TAXING FINANCIAL POLLUTION: THE CASE FOR LIQUIDITY RISK LEVIES

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- 14 January 2010:

  President Obama announces Financial Crisis Responsibility Fee

  – On *financial institutions* with consolidated assets $>$ \$50 billion
  – Ex post and temporary:
    * Aimed at recouping the cost of the bail-out (TARP program)
    * Applied for 10 years or longer, if needed
  – 15bp on liabilities other than equity and insured deposits

- 22 March 2010:

  Germany to introduce levy for bank bail-outs

  – On *banks* of all sizes (but not insurance companies)
  – Ex ante & permanent:
    * Aimed at feeding resolution fund for future crises
    * Levies designed to reflect the risk generated by each bank

- Just two steps in a global process accelerated in January-March 2010:
  - UK government actively seeks consensus on global bank levy
  - Several countries announce their own plans (Sweden, Austria,...)
  - European Commission backs German-type arrangement at wider European/international level (26 March)
  - IMF will make specific proposal following G20 mandate (this month!)

- Enrico Perotti and I proposed levies of this type to specifically deal with systemic liquidity risk
  - "Liquidity Insurance for Systemic Crises"
    CEPR PI 31, February 2009
  - "Liquidity Risk Charges as a Macroprudential Tool"
    CEPR PI 40, November 2009

Overview

1. Introduction
2. Liquidity risk as a macroprudential challenge
3. The case for liquidity risk levies
4. Particulars
5. Institutional implementation

1. Introduction

- The financial crisis started in the summer of 2007 has its roots in a big collective mistake: *the under-estimation of systemic risk*

- Two important dimensions:

  1. Absence of a macroprudential view
  2. Excessively optimistic judgment on OTD model of banking

- The mistaken view was partly sustained by

  – lack of data and historical experience on the OTD model
  – naïve extrapolations of financial theory
  – disregard of asymmetric information and agency problems

Some clear lessons

- The OTD model of banking involved risks (e.g. due to maturity mismatch) similar in nature to those of the traditional banking model. But...
  - lack of transparency
  - greater complexity and interconnectedness
  - lack of precautions

  made these risks less well understood & more dangerous
- A clear lesson from the crisis: short-term (ST) wholesale liabilities are a less stable source of funds than retail deposits
  - Partly because of absence of explicit guarantees similar to deposit insurance (DI)
  - Short-term wholesale creditors did not get reassurances similar to DI until very late

A global bank panic

- News about US housing-related losses & fear of uncontrolled spread throughout system produced modern form of global bank panic (in money markets!)
  - Some banks suffered immediate refinancing problems
  - Other suffered second round effects:

$$\text{Risk of direct losses} \longrightarrow \text{fire sales} \longrightarrow \text{asset price declines} \ldots$$
$$\ldots \longrightarrow \text{higher margin calls} \longrightarrow \text{deleveraging}$$
$$\Rightarrow \text{Downward spirals (Brunnermeier,2009)}$$

- Presumption that money markets (MM) without explicit government support were liquid (and even a source of market discipline) was fundamentally wrong

The need for a new financial architecture

- Difficult political-economy process:

  Late recognition $\longrightarrow$ massive rescue plans ...

  ... $\longrightarrow$ public concern $\longrightarrow$ re-regulatory pressure

  $\Rightarrow$ Urgency to reform financial regulation & supervision

- Beyond short term demand for policy action, the goals are:
  - to correct the excesses perceived as causes of the crisis
  - to minimize the risk and severity of a future crisis

- There is some risk of over-reacting:
  - Applying a "killing the messenger" logic
  - Ignoring the room for self-correction in the system
  - Creating new regulatory arbitrage opportunities (instead of making the system more resilient to them)

2. Liquidity risk as a macroprudential challenge

- Refinancing problems borne by financial institutions with large maturity mismatches contributed to amplify and propagate this crisis...

