

Sudden Financial Arrest

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An Analogy

“Sudden cardiac arrest (SCA) is a condition in which the heart suddenly and unexpectedly stops beating. When this happens, blood stops flowing to the brain and other vital organs.... SCA usually causes death if it’s not treated within minutes....” (NHLBI/NIH)



Doctors are pragmatic...

- The front line prevention for CAD is a healthy lifestyle.
- However, the medical profession is keenly aware that this is not enough and SCA episodes still will happen.
- The pragmatic response is to complement lifestyle advise with an effective protocol to prevent death once SCA takes place.
 - The main (and perhaps only) option to treat SCA once triggered is the use of a defibrillator within 4 minutes.



Policymakers (econ) are not...

- The pragmatic approach followed by the medical profession contrasts sharply with the stubborn reluctance to supplement regulatory requirements with an effective *financial defibrillator* mechanism.
- The financial equivalent of a defibrillator is a massive provision of credible public insurance and guarantees to financial transactions and balance sheets.
 - Fuzzy moral hazard argument gets on the way...
 - Ex-post it is done... but often past the “4 minutes”



The Moral Hazard Dogma

- Public placement of financial defibrillators would lead to a surge in irresponsible financial behavior.
 - But actual behavior is not nearly as forward looking. Hubris leads to risk-compression AND undervaluation of future subsidies during distress...
 - Things change during the crisis.. but by then we want more risk taking...
- In any event, ex-post intervention does take place... so “the incentive value” of a tough ex-ante policy derives only from the imperfection of the ex-post mechanism...



An Unwarranted Risk

- The absence of readily available financial defibrillators:
 - Is a very poor incentive mechanism
 - Greatly exacerbates the costs (and likelihood) of an SFA



Outline

- **An overview of SFA:** What is SFA and its immediate causes?, who is at risk?, diagnosis, treatment, prevention
- **Financial defibrillators:** Self-insurance, contingent capital, contingent insurance; TICs
- **The international dimension (emerging markets):** IMF and E-TICs



An Overview of SFA



What is SFA and its causes?

- *Sudden financial arrest (SFA) is a condition in which trust within and toward the financial system suddenly vanishes. When this happens, the financial system freezes and credit stops flowing within the financial system and to the real economy. SFA causes severe contractions and wealth destruction in the absence of an immediate systemic policy response.*

What is SFA and its causes?

- The most immediate cause is a truly unexpected event that triggers enormous confusion.
 - There is an observable shock (e.g. real estate crash, subprime losses...) but this is small relative to the response of some important financial institutions.
 - Why such a large response? Are things worse than they seem? Who is compromised? Which instruments? What are the transmission channels? How will others react to this over-reaction? How will the government react?
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What is SFA and its causes?

- The shocks and initial confusion can cause plenty of damage through financial multipliers, loss and marginal spirals, etc.
- But to get into SFA:
 - Knightian uncertainty and complexity
 - Caballero and Krishnamurthy - Knightian uncertainty (truly unexpected event – newness)
 - Caballero and Simsek – complexity



Who is at risk of SFA?

- Every economy with a dynamic financial system. This risk is inextricably tied to financial innovation.
 - C-K: untested financial innovations, which increase in importance after a long period of prosperity.
- What about the standard bad financial habits?
 - Sure... but very little predictive power, especially for developed economies...

Who is at risk of SFA?

- Going back to the analogy with SCA:

“The major risk factor for SCA is undiagnosed coronary artery disease (CAD). Most people who have SCA are later found to have some degree of CAD. Most of these people don't know that they have CAD until SCA occurs. Their CAD is "silent"—that is, it has no signs or symptoms. Because of this, doctors and nurses have not detected it. Most cases of SCA happen in people who have silent CAD and who have no known heart disease prior to SCA.” (NHLBI/NIH)



Who is at risk of SFA?

- Similarly, there is a hidden or “silent” *financial* CAD.
 - It is **not** the real estate bubble, or the subprime loans.
 - It is the particulars of the complex financial interconnections developed during the prosperity phase.
- There is a parallel with the social learning literature
 - Wisdom after the facts / Bubbles (timing)



Diagnosis

- SCA: difficult to predict but easy to identify once it has happened
- SFA: also easy to identify once it has happened
 - In principle there is an advantage over SCA since it is bit less sudden...
 - Unfortunately, in most instances it is as if that window didn't exist since it is very difficult to gather the political support to act decisively...

