Systemic Risk Monitoring at the OFR

Rebecca McCaughrin
Associate Director, Office of Financial Research

**Moderator:** Jeffrey Schlinsog, MAAA, FSA
Chairperson of the Academy’s Financial Regulatory Reform Task Force

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SYSTEMIC RISK MONITORING AT THE OFR

Rebecca McCaughrin
Associate Director, Office of Financial Research
Rebecca.McCaughrin@treasury.gov
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AGENDA

• Role and mandate of the Office of Financial Research
• Framework for monitoring threats to financial stability
  • Motivation
  • Methodology
  • Takeaways
  • Near-term plans
WHAT IS THE FINANCIAL STABILITY OVERSIGHT COUNCIL?

A collaborative body established by the Dodd-Frank Act to identify risks to financial stability, respond to emerging threats, and promote market discipline.

- Chaired by the Secretary of the Treasury, the Council contains eight federal financial regulators, an insurance expert appointed by the President, and state regulators and other nonvoting members.
- The Council has the authority to designate nonbank financial companies, Financial Market Utilities (FMU), and payment, clearing, or settlement activities for heightened prudential supervision.
- The Council facilitates regulatory coordination, information sharing, and information collection.
- The Council reports annually to Congress.
- Council Committee structure: Deputies; Systemic Risk (subcommittees on Markets and Institutions); Nonbank Designation; FMU Designation; Heightened Prudential Standards; Orderly Liquidation Authority and Resolution Plans; and Data.
What is the Office of Financial Research?

The OFR supports the needs of the Council by:

- **Analyzing threats to financial stability** – The OFR is developing metrics to assess threats to financial stability, and tools for measuring and monitoring risk.

- **Conducting research on financial stability** – The OFR is conducting research to evaluate stress tests and to propose other potential stability-related assessments of financial entities, reporting on market disruptions, and providing analyses of policy tools and responses.

- **Addressing gaps in financial data and helping to fill them** – The OFR is promoting data integrity, accuracy, and transparency for the benefit of market participants, regulators, and research communities.

- **Promoting data standards** – The OFR is collaborating with policymakers, regulators, multilateral organizations, and industry to establish global data standards, e.g., for a global legal entity identifier, or LEI.
The OFR takes the following approaches to implementing its research strategies:

- Working through cross-functional teams
- Bringing researchers into the OFR
  - IPAs and consultants
  - Fellowship program
- Facilitating researchers
  - Joint research initiatives
  - Grants
- Providing thought leadership and opportunities for dialogue
  - Publishing staff work products
  - Workshops and conferences

### Products

- OFR Annual Report
- Current analysis and policy research
- Support the Council on its Annual Report and other research projects
- Working Papers and other research
  - Common Ground: The Need for a Universal Mortgage Loan Identifier (McCormick and Calahan)
  - How Likely is Contagion in Financial Networks? (Glasserman and Young)
  - Stress Scenario Selection by Empirical Likelihood (Glasserman and others)
  - “A Survey of Systemic Risk Analytics” (Bisias and others)
  - “Forging Best Practices in Risk Management” (Flannery and others)
  - “Using Agent-Based Models for Analyzing Threats to Financial Stability” (Bookstaber)
HOW CAN THE OFR IMPROVE DATA QUALITY AND SCOPE?

- Promote data standards; e.g., the global Legal Entity Identifier (LEI), necessary for system-wide aggregation, linking different data sets and analytical comparisons; helps collect more and better data while reducing the reporting burden.

- Collaborate with Council member organizations to collect data and fill data gaps, e.g., for DvP repo, securities lending, etc.

- Target low-cost, high-quality data collection points (SDRs, CCPs) for certain types of data, e.g., OTC derivatives, swaps, GC repo.

- Four partnerships critical for success: (1) The global policy/regulatory community; (2) financial institutions; (3) market data vendors and solutions providers; and (4) exchanges, CCPs and other data repositories.
## How can the OFR improve financial stability research?

