

**CCMF/CARTAC/Caricom
Workshop on Regional Financial Stability
A Caribbean Architecture**

FSRs in the Caribbean: Jamaica

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Overview of Bank of Jamaica FSR

- Since 2005, a comprehensive set of macro indicators inform an annual financial stability report which provides a technical assessment of the main financial developments, trends and risks influencing the stability of Jamaica's financial institutions, markets and infrastructure.
- Analyses are aimed at ensuring that the overall financial system is robust to shocks and that participants are assured of its robustness.

8 Chapters

1. Financial stability overview
2. Macroeconomic environment
3. Global environment
4. Financial system developments
5. Banking system exposures
6. Risk assessment of the banking system
7. Payment system developments
8. Articles

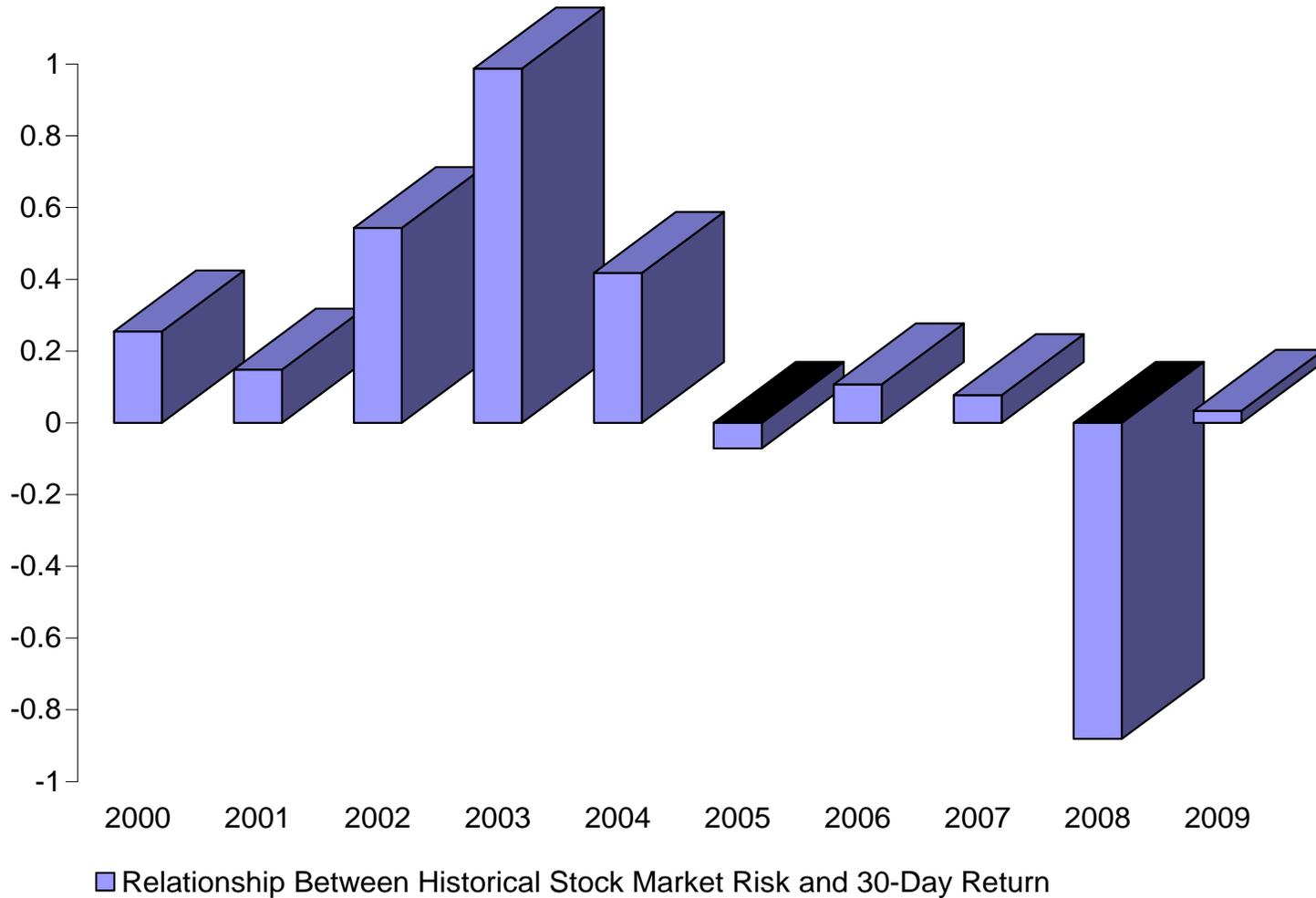
Financial markets

- **Fixed Income**
 - 99th percentile 10-day changes in market risk factors
 - Amihud index and Return to Volume indicator of market liquidity
 - Transaction spreads and volume indicators

