

# Discussion of “*Macro-Prudential Policy: the debate and some implications for New Zealand*” by Prasanna Gai



Forum on Macroeconomic  
Imbalances – Causes and Remedies

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# Outline

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1. Expand on Prof. Gai's points:
  - Macroprudential policy needs vulnerability assessments that factor in second round effects (enhancement to macro stress testing)
  
2. Go where Prof. Gai did not go:
  - reduce impact of bank default and fiscal cost of banking crises (enhancing resolution regimes)

# 1. Modeling Funding Risk in Macro Stress Test



# ...How to model second round effects from wholesale funding risks

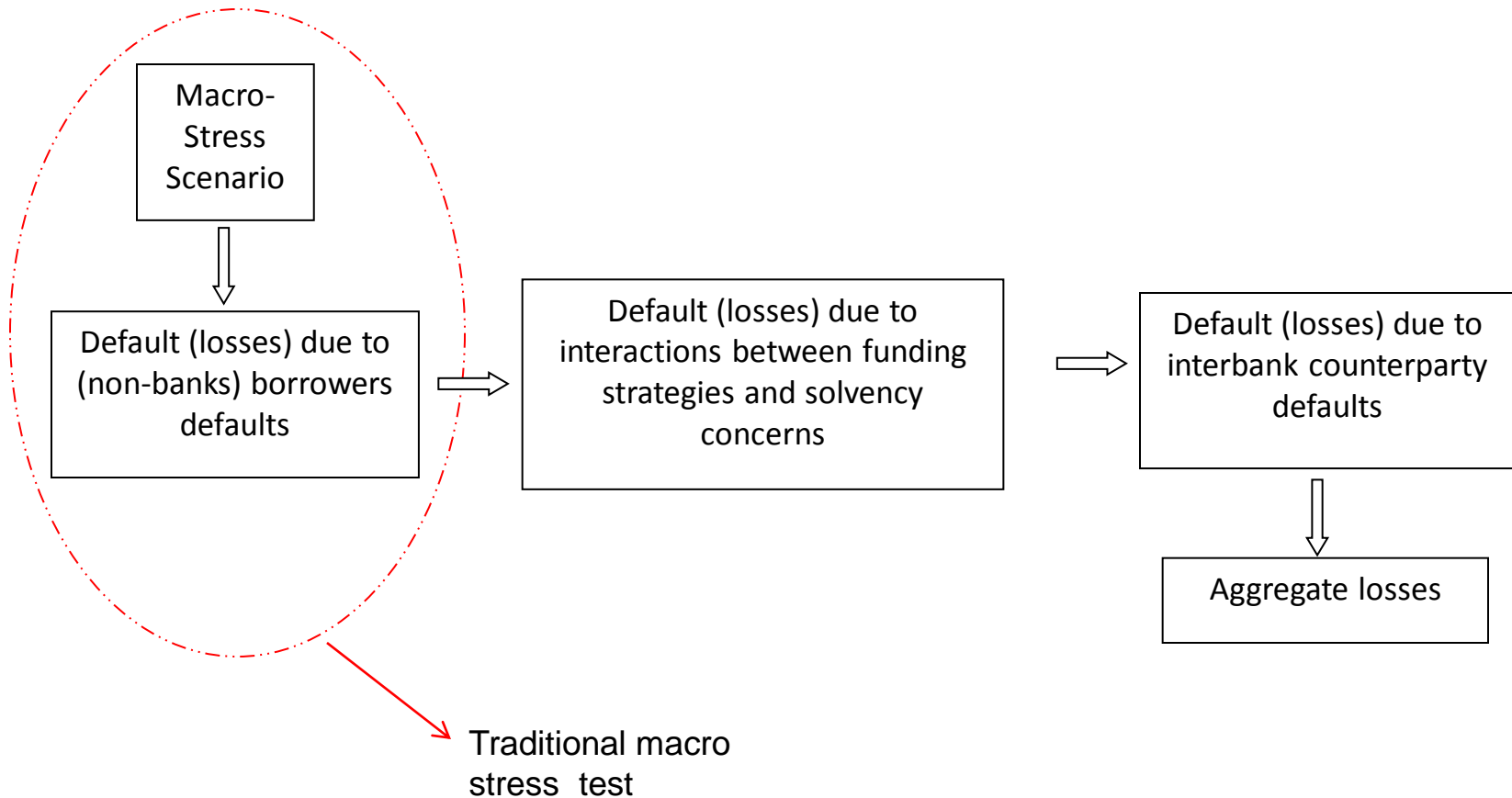
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*“Staff recommended explicitly including funding risk in future scenarios, encompassing a disruption to bank funding...”*

