Macroprudential Policy: Conceptual Foundations and Design Issues

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Motivation

- The global financial crisis represented a death blow to the profession's tendency to do macro theory ignoring finance (finance as a veil)…
- …and to do finance theory (and prudential policy) ignoring macro dynamics
- Recent progress in understanding financial frictions and linking them to macro dynamics has been impressive
  - See comprehensive survey article by Brunnermeier, Eisenbach & Sanikov (2012)
- … yet there are lags in linking prudential policies to this new body of theory
- De la Torre and Ize (2013) is an attempt to partially fill the gap…
  - It reviews the literature within a paradigm-based conceptual framework…
  - …where frictions (principal-agent, collective action, cognition) are gradually added and interacted with different sources of aggregate volatility…
  - …to identify the rationales for macroprudential policy

Outline

- The macroprudential policy map
  - Paradigm-based exploration of four, largely orthogonal macroprudential policy dimensions (or motives)

- Policy design and implementation issues
  - A balancing act, given tensions and tradeoffs

The Macroprudential Policy Map

Four motives for macroprudential policy

Macroprudential Policy Density Map

(Aggregate volatility (G) permeates all cells)

	AGENCY FRICTIONS (A)	**AGENCY + COLLECTIVE ACTION FRICTIONS (C)**
FULL RATIONALITY (F)	**GFA** Private Sector - Public Sector Wedge ***Time-consistent macroprudential***	**GFC** Individual - Social Wedge ***Collective-action macroprudential***
FULL + BOUNDED RATIONALITY (B)	**GBA** Sophisticated - Unsophisticated Wedge ***Dynamic-agency macroprudential***	**GBC** Collective Perception - Reality Wedge ***Collective-cognition macroprudential***

Rational players in open markets, constrained by agency frictions…

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GFA domain – getting involved or letting go?

- Prudential regulation cannot improve the equilibrium, as the state has no enduring advantage over rational players in resolving agency frictions
  - Rational principals and agents discipline each other, bear the consequences of their own actions, and optimize when taking risk and holding buffers
  - Persistence/amplification effects are due to agency frictions
  - Not worth having regulatory buffers for one hundred year flood-type events
- However, state interventions can ease the recovery *after* a crisis because of the state's power to tax and spread risk…
  - Aggregate liquidity (Holmstrom & Tirole); risk absorption (Farmer)
- …but they inevitably create public moral hazard ("put option")
  - Liquidity & solvency distinction is blurred by info asymmetries
  - To intervene ex post or not, that is the policy conundrum!
- If the state intervenes, **time-consistent macroprudential** needed
  - To correct ex ante distortions of ex post interventions => price the financial safety net and instill discipline in failure resolution (e.g., bail in-able debt)

Bernanke & Gertler (1989); Kiyotaki & Moore (1997); Adrian & Shin (2009); Geanakoplos (2010); Brunnermeier & Sannikov (2012)

… enter the unsophisticated

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GBA domain – doing it right is harder than it seems

- Representing the unsophisticated in the midst of aggregate volatility requires pro-active official oversight => **dynamic-agency macroprudential**
  - First level: keep P-A incentives *continuously* aligned => state-contingent microprudential policies to ensure that intermediaries act as if they were working with their own money
    - Creditors-debtors: recalibrating skin-in-the-game & consumer protection norms
    - Managers-shareholders: fine tuning compensation systems
  - Second level: protect the deposit insurance by controlling public moral hazard, which is an unintended side effect of policy => price the financial safety net
    - Sophisticated can appropriate the deposit insurance (Huang-Ratnovski)
- Since ex ante prudential regulation is warranted from the outset => ex post intervention is less of a conundrum…
- …but aligning principal-agent incentives may not necessarily align taxpayers-financial market participants incentives…
- …and, in any case, there is wide room for policy failure-driven inefficiencies

Gavin & Hausmann (1996); Allen & Gale (1999); Borio (2003)

Rational players in open markets with significant externalities…

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GFC domain – a radically new ball game

- Externalities boost the case for policy, as market discipline fails where the state has a comparative advantage => **collective-action macroprudential**
  - To induce internalization of systemic consequences of individual actions
  - NB: Negative externalities strengthen the case of ex-post interventions
- Different types of externalities => different macroprudential responses…
  - Interconnectedness => structure – size limits, segmentations (Volcker rule)
  - Pecuniary => Pigouvian taxes (e.g., penalizing short-term wholesale funding)
  - Coordination failures => crowd control (LOLR, circuit breakers, systemic liquidity requirements, etc.)
  - Information => monitoring incentives; official oversight of rating agencies
- … but public moral hazard can rise with a vengeance
  - Size (TBTF), interconnectedness (TITF), and herding (TMTF) effects
  - Diabolic feedback loops can develop
    - Liquidity/information free riding <=> overreliance on exit, at the expense of monitoring <=> tightening of agency frictions <=> "put option" effecs <=> and so on

Stiglitz (1982); Diamond & Dybvig (1983); Rajan (2004) Lorenzoni (2008); Korinek (2011)

…enter the less rational momentum traders

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GBC domain – steering the boat in the fog