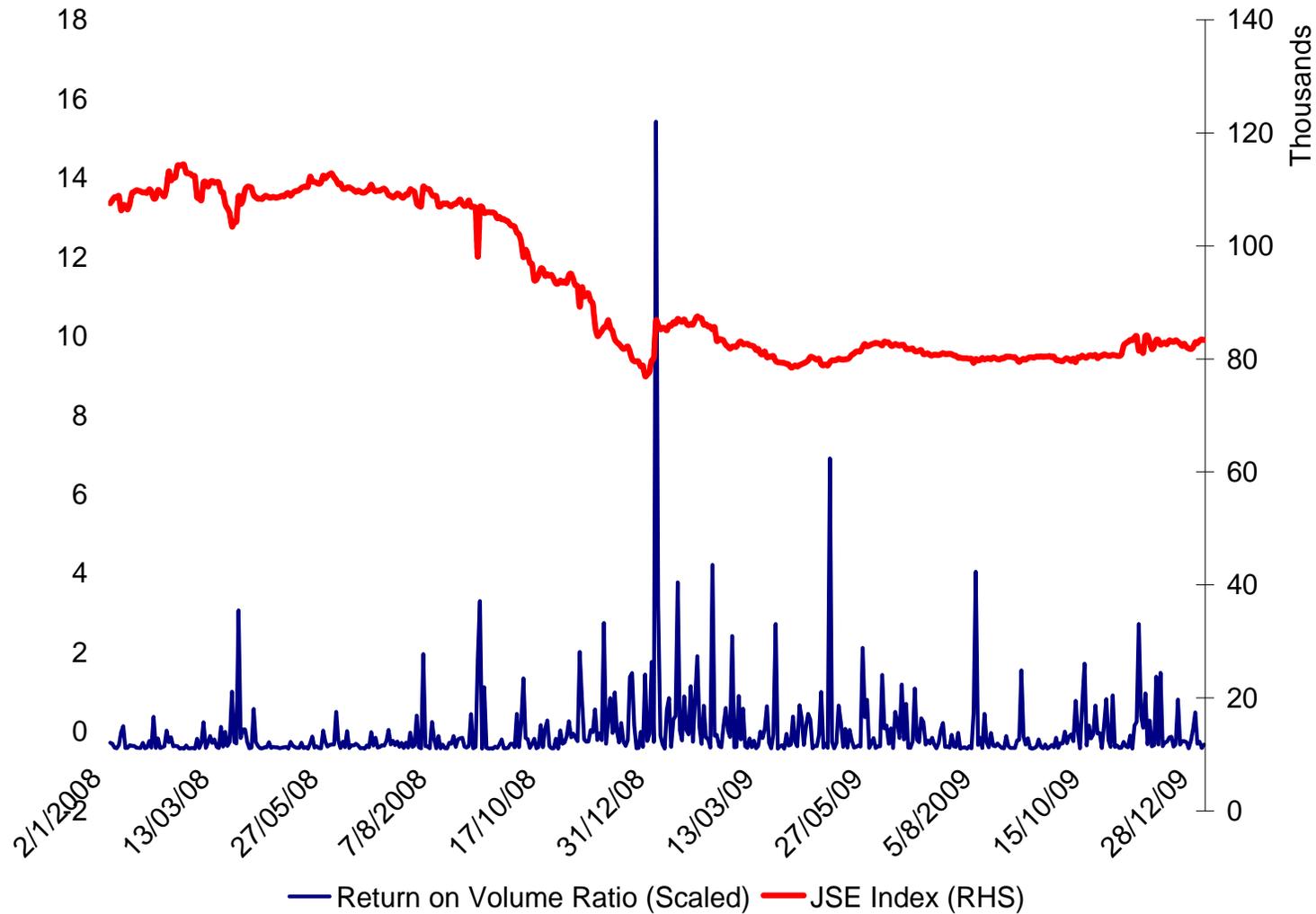
- **Foreign Exchange**
 - 99th percentile 10-day changes in market risk factors
 - Amihud index and Return to Volume indicator of market liquidity

