure
Recent enhancements to BOJ macroprudential framework (1)

- **Need for institutional requirements:**
  1. a clear mandate to which it can be held accountable with transparent and effective governance arrangements;
  2. legal access to the necessary time-critical information – especially relating to systemically important institutions, markets and infrastructure which may not otherwise be readily available; and
  3. control over a sufficient set of tools to address procyclicality, and externalities, such as rules to address gaps and imbalances, as well as power to implement time-varying countercyclical capital charges and dynamic provisioning requirements, capital conservation measures, LTV and debt service-to-income limits

- BOJ issued a policy discussion paper that clearly articulated the need to amendment of the CB Act to codify the financial stability mandate*

- Comprehensive legal framework will be put in place in 2014 to underpin the Bank’s responsibility for overall financial system stability

- Separation of decision-making (Financial Stability Committee) and policy implementation (under BOJ Act, FSC Act, statutes of other regulators)

Recent enhancements to BOJ macroprudential framework (2)

- In order to effectively discharge the financial stability function, new
draft provisions of the BOJ Act are:
  - mandate the financial stability objective of the BOJ
  - mandate the establishment, composition and tasks of an inter-
    regulatory financial stability committee
  - discretionary powers to provide liquidity
  - power to direct inspection
  - power to request information
  - power to issue rules, standards and codes
  - mandate to establish and update a central financial system
    database
  - mandate the publication of a financial stability report
Proposed Framework for Safeguarding Financial System Stability

Key Elements for an Effective Macroprudential Framework

- Goals of macroprudential policy
- Powers, governance procedures and functions
- Macroprudential policy transmission and surveillance
- Communication on macroprudential issues
- Emergency liquidity facility
- Crisis resolution procedures
Transmission channels of shocks between the real economy and the financial sector

Design of macroprudential policy

Operating Targets:
- capital adequacy
- asset side (liquidity exposure)
- liability side (liquidity funding)
- leverage
- maturity mismatch
- supply side (aggregate credit)
- demand side (aggregate debt)
- common exposures
- market structure
- payment and settlement systems
- other financial system reform

Intermediate Objectives:
- Financial Imbalances
- Externalities

Systemic Risk:
- Financial Institutions
- External Sector
- Financial Markets
- Financial Infrastructure
- Public Sector
- Non-financial Firms
- Households
Proposed Operational Structure for Financial Stability Policy
Planned enhancements to framework

- Although significant steps have been made, BOJ’s macroprudential policy framework is not yet complete
  - calibration of macroprudential tools (discretionary vs rule-based)
  - resolution mechanisms (eg. living wills) to minimize costs

- Establish macro-prudential risk oversight of SIFIs

- Use of ‘bottom up’ stress testing results

- Use of real estate price indices (largest asset class)

- Use of household and business financial surveys

- Regional consistency of macroprudential policies (cross-border regulatory arbitrage)

- Regional MPI benchmarking

- Include macroprudential policy implementation developments in FSR
THANK YOU!

Email: brian.langrin@boj.org.jm