## ***Solution: BoC Macro-Financial Risk Assessment Framework (MFRAF)***

- Aim: model of bank funding stresses/ “runs”
- Based on Morris and Shin concept that funding illiquidity interacts with solvency risk
  - Not Diamond and Dybvig “self-fulfilling” bank run
    - Illiquidity risk (runs) depends on perception of future insolvency
    - Coordination failure of short-term creditors: fail to roll over debt
    - Run itself makes institution insolvent, but otherwise solvent
- Could be adapted to foreign (short-term) debt

# Main components of MFRAF



# Funding Module's parameters

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- S: Proportion of short-term funding
- $\Psi$ : Illiquid asset (fire-sale) price
- M: amount of liquid assets
- E: Equity (capital)

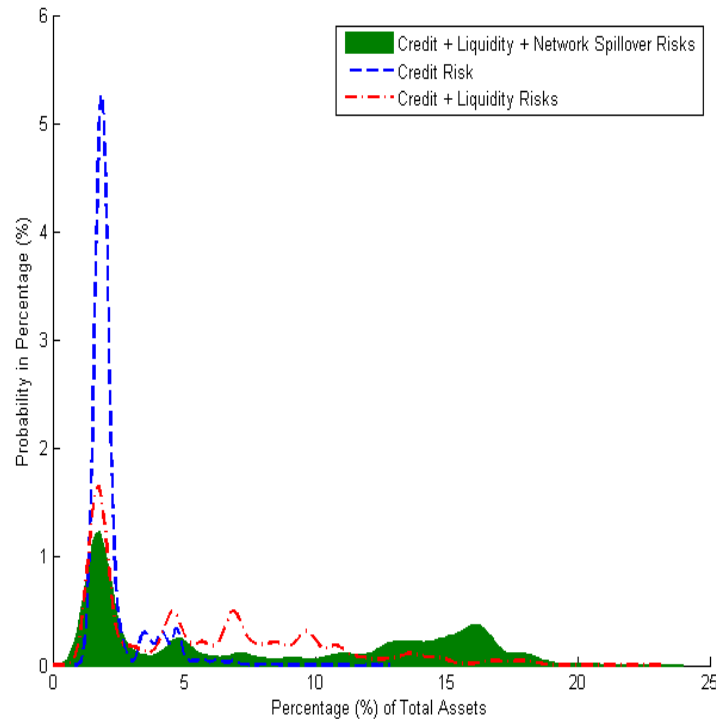
## Other parameters

- $P_2$ : Expected second period losses
- $r_s$ : Return on short-term debt (to investors)
- $r^*$ : risk-less interest rate (short-term creditors opportunity costs)

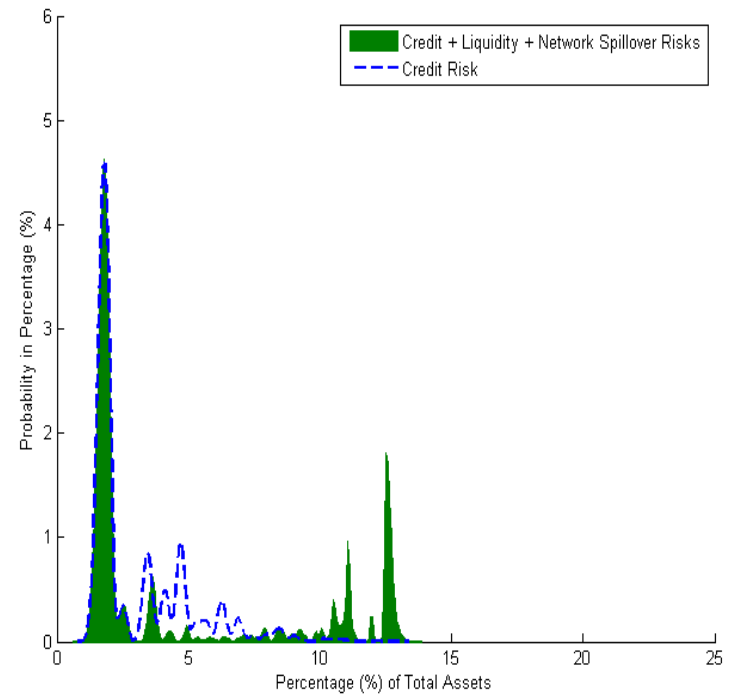
***Banks only need to be weakened, not pushed over the brink, by traditional loan losses, for it to face funding runs (and insolvency) when wholesale funding is of the riskier variety***