- **Equities**
 - 99th percentile 10-day changes in market risk factors
 - Amihud index and Return to Volume indicator of market liquidity
 - Turnover ratio
 - Sharpe ratio

Financial markets (chart types – Stock Mkt. Risk Appetite)



Financial markets (chart types – Stock Mkt. Liquidity)

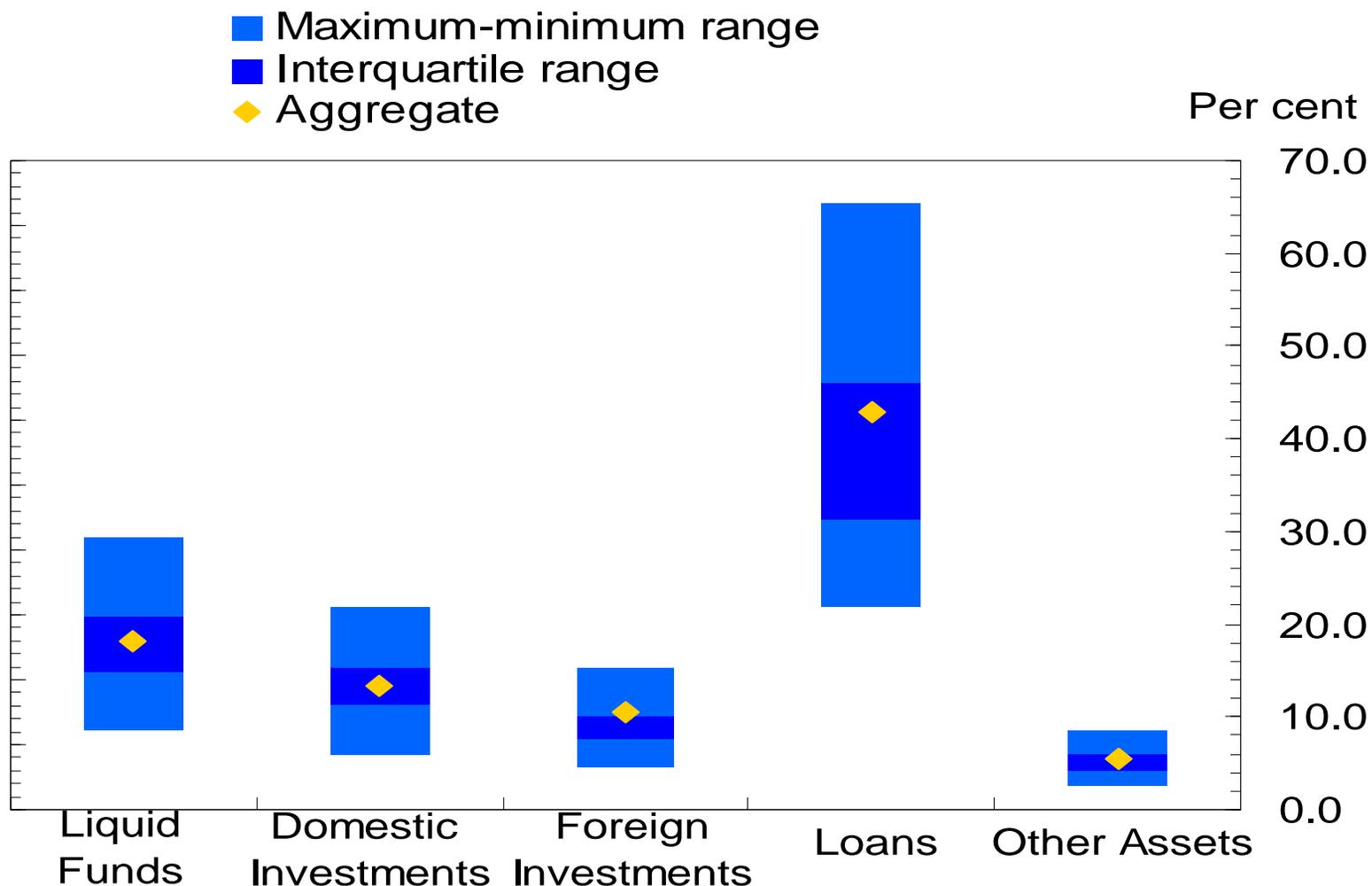