  Together with the complex and opaque interconnections of OTD banks, gave a systemic dimension to the "subprime crisis"

- Arguably, refinancing problems contribute to financial system vulnerability in all crises. Crises recurrently remind us of...
  - Strong private incentives to undertake risky illiquid investments financed with unstable, short-term liabilities...
  - Possibly reinforced in periods of abundant "liquidity" and low short-term rates

- Trust in the entire financial system got severely damaged
  - Trade got disrupted: in MM, in ABS markets,...
  - Unprecedented public interventions took place:
    - Liquidity provision
    - Safety net guarantees (DI + novel guarantees)
    - Recapitalization programs
    - Nationalizations
  - Expectations typically associated with "lack of market discipline" (or "moral hazard") were confirmed (if not surpassed)
- Clear case for regulation:
  - Trust and financial stability are public goods whose provision is disrupted when banks' solvency is questioned
  - Safety net guarantees are costly: (i) provide implicit subsidies to risk-taking, and (i) end up paid with distortionary taxes

- Reducing the threat of liquidity problems does not necessarily imply affecting banks' debt maturity choices
- Alternative remedies include:
  - Increasing capital requirements: more fundamentally-solvent institutions should be less vulnerable to panics
  - Improving market infrastructure (standardization, trading platforms, central counterparties, lower reliance on OTC, etc.)
    - to reduce effect of counterparty risk
    - to facilitate liquidation in bad times
  - Forcing or encouraging banks to keep buffers of liquid assets
  - Providing explicit insurance or lender of last resort coverage for wholesale funding
- These alternatives are not incompatible with trying to control banks' excessive reliance on ST wholesale funding

- Route taken by Basel Committee is to extrapolate its "buffering" (requirements-based) approach to liquidity

  Consultative paper (December 2009):

  – New liquidity requirement: banks to hold safe liquid assets to back-up ST funding

  – New stable funding requirement: banks to use "stable" deposits or other LT funding to support illiquid investments

- Enrico Perotti and I defend another approach:

  – A system-wide price-based approach

  – Popularized as "Liquidity Insurance for Systemic Crises"

3. The case for liquidity risk levies

- Our proposal has its logical roots in several observations

  1. Public provision of liquidity in crises is not so costly, especially if compared to obliging banks to "store" liquidity in good times

     [= investment in "unproductive" government bonds]

  2. Given the destructive power of self-fulfilling bank panics, lending-of-last-resort and/or government guarantees may still be needed in crisis times

     [Liquidity buffers = false feeling of security +
     resistance to liquidity-enhancing policies]

  3. Funding strategies that contribute to financial system vulnerability are not intrinsically undesirable but generate "financial pollution"

     $\Rightarrow$ require adequate regulation

- Pigovian taxes are a possible solution to the regulation of externalities (but not the only one):
  - With full information about *private* marginal value (and *social* marginal cost) of activities that produce externalities...

    we might achieve efficiency with quantity regulation
  - If regulator knows *social* marginal cost but not *private* marginal value
    - Pigovian tax equal to social marginal cost might make the trick
    - quantity regulation would not
- The "buffering approach" of the Basel Committee is not a pure price-based or quantity-based approach...

Capital requirements	=	price for asset risk adoption is required capital
Liquidity requirements	=	price for ST funding is holding of liquid assets
Stable funding requirements	=	price for holding illiquid assets is using stable funding

- But availability&cost of capital/liquid assets/stable funding...
  - is out of the regulator's control
  - possibly fluctuates over the business cycle ($\longrightarrow$ procyclicality)
- Ours is a more straightforward Pigovian solution

4. Particulars

- Liquidity risk levies:
  - Indexed to maturity mismatch/refinancing risk of each institution
  - Base: Refinancing-risk-weighted (RRW) measure of net ST non-deposit liabilities
  - Rate: 10-30 bp
- Primary goal: Incentive realignment
  - Among banks (in a broad sense): i) direct beneficiaries of the safety net, ii) most likely contributors to financial instability
  - To discourage excessive reliance on ST wholesale funding, i.e. exploitation of temporary "carry trade gains" & implicit guarantees

- Formulae:

$$LRC_{jt} = c(z_{jt}) \sum_{s=1}^{S} w(s) x_{jt}(s),$$

  $x_{jt}(s)$: liabilities with maturity of s days

  S: sufficiently large (safe) maturity

  $w(s)$: refinancing-risk weight, with $w(1)$=1, $w(S)$=0

  $c(z_{jt})$: charge per unit of RRW liabilities

  z_{jt}: vector of additional factors (size, interconnectedness)

- Shape of $w(s)$ and $c(z)$ to be fixed after
  - proper quantitative assessment
  - experimental implementation phase (?)