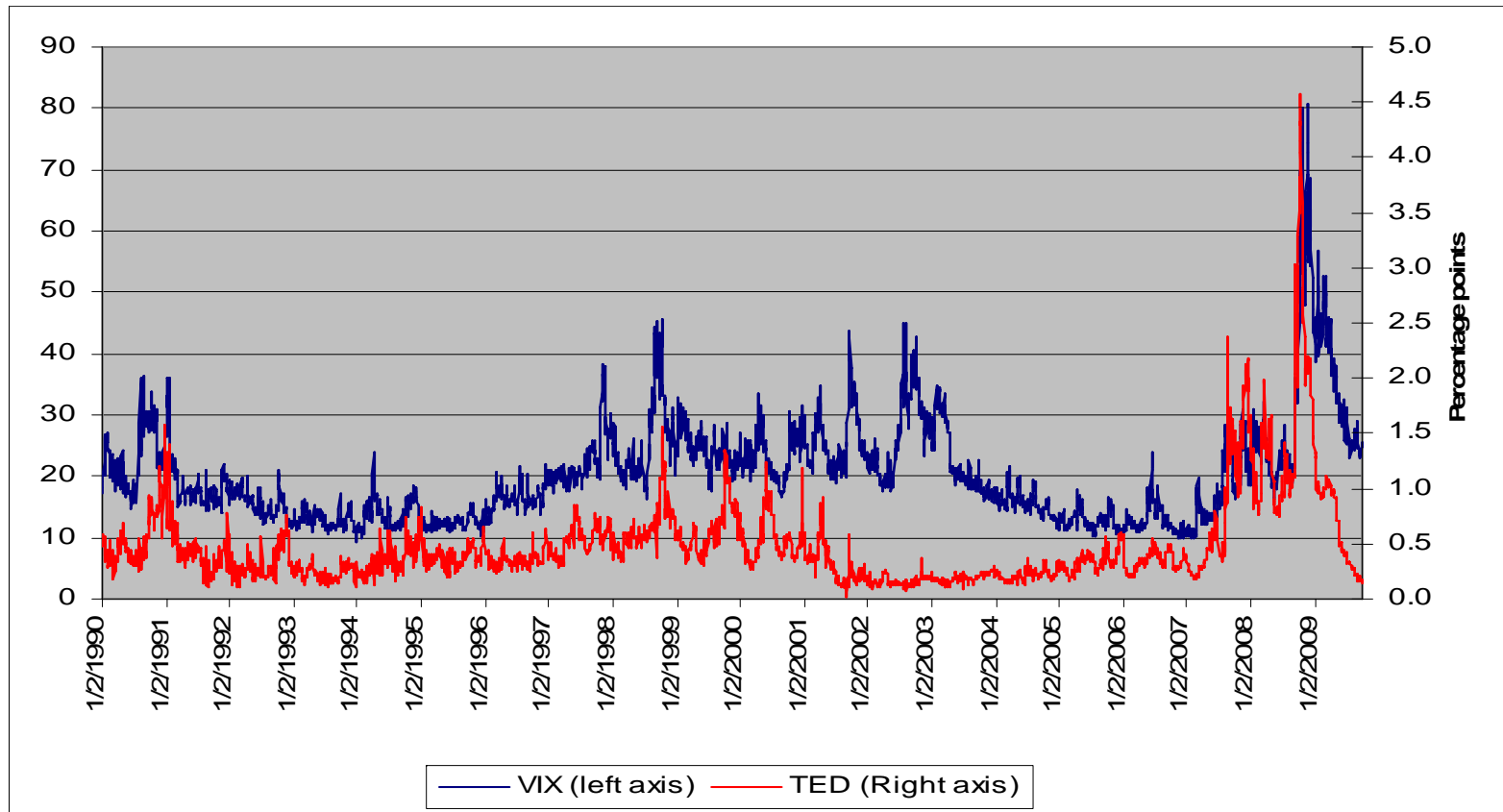
Diagnosis

- Swagel (then Assistant Secretary for Economic Policy):