Financial institutions

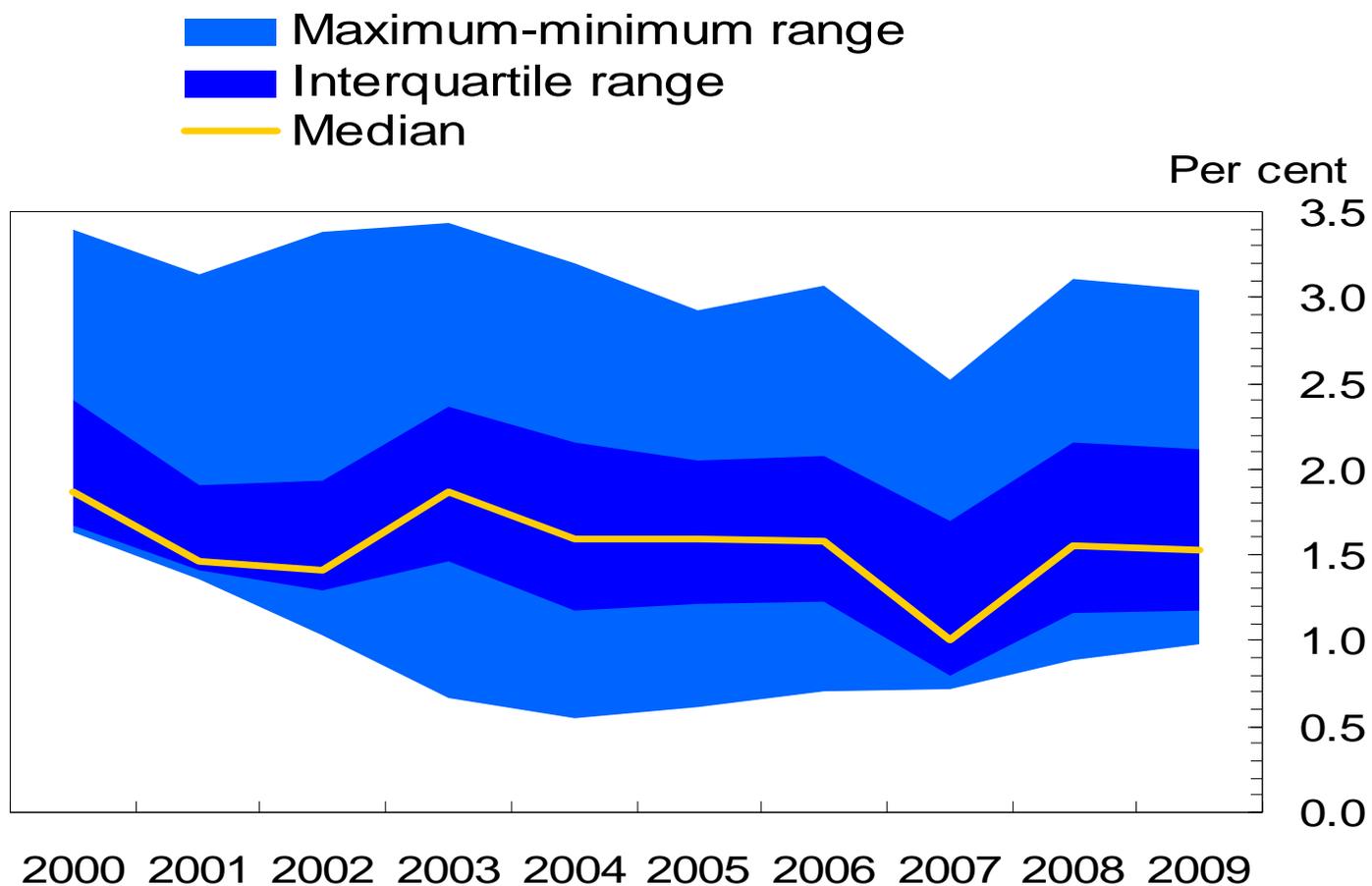
- Deposit-taking Institutions (commercial banks, merchant banks, building societies, credit unions)
 - asset positions
 - liability positions
 - non-performing loans
 - earnings and profitability indicators
 - capital adequacy and solvency indicators