# How to mitigate funding risk

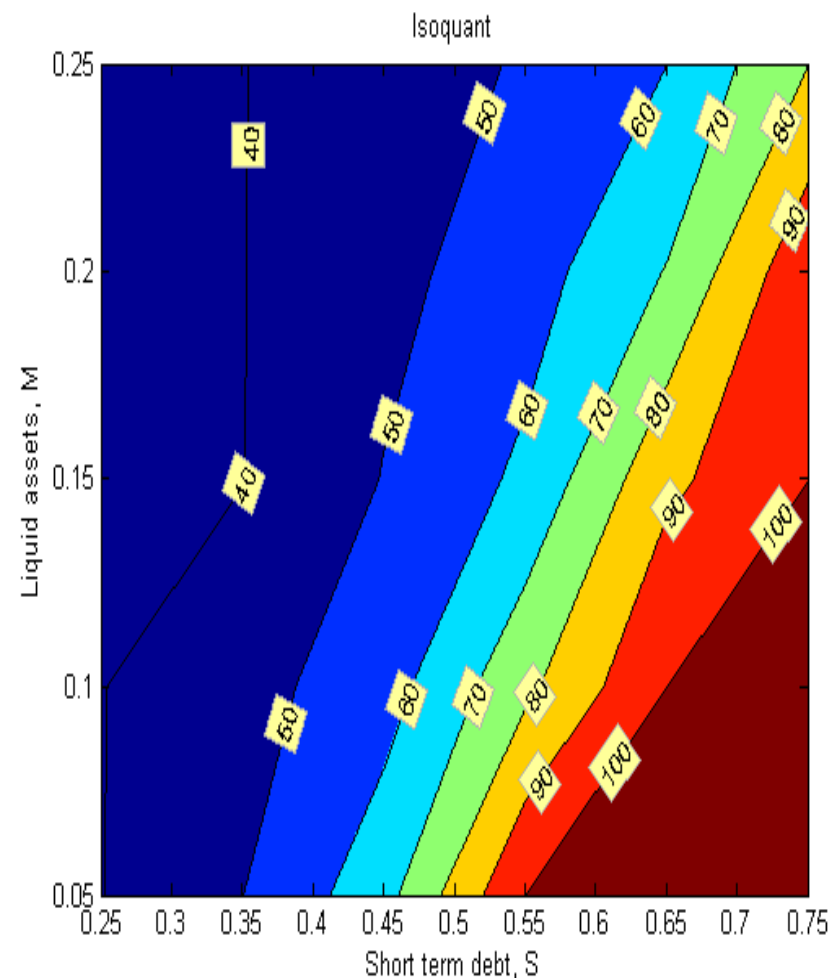
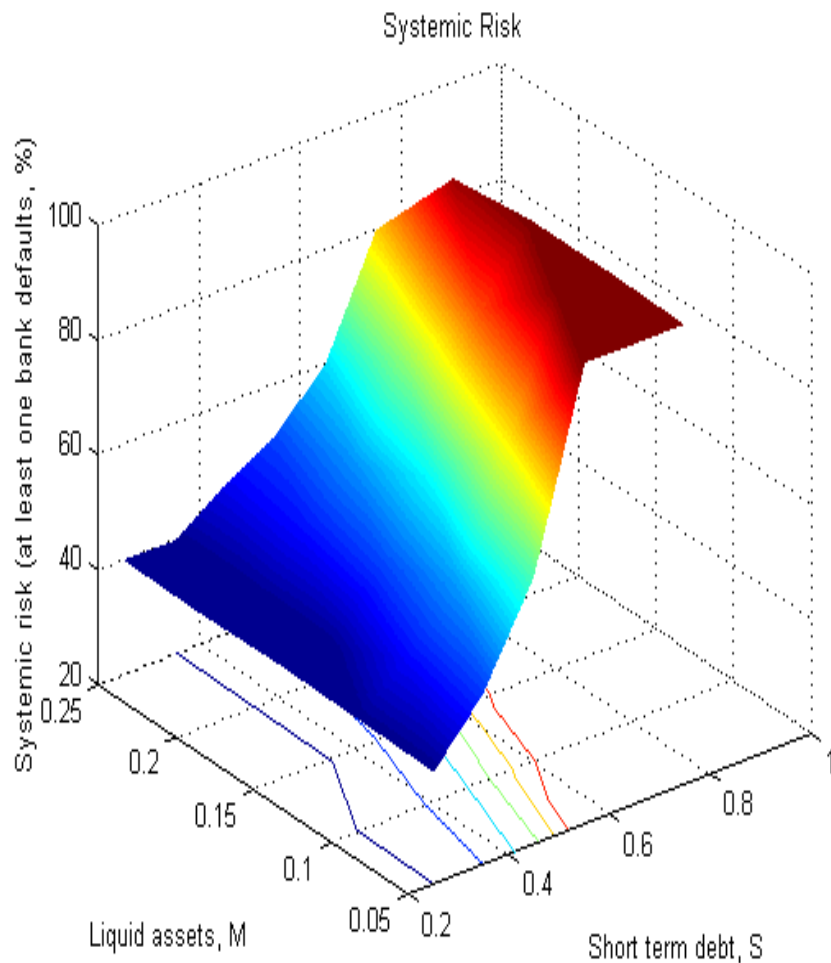
## Base Case