- In the face of mood swings, where irrational exuberance and panics can end up dominating the market, …
  - As a result of the interaction between irreducible uncertainty, cognitive limitations, and agency and collective action frictions
- … the state has a role to play not because it is any smarter than the rational participants…
- … but because it can better resolve the collective action failures that limit the ability of rational arbitrageurs to dominate market outcomes
  - **Collective-cognition macroprudential** – to temper moods
  - For example, though controls on financial innovation, systemic stability information, and countercyclical prudential norms
- Irreducible uncertainty and moody dynamics put a premium on flexible and judgment-based (rather than rules-based) macroprudential policy

Kindleberger (1978); Shleifer & Vishny (1997) ; Abreu and Brunnermeier (2003)

Summing up

Macroprudential Policy Density Map

(Aggregate volatility permeates all cells)

	AGENCY FRICTIONS	AGENCY + COLLECTIVE ACTION FRICTIONS
FULL RATIONALITY	***Time-consistent macroprudential*** Correcting incentives distortions due to expectation of ex post interventions	***Collective-action macroprudential*** Controlling crowds – runs, herds Controlling interconnectedness risk
FULL + BOUNDED RATIONALITY	***Dynamic-agency macroprudential*** Aligning P-A incentives on behalf of the unsophisticated	***Collective-cognition macroprudential*** Tempering moods where rational arbitrageurs fail

Policy Design and Implementation Issues

Macroprudential policy must choose its battles...

- The objective is to reduce the *socially excessive* costs (probability and severity) of systemic financial crises…
  - Not to limit financial volatility or pro-cyclicality per se
- … which requires knowing where the state has a comparative advantage over market participants to improve things …
  - Can the state improve the equilibrium outcome, given the constraints?
  - Or should the state mainly aim at easing the constraints?
- … and a focus on leveraged credit and liquidity
  - The main channels through which Wall Street can cause havoc in Main Street (Calvo, 2013)
  - For example, pure stock market fluctuations may reflect all sorts of frictions and aggregate volatility but need not concern prudential regulators

Identifying the domain is as crucial as it is challenging…

- Are financial fluctuations mainly due to the tightening collateral or info asymmetry constraints in the face of a tail-risk shock (GFA domain)?
  - If so, avoid macroprudential activism
- …or are they mainly due to the failure of policy to keep P-A incentives aligned or adequately price the financial safety net (GBA domain)?
  - If so, dynamically-oriented macroprudential
- …or are they mainly due to rampant uninternalized externalities (GFC domain)?
  - If so, collective action-oriented macroprudential and ex-post interventions
- … or are they mainly driven by unreasoning mood swings (GBC domain)?
  - If so, collective cognition-oriented macroprudential

As even good macroprudential is fraught with tensions and trade-offs, it is all a about finding the right balance…

	Paradigm		
Policies	**Agency**	**Collective (Full Rationality)**	**Collective (Bounded Rationality)**
Penalizing short-run wholesale funding	***Undesirable*** Undermines market discipline	***Desirable*** Internalizes pecuniary externalities	***Desirable*** Dampens mood swings
Mark-to-market accounting	***Desirable*** Strengthens market discipline	***Undesirable*** Promotes contagion	***Undesirable*** Amplifies mood swings
Pigouvian taxation	***Undesirable*** Promotes risk taking	***Desirable*** Internalizes pecuniary externalities	***Ineffective*** Not well suited to dampen mood swings
SIFI/TBTF regulation	***Undesirable*** Limits scope for sound finance	***Desirable*** Internalizes inter-connectedness externalities	***Ineffective*** Not well suited to dampen mood swings
Perimeter of regulation	***Limited***	***Broad***	***Broad***

… taking into account that financial systems wander from domain to domain

- Real-life financial systems have all the elements (frictions and types of volatility) of the densest (GBC) domain…
- … but not all of them have first order effects at all times
- The relative impact of frictions is state-dependent
  - *Enforcement frictions* are more relevant during downturns (when collateral values dip and bind)
  - *Cognition frictions* are more relevant in times of rapid informational change (innovation-fueled cycles)
  - *Collective action frictions* are more relevant when a coordinated response is called for (herds, runs, TBTF, TITF, TMTF effects)
- Financial systems move from domain to domain, depending on the state of financial innovation, the business cycle, policies, etc.
  - To avoid confusing symptoms with causes, you have to know where you are

A typology of macroprudential policy design options

- Option 1: straight jacket-type macroprudential oversight system
  - Broad regulatory perimeter and an emphasis on structure (size limits, functional segmentations, redundancies, etc.)…
  - … at the expense of financial depth and innovation
- Option 2: an all-terrain (all-domain) macroprudential oversight system
  - A little bit of every thing …
  - but large scope for policy inconsistencies and regulatory arbitrage
- Option 3: bi-modal (state-dependent) macroprudential oversight system
  - Normal times: focused on market discipline (agency frictions)
    - Through competition & diversification system adapts to and absorbs "normal" shocks
    - No major innovations; no major shocks; system not subject to perverse gyrations
  - Boom-bust times: focused on systemic risk buildup (collective frictions)
    - Large shocks, externalities, uncertainty, & public moral hazard have first order effects
    - Triggers (including to prick bubbles) and ample powers for judgment-based oversight
  - ….but it presupposes an agile, benevolent, and independent regulator

Thank you