- Non-bank Financial Institutions (securities firms, insurance co.)
 - asset positions
 - funds under management
 - return on assets/return on equity
 - other performance indicators

Financial institutions (chart types – Asset Shares)



Financial institutions (chart types - NIM)



Banking system exposures

- **Household sector**
 - debt-to-disposable income ratio
 - non-performing loans
 - h/h borrowing growth
 - Real GDP growth
 - credit card delinquency rate

- **Corporate sector**
 - corporate sector loans by sector
 - corporate bond spreads
 - non-performing loans by sector
 - ROA for publicly listed companies by sector

- **Public sector**
 - public sector debt-to-GDP
 - breakdown of debt by maturity, re-pricing & currency
 - debt sustainability indicators

Banking system risk assessment (1)

- **Market & liquidity risks**
 - 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**
 - asset-liability re-pricing profile for interest bearing instruments by currency

- **Foreign currency rate risk**
 - net open position
 - asset-liability re-pricing profile by currency
 - breakdown of assets, liabilities & off-balance sheets positions by currency

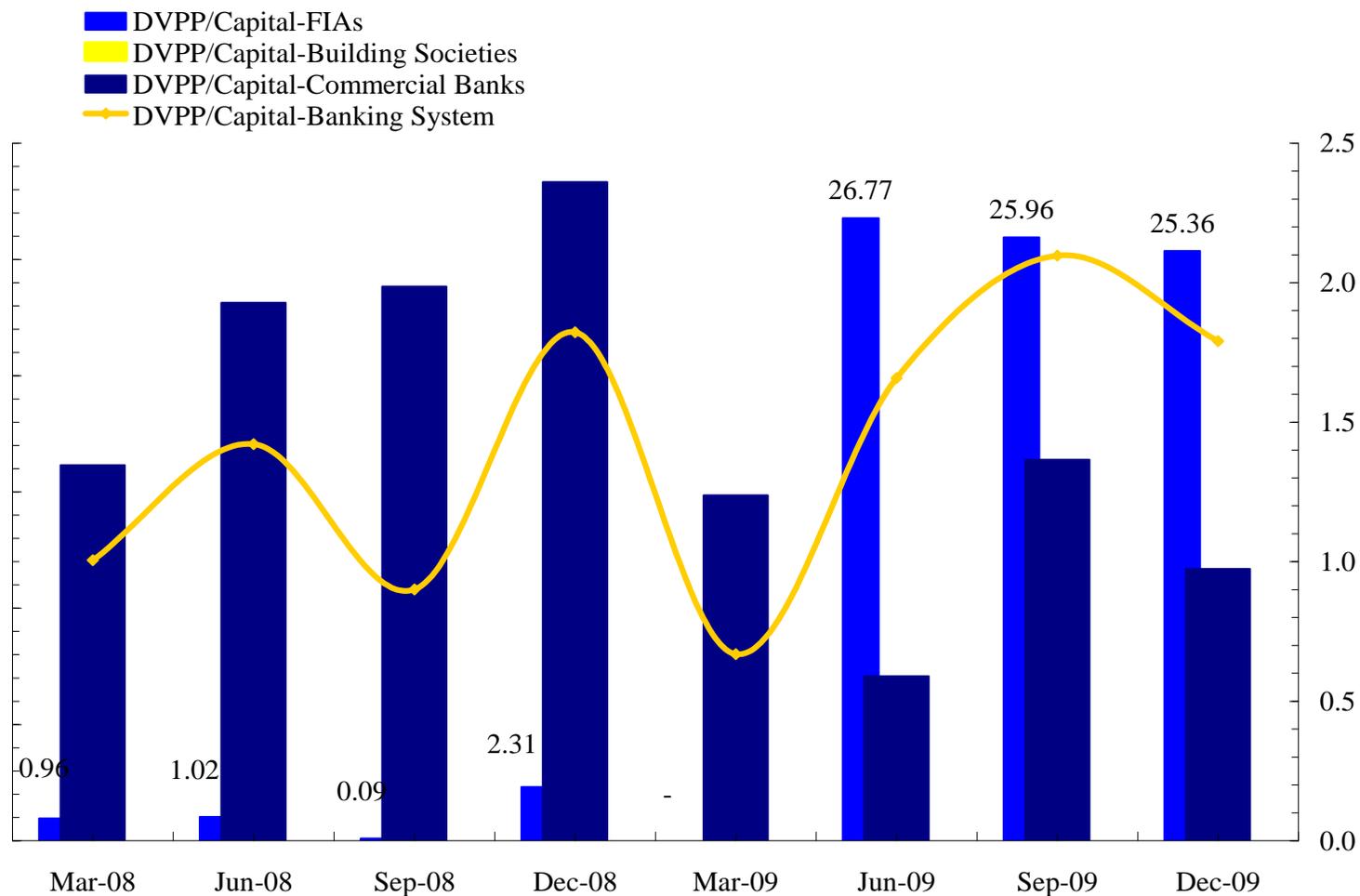
Banking system risk assessment (2)