## Lower AF (e.g., crisis liquidity facility)



# Higher liquid asset vs lower short-term funding





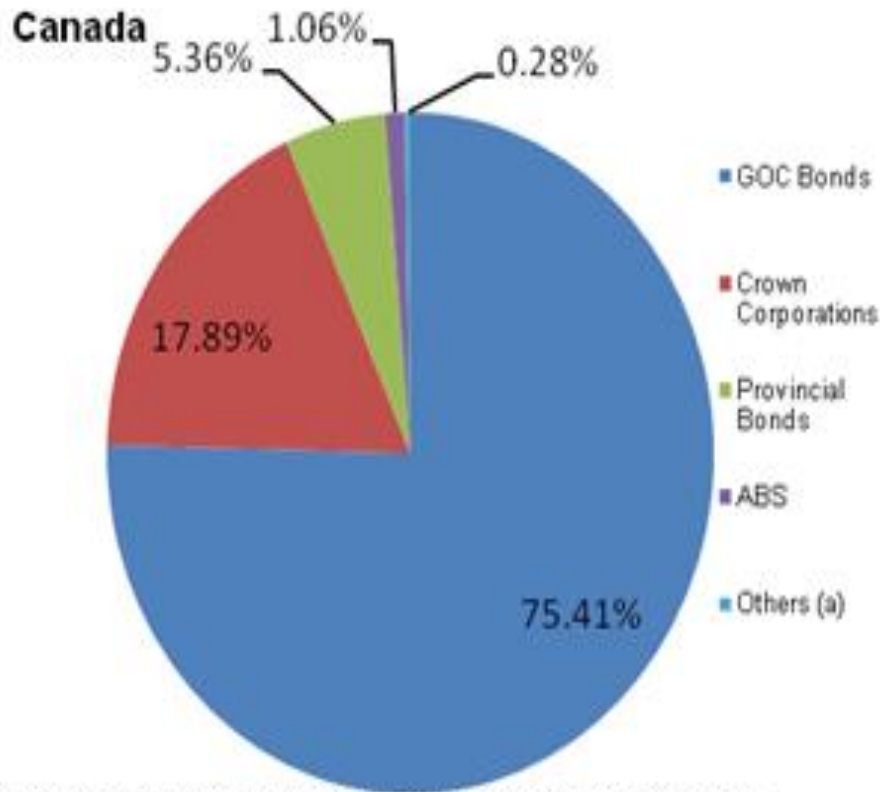
# Funding Risk in Canadian Banking system

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## Regulatory requirements

- CDN banks tend to hold greater amount of liquid assets and higher portion of retail deposits relative to European and US banks
- High deposits funding, should allow easily compliance with ***Net Stable Funding Ratio*** for Basle III
- Inclusion of RMBS for insured mortgages in level 1 asset pool in ***Liquidity Coverage Ratio*** will cause CDN banks to exceed global peers on average as well
- Secured repo based funding more “vanilla” that US peers