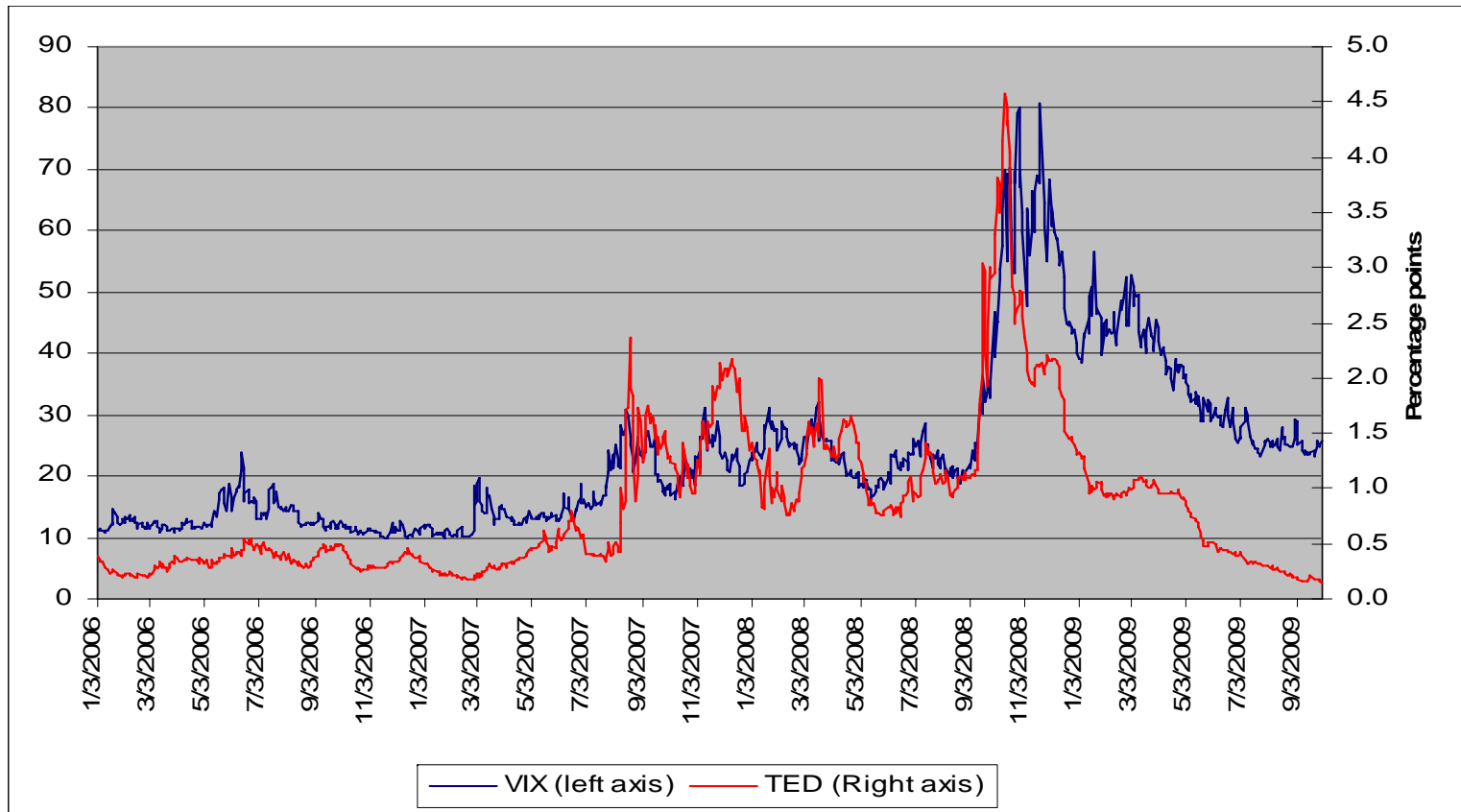
“Political constraints were an important factor in the reluctance at the Treasury to put forward proposals to address the credit crisis early in 2008... we at the Treasury saw little prospect of getting legislative approval... Legislative action would be possible only when Treasury Secretary Henry Paulson and Federal Reserve Chairman Ben Bernanke could go to Congress and attest that the crisis was at the doorstep, even though by then it could well be too late to head it off.”