- **Credit risk**
 - breakdown of loans by sector
 - breakdown of loans by classification
 - breakdown of loans by currency
 - non-performing loans by sector

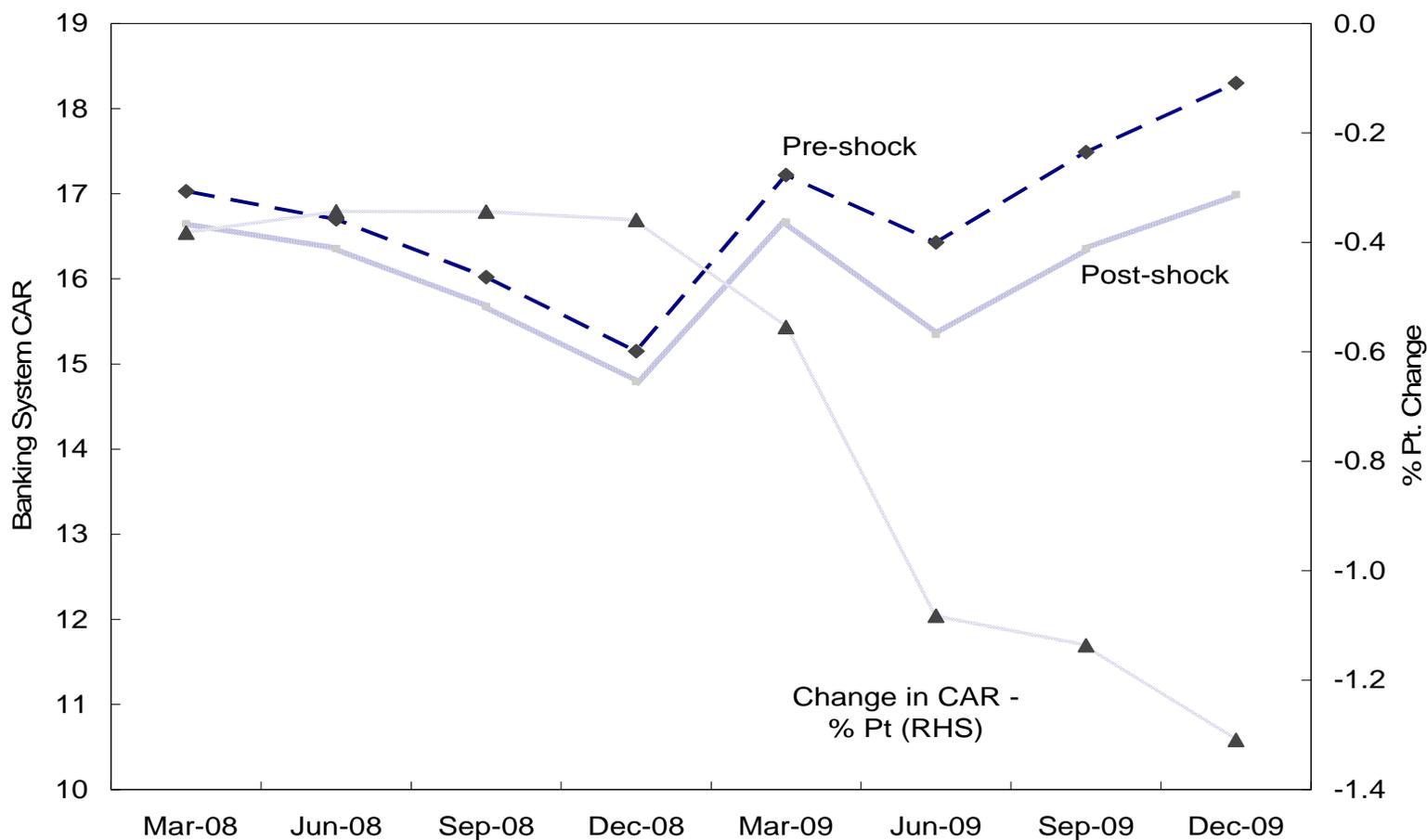
Stress testing of banking system – risk factors