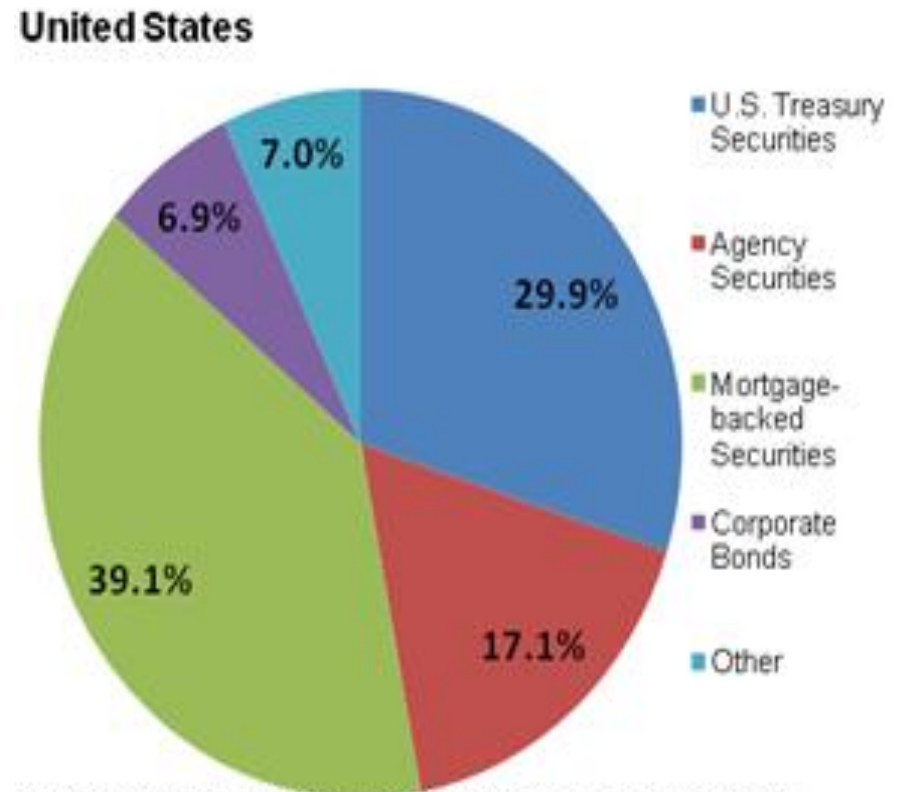
# Repo difference



(a) Other securities include corporate, municipal, and bank trust and mortgage co. paper.

Source: Bank of Canada

Last observation: 2010Q3



(a) Other securities include equities, asset-backed securities, money market instruments, ETFs, CDOs, and municipal debt.

Source: U.S. Federal Reserve

Last observation: 9 April, 2010

# Funding risk in Canadian banking system

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- Basle III Funding liquidity may have surprisingly large unintended consequences on loan spreads to consumers and firms
  - That is why monitoring period for this new rule
  - Some amount of wholesale funding is “efficient”
  - What if bank funding structure a reflection of macroeconomic (global) structures
    - No government debt
- What are possible reactive (ex post) liquidity policies during periods of bank funding stress?
- Make illiquid assets more liquid, increase liquidity
  1. Canada: accepted non-mortgage loan portfolio of CDN banks for payment system collateral
    - Lowered Asset-fire sale externality ( $\psi$ )
  2. Insured-mortgage purchase program: government purchased \$67 B of insured “risk-free” mortgages
    - Increase liquid assets, M
    - Lead to a sharp drop in demand for extraordinary term repo facility

# Parallels to sovereign debt crises

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1. Countries reserves akin to a bank's liquid asset holdings
2. Countries open to runs (or debt freeze-out) the more it borrowed short-term or in a foreign currency:
  - Akin to banks having too much short-term or foreign funding
3. Country's assets (tax revenues) weakened by macro/commodity price shock
  - Akin to a bank's loan-book incurring losses due to macroeconomic shock

## 2. Potential Fiscal cost of banking crises



# National SIFIs

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- FSB focused on Global SIFIs;
  - Will impose k-surcharge on a group of roughly 30 (usual suspect) large internationally active banks
- Every jurisdiction has a set of national SIFIs
  - Ideally, impose Pigouvian tax to internalize the externality and reduce probability of failure
  - Ideally reduce extent or number of SIFIs or push probability of failure to zero
- Most of the banking sector reform agenda has, to date, been aimed at reducing probability of bank default
- But must face fact that they can and will fail and, at the same time, they are too-important-to-fail in terms of critical services/operations they provide
  - Letting banks fail might punish stakeholders, but would impact much larger set of innocent bystanders
  - Not a time-consistent policy to say that governments would not “save” certain important banks