<table>
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<tr>
<th>Understand the Financial System</th>
<th>Assess Risk and Vulnerabilities</th>
<th>Evaluate Mitigants</th>
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<tbody>
<tr>
<td>• How is the financial system performing its six basic tasks?</td>
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<td>• How is the financial system changing – particularly with respect to new products and markets?</td>
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<td>• Where are risks accumulating?</td>
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<td>• What are the forces driving risk-taking activities and what is the interplay among them?</td>
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<tr>
<td>• What are the gaps in analytics and data?</td>
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<td>• How can risk management, policy, and supervision address these risks?</td>
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<tr>
<td>• Do policymakers and companies have sufficient data and information?</td>
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The OFR has a Mandate to Assess Risks to Financial Stability

- Monitoring risks to financial stability has gained importance due to:
  - Increased complexity of factors contributing to instability
  - The severity of potential instability on the real economy
  - Current gaps in monitoring devices

- Building on the existing toolkit, the OFR has developed a framework that seeks to operationalize systemic risk monitoring

- The objective of the financial stability monitor is to provide policymakers with a periodic assessment of potential fragilities
Approaches to Financial Stability Monitoring

- *Institutional/supervisory segments*
  - Highly detailed, but tends to focus narrowly on only one part of the financial system or on a single risk; data are either lagged or not publically available

- *Composite systemic or financial stress indices*
  - Useful summary tool, but aggregated approach makes it difficult to disentangle sources of stress

- *Thematic*
  - Incorporates market intelligence, but lacks rigor and approach is not systematic

- *Risk-based assessment*
  - Captures diverse range of potential sources of instability, but measurement challenges exist
Existing Toolkit

- *Financial soundness indicators* (e.g., balance sheet analysis), but tend to be dated and do not take into account spillovers.

- *Macro-financial models* (e.g., VAR shocks, stress tests, scenario analyses), but do not account for structural breaks and calibration may be subjective.

- *Market-based measures* (e.g., CoVAR, joint-distress, fair value models, EDFs), but may not have much predictive value or are only coincident, and information content of market pricing may be unreliable.

- *Tools to assess interdependencies* (e.g., network analysis, cross-border exposures), but difficult to string together a time series and significant data gaps.
## Key Risks and Examples of Indicators

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<tr>
<th>Risk</th>
<th>Definition</th>
<th>Examples of indicators*</th>
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<tbody>
<tr>
<td>Macroeconomic</td>
<td>Evaluates macro risks that have the potential to affect stability through various channels - e.g., growth, external balances, policy buffers, fiscal vulnerabilities</td>
<td>Financial conditions, sovereign financing needs/cost of funding, consumer/business confidence, inflation volatility/expectations</td>
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<tr>
<td>Market</td>
<td>Assesses the risk of destabilizing losses across key asset classes and investment strategies.</td>
<td>Duration, positioning, risk premia valuations, FX/ALM mismatches, volatility</td>
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<td>Credit</td>
<td>Measures the propensity of a counterparty to meet its financial obligations</td>
<td>Corporate credit spreads, lending conditions, asset quality of households, corporates, banks, and non-bank financial institutions</td>
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<tr>
<td>Funding/liquidity</td>
<td>Seeks to capture market liquidity and assess stress in funding markets</td>
<td>Broker-dealer inventories, cash balances, dependence on wholesale funding, short-term funding rates/spreads</td>
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<td>Contagion</td>
<td>Seeks to measure the vulnerability of the financial system to sudden shocks that may spill over or spread as a result of interconnectedness.</td>
<td>CCA, JPoD, CoVaR, SES, DIP, network analysis, cross-border exposures, sovereign-bank exposures, correlation risk</td>
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We identified five measures of risk: macro, market, credit, funding/liquidity, and contagion.

Positioning is determined by deviation from historical norm, and represented as a heat map. Red reflects higher risks and green lower risks.

Each risk measure is comprised of a set of roughly 10 model-, market-, survey-based standardized indicators.

Indicators are grouped together into ‘underlying indicators’ and ‘risk measures’ using simple averages.
The diagram illustrates the coverage of different sectors and the method of measurement used in financial stability monitoring. It categorizes the sectors as:

- International
- Non-Bank Financials
- Government
- Non-Financial Corporation
- U.S.
- Banks

The methods of measurement are:

- Model-based
- Direct Observation
- Survey

The diagram also shows the breakdown of sectors and methods by quantity and price.
Near-term Plan

- Draft methodology paper by September 2014
  - Proceed with back-testing, reassess weights and selection criteria
  - Incorporate additional measures and populate

- Consider how to incorporate other sources of risk that are less quantifiable – e.g., operation, infrastructure, policy risk

- Develop complementary monitoring metrics and surveillance tools
  - Counterparty credit risk
  - Trading liquidity metrics
Questions?