- Virtue of simplicity and flexibility
  - Scheme can be perfected as we advance in research on factors that contribute to systemic risk
    - individual bank characteristics (size, interconnectedness)
    - macro variables (interest rates, yield curve, asset price bubbles)
    - summary statistics such as CoVaR
  - Suitable for discretionary adjustments by the relevant supervisors:
    - Hopefully based on objective judgement of the macroprudential state of each jurisdiction
    - As a useful, visible, explicit tool for macroprudential policy

- Additional advantages of the approach:

  1. Levies will reduce political resistance to expeditiously supporting banks in systemic crises

     [Esp. if levies feed a systemic rescue/resolution fund]

  2. If levies are introduced at a supranational level...

     – institutions created around them would provide basis for enhanced coordination in rescue of international megabanks

     – threat on global financial stability imposed by those banks would be lower

     [Arrangement would force participating governments to address tricky issue of burden sharing]

5. Institutional implementation

Key issues

1. Accruing to a fund (or to the general budget)?

   Pros

   - Fund would reinforce credibility of support granted to banks in case of a crisis
   - In an international context, it would facilitate coordination

   Cons

   - Fund size may never be sufficient (and might object of speculative attacks)
   - Some think banks apparent entitlement to receive support from a fund would not be good for incentives

2. National or supranational?

- On theoretical grounds international solution would be better
- But political economy reasons & practical difficulties (legal, constitutional?) may recommend coordinated national solutions
- Possible exception: the EU or the Euro area

3. Governance

- Institutional mess:
  - General power to set taxes corresponds to parliaments
  - Tax revenue typically accrues to treasuries (though levies might be interpreted as "insurance premia")
  - Lending of last resort is provided by central banks (CBs)
  - Supervision corresponds to central banks or other agencies
  - New macro-prudential authorities created (FSB, ESRC,...)

- Possible solution:
  - Parliaments set scheme, including some basic rates
  - Governments raise all the revenues (with commitment to cover potential losses incurred by CBs in liquidity provision)
  - CBs or macroprudential authorities get delegated powers to manage discretionary ($+$ or $-$) surcharges around basic rates
  - By virtue of international agreements, part of the revenues could fed international systemic rescue/resolution fund

Other issues

1. Shadow banking. Liquidity risk levies might shift ST funding to new forms of shadow banking
   - Serious risk for all proposals
   - Limit or severely penalize (by fully charging) the recourse of unregulated institutions to regulated ones
2. Why liquidity risk only?
   - Systemic risk is a complex concept whose precise quantitative definition is in progress
   - Liquidity risk is a good "proxy" to start with
   - Other contributors to systemic risk might be accommodated into the formulae above

3. Is this an explicit insurance mechanism?

   CBs & governments have strong preference for discretion on extent and timing of liquidity provision & guarantees

   - We no longer defend declaration of "systemic crisis" as event that triggers some pre-specified coverage
   - Systemic risk levies do not imply explicit insurance mechanism
   - If a fund is created, regulating when and how the funds can be use seems unavoidable

Conclusions

- Key challenge in the current process of reform of financial regulation:
  Addressing implications of liquidity risk for systemic risk

- Liquidity risk levies are reasonable response to the challenge

  1. With the primary goal of regulating the underlying externalities, the levies will
     - make banks internalize full social marginal cost of ST funding
     - reduce maturity mismatches and implied systemic vulnerability
  2. Liquidity risk levies will reduce the political resistance to offer prompt support to banks during a systemic crisis
  3. If internationally coordinated, it will improve management (and reduce likelihood) of crises involving large cross-border banks

     [Esp. if attached to international rescue/resolution arrangement]