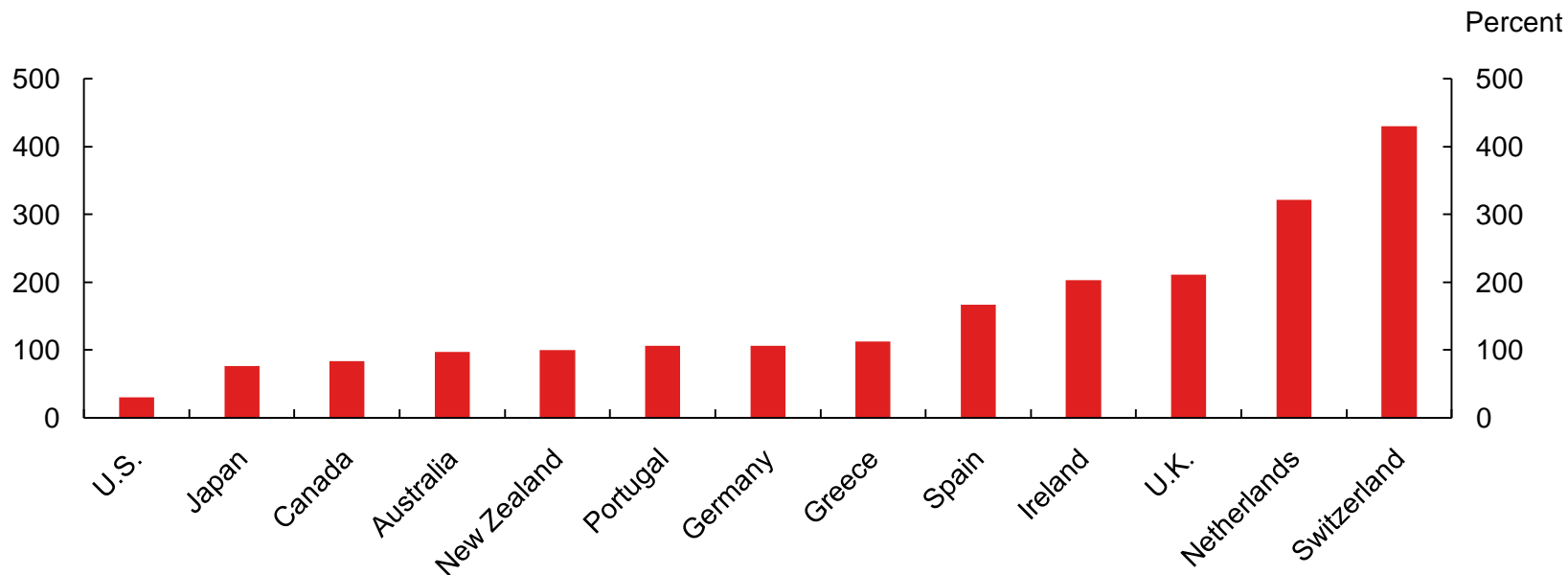
# Sovereign risk and implicit banking sector backing

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- Governments face huge ***contingent liabilities*** related to the failure of, or stresses in, their banking sector
  - SIFIs that fail will need recapitalization and access to funding
  - Canada: Government backed mortgage insurer (not so much banks) is a large contingent liability
- Not surprising that certain countries will be early adopters or be tougher when it comes to Basle III implementation
  - UK: good/bad bank structure
  - Switzerland: much higher capital standards than Basle III
  - Sweden: already has a SIFI charge (and fund)

## Countries with banks that are large relative to home economy, have strong incentive to prevent banking crises

**Total banking assets of the two largest banks to GDP (2010)**



Source: Bloomberg, IMF International Financial Statistics and banks' annual reports.

Note: Australian subsidiaries are used for New Zealand.

Last observation: 2010



# Solution – Credible resolution regime for SIFIs

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To be able to **credibly** resolve any bank, regardless of size, complexity or importance, in a way that minimizes disruption to the financial system and economy and minimizes use of tax payer funds.