- **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 (mortgage, commercial, installment, personal)
 - domestic & foreign loan-to-deposit rate spreads
 - credit bureau data (PD)
- **Exchange Rate Risk**
 - daily exchange rates and historical correlations
 - loans to non-foreign currency earners
- **Inter-bank Contagion Risk**
 - breakdown of asset and liability exposures between each bank

Stress testing of banking system (chart types- IRR)



Stress testing of banking system (chart types- NPLs shock)



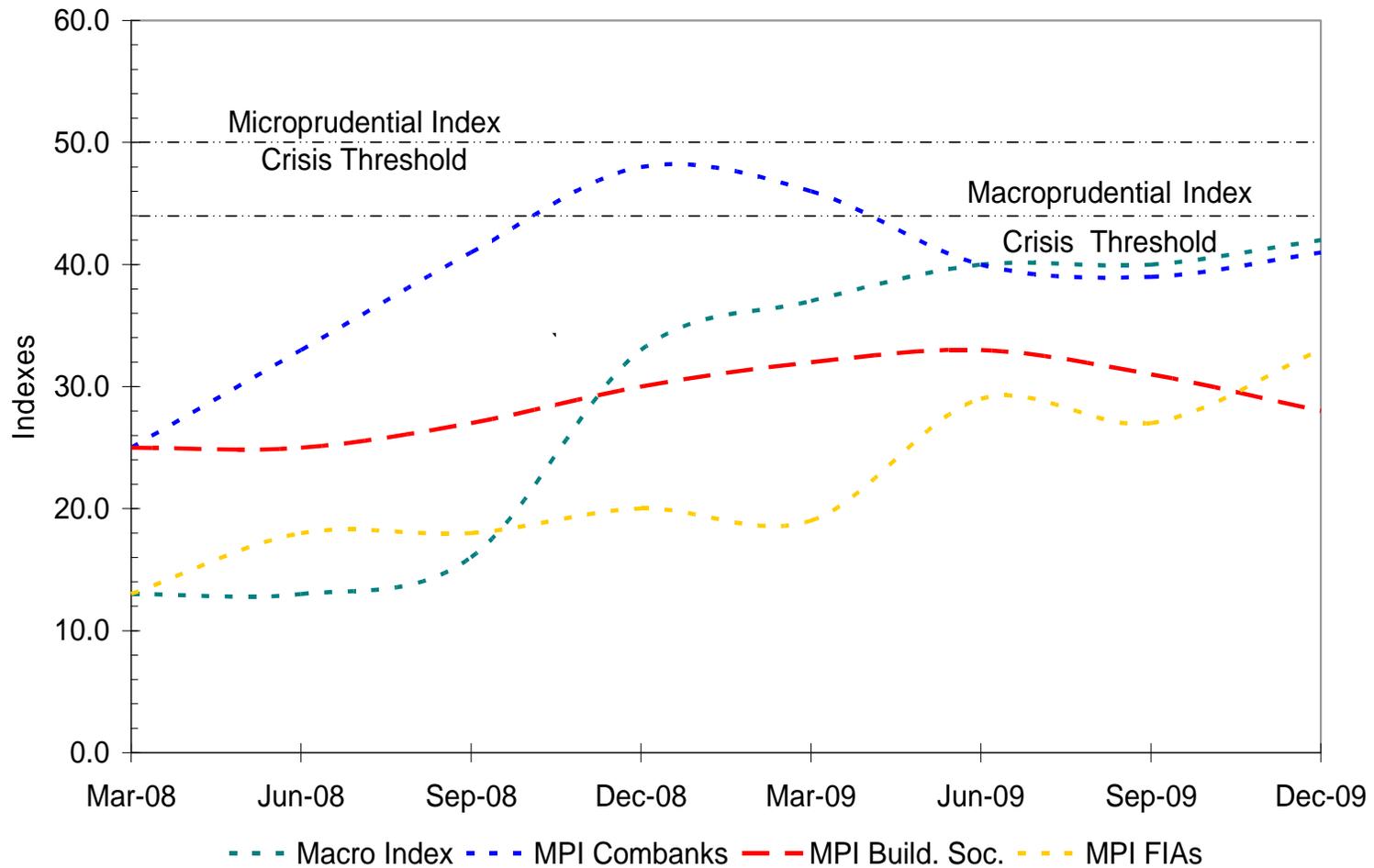
Systemic Risk Measures (1)