- Minimize disruption
  - Fast, continuation of critical functions, restore confidence, and thus minimize contagion
- Credible
  - Transparent, can be operationalized, seen to address underlying problems, clear mandates and cooperation among relevant agencies
- Mitigate Moral Hazard
  - Appropriate allocation of losses before tax payer funds are used, exert discipline on shareholders and unsecured (non-depositor) creditors, exert discipline on managers, address underlying vulnerabilities

***Too-big-to-fail becomes too-big-to-close but not too-big-to-resolve***

# SIFI resolution: Recapitalization of the bank from within

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## Contingent Capital

- A subordinated security (tier 2) that converts to common equity under certain conditions
- Late Trigger Contingent Capital differs from early or going concern contingent capital (aka CoCos)

## Bail In debt

- Similar mechanism is extended beyond the regulatory capital base to senior (unsecured) debt securities of the issuing bank.
  - Haircut imposed on creditors at trigger (or conversion to equity)

# Contingent Capital in Basel III (aka NVCC)

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- To be included as regulatory capital, all non common equity must include
  - Mechanism that creates common equity at the point on non-viability (PONV)
- Trigger event is the earlier of
  - A public sector injection
  - Determination that bank is, or is about to become, non-viable
- Is a resolution tool and should be part of a broader package of resolution actions (e.g., change management and LoLR)

# NVCC and Bail in debt have the potential to address aspects of the “SIFI Problem” ...

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1. Improves ability to resolve a SIFI: current resolution tools will, arguably, not (ever) work for large international FIs
  - Fast, “open-bank” continuation of critical services, minimize disruption
2. Mitigate moral hazard associated with SIFIs
  - Increases shareholders’ and creditors’ incentives to monitor ex ante
  - Reduction of implicit guarantee lead to reduced risk-taking incentives
3. ***Reduces potential fiscal cost*** as recapitalization is “pre-packaged” and provided by existing bank debt holders

# Parallels to contingent sovereign debt proposals

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- Contingent capital imposes a haircut on debt holders, contingent on an event (bank failure)
  - GDP-linked sovereign bond proposals impose “haircut” on sovereign debt holders contingent GDP falls below a threshold (due to banking sector collapse)
    - Could link sovereign bonds to SIFI bail-out event
    - Particularly important for countries that have outsized banking sectors
  - Similarly, a country or regional bail-out fund (like the EFSF or ESM) disburses funds contingent on banking sector’s needed recapitalization

# Questions?



## ... But there are challenges that need to be addressed...

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1. Ex-ante liquidity risk – as the likelihood of a bail in increases, fire sales of assets and higher rollover risk could increase liquidity problems
  - But, this is the case regardless as a bank approaches non-viability (or would be the case if there weren't an implicit guarantee)
2. Ex-post liquidity risk – if credibility is not restored, could have a run on the bank and it could “fail twice”
  - Need to have a credible package, a bail in is more than the conversion
3. Contagion risk

# Crisis management frameworks

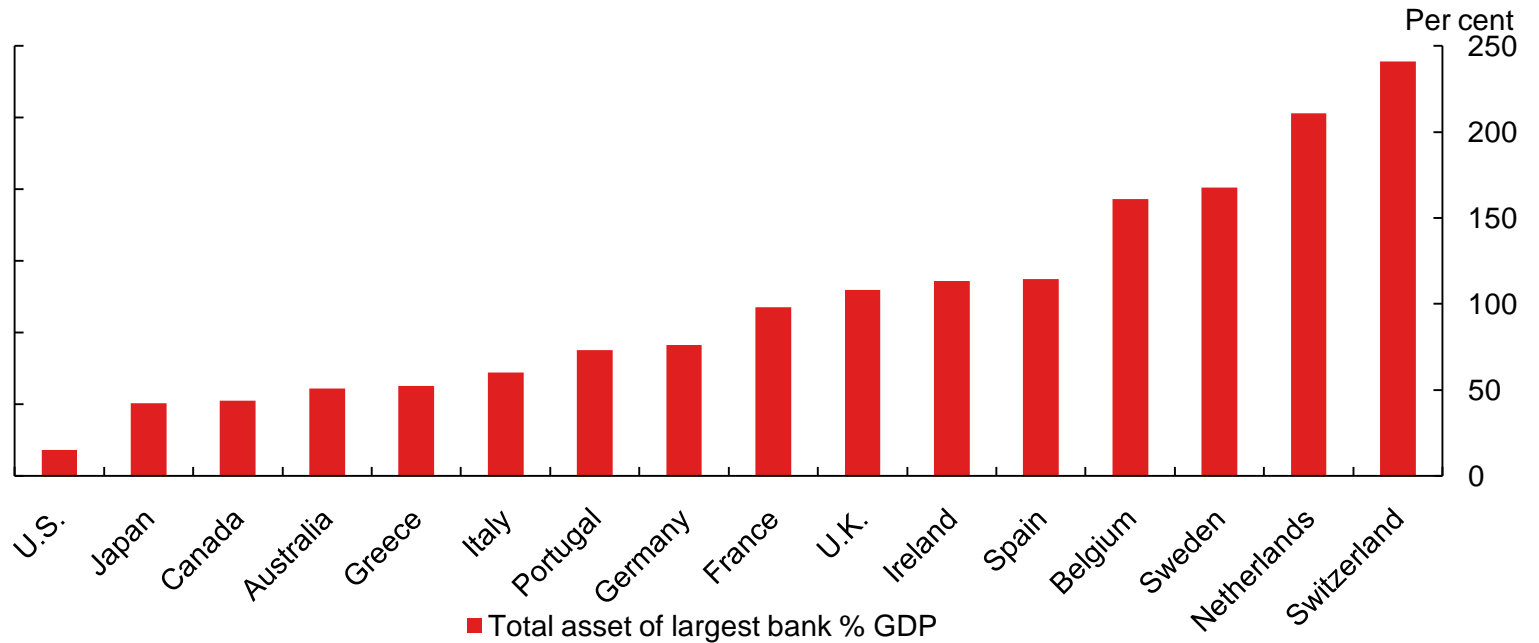
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The framework for crisis management should aim at:

1. preserving financial and economic stability during a crisis
2. avoiding moral hazard and enhancing market discipline before a crisis; and
3. reducing the fiscal cost of a crisis

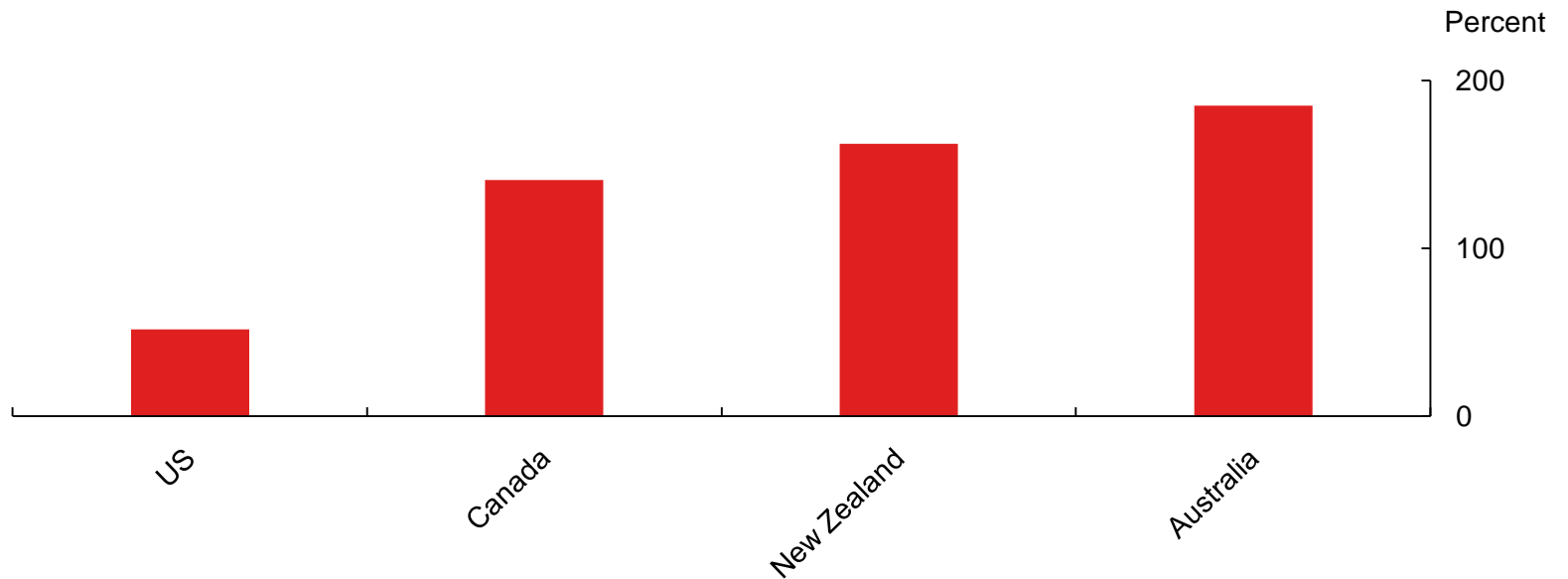


### Total assets of largest bank to GDP (2010)



Source: Central banks and bank annual reports

## Total banking assets of the four largest banks to GDP (2010)



Source: Bloomberg, IMF International Financial Statistics and banks' annual reports. Note: Australian subsidiaries are used for New Zealand observation: 2010