- Systemic risk assessment requires a clear and comprehensive understanding of the inter-linkages within, and the functioning of, the financial system as a whole.
- Inventory of composite financial stability measures/metrics to detect systemic risk :
 - Macro-financial forecasting model
 - Vector Auto-regression macro-micro model
 - Value-at-Risk models: historical, variance-covariance; monte carlo approaches; principle components; liquidity risk component
 - Non-parametric EWS model
 - Insolvency risk index
 - System dynamics model
 - Generalized Maximum Entropy (GME) model
 - CGE model
 - Various models for stress testing and scenario analysis

Systemic Risk Measures (2)

- Other financial stability measures (work-in-progress):
 - ❑ Financial Sector Projections and Stress Testing in Financial Programming
 - ❑ Composite Index of Financial Stability
 - ❑ CoVaR
 - ❑ Contingent Claims Measure
 - ❑ Distance-to-Default Measure
 - ❑ Network Analysis
 - ❑ Hedonic Real Estate Index

Systemic Risk Measures (chart types- EWS)



Payment system developments

- Currency in circulation as % of GDP & M1
- Cheque intra-/inter-bank volumes & values
- ABM/POS volumes and values
- Debit & credit cards in circulation
- LVTS volumes & values
- Payment & liquidity concentration risks

Articles

- **2005 FSR**
 - The Development of the Corporate Bond Market in Jamaica
 - 'Economic Capital' Approach to Risk Management
- **2006 FSR**
 - An Assessment of Concentration & Efficiency in the Jamaican Banking Sector
 - Calculation of Value at Risk: The Bank of Jamaica Approach
- **2008 FSR**
 - Insolvency Risk in the Jamaican Banking Sector: 2003 – 2008
 - Incorporating Market Liquidity into Market Risk Assessment of Banking System

Boxes

■ 2005 FSR

- Box 1. What is a credit default swap?
- Box 2 Financial Soundness Indicators
- Box 3. Types of Risk
- Box 4. Value at Risk
- Box 5. Stress Testing the Jamaican Banking System
- Box 6. ACH Contagion Risks

■ 2006 FSR

- Box 2.1 Description of Value at Risk (VaR) Computation in the Report
- Box 3.1 Declining US Housing Market
- Box 3.2 Regulation of Alternative Investments
- Box 4.1 Securities Firms' Funds Under Management: Implications for Financial Stability
- Box 4.2 Decomposition of Return on Equity (ROE) for Deposit-Taking Financial Institutions in Jamaica
- Box 6.1 Financial Stability Assessment of the Banking Sector
- Box 7.1 BOJ Proposed Implementation of RTGS and CSD Systems

Boxes

- **2007 FSR**
 - Box 3.1 Trends in Concentration & Performance in Jamaica's Banking Sector
 - Box 6.1 Unregulated Investment Schemes: Implications for Financial Stability of the Banking Sector
- **2008 FSR**
 - Box. Assessing the Capital Position of Jamaica's Banks