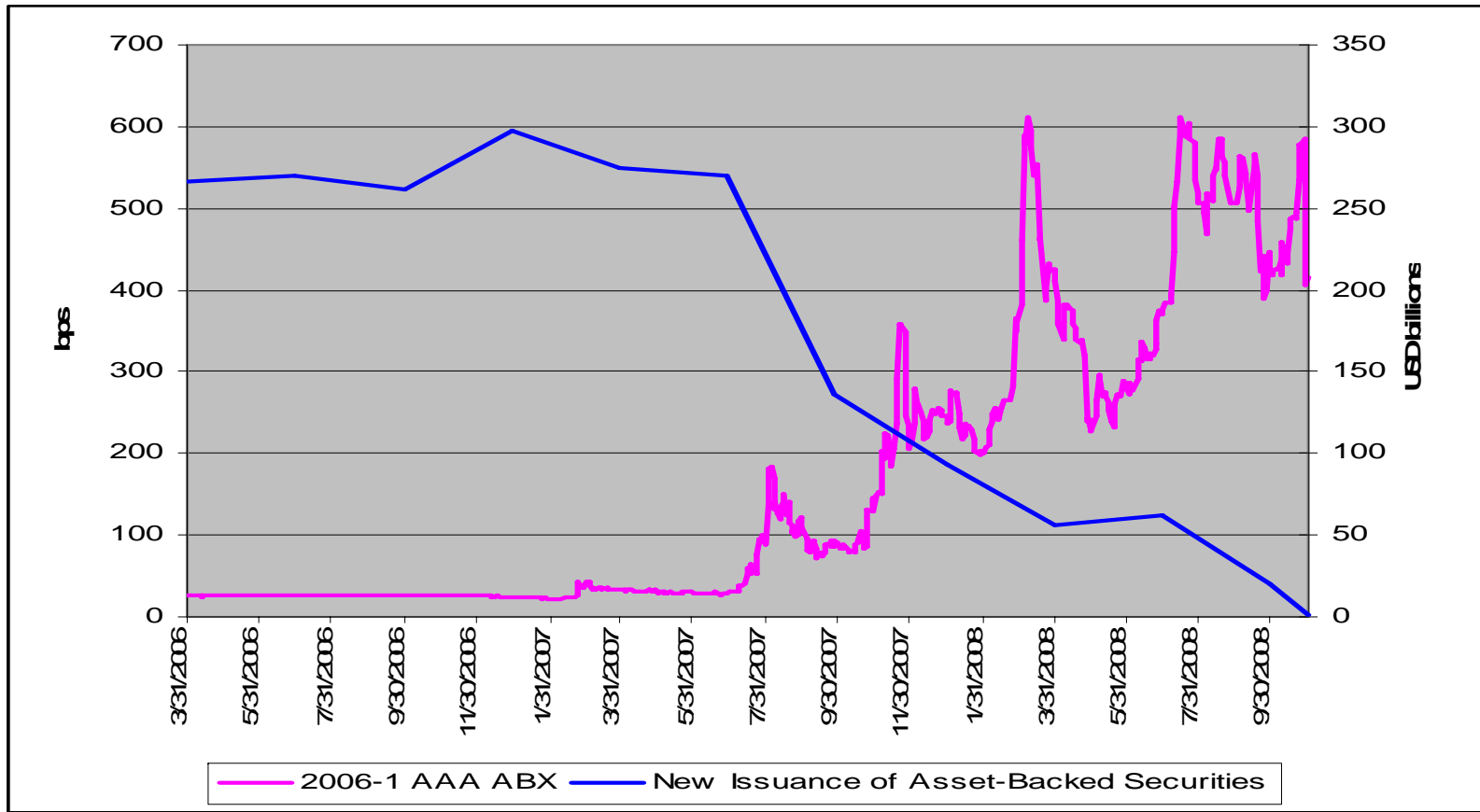
Diagnosis



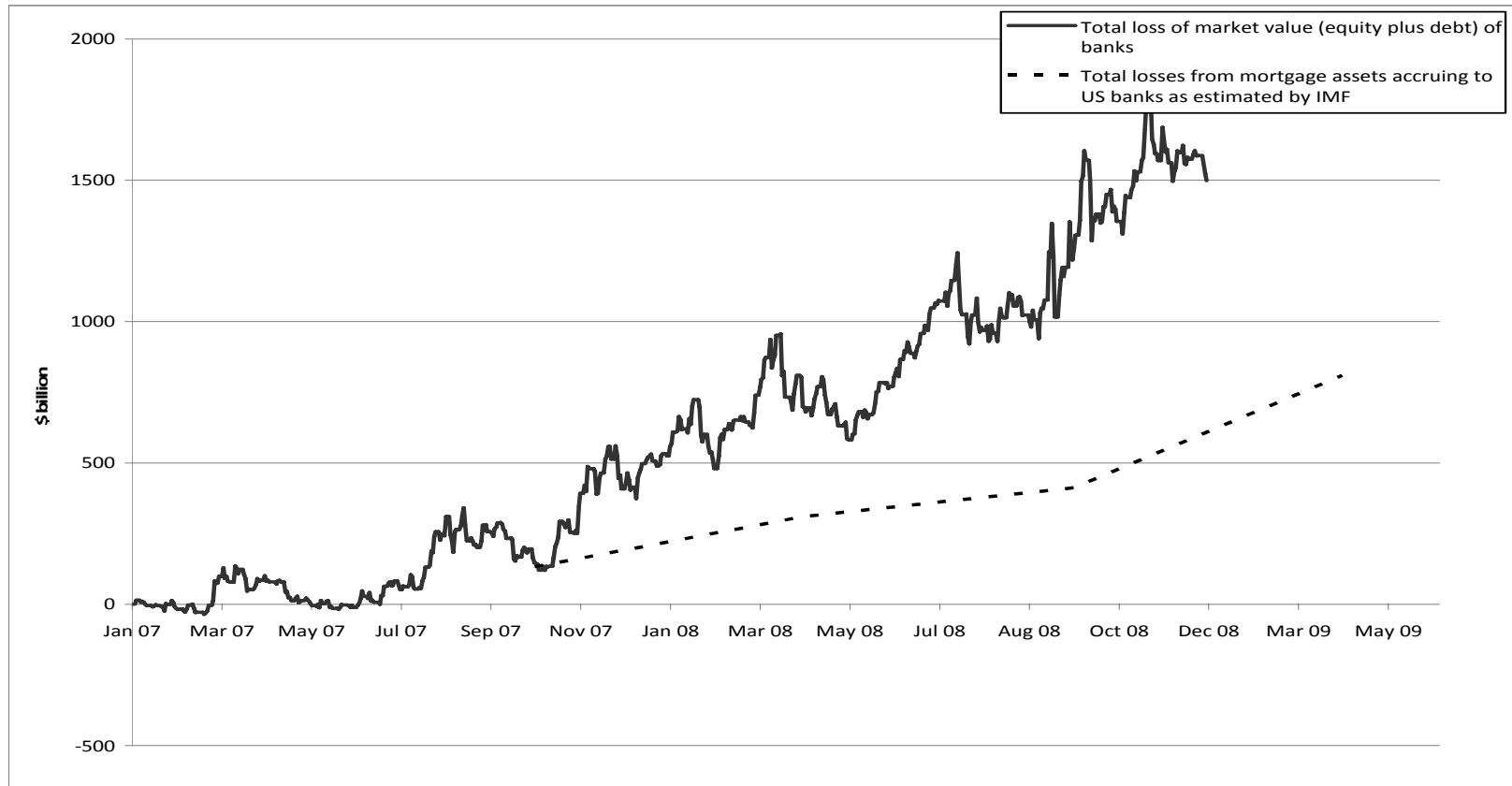
Diagnosis



Diagnosis



Diagnosis



Diagnosis

- Most of these data were available in real time
 - End of summer 2007 – something was seriously wrong
 - End of summer 2008 – better late than never... (TARP flip-flops, etc.)
- Many policymakers at the Fed and Treasury understood the imminent risk of SFA... but the treatment options at their disposal were limited by political constraints and lack of instruments



Treatment

- SCA requires immediate treatment with a defibrillator... This must be done quickly as with every passing moment there is a steep decline in the chances of SCA survival.
 - Although less dramatic in its early stages, once SFA reaches full force, the analogy with SCA and the urgency of its treatment is accurate.
 - Financial defibrillator: Large public guarantees of different components of the financial system's balance sheet.
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Treatment

- There were many financial defibrillators put in place in an ad-hoc basis during the recent crisis.
 - U.S.: Temporary insurance for money markets, backstop for commercial paper, TALF, expanded deposit insurance, opened discount window to investment banks, ring fenced assets, etc.
 - U.K.: Asset Protection Scheme...



Treatment

- Problems:
 - Too slow and idiosyncratic (rather than systemic).
CPR- rather than defibrillation-mode.
 - Near SFA is not the time to attempt to deal with long term issues... Lehman’s “surgery” was supposed to be under control...
 - Worrisome resolution authority proposals. Too many things can go wrong and trigger an SFA.



Prevention

- For low-risk populations, the main preventive prescription is a healthy lifestyle to limit CAD. Economics has an analogous protocol...
- However we need to focus more on hidden financial-CAD detection mechanisms
 - For hidden (health) CAD: C-protein test
 - Financial equivalent: Need something to detect complexity build up (CoVar, etc are steps in the right direction)... (TBTF has a good side as well)



Prevention

- The good news is that since panic is a central feature of SFA... the very existence of an effective *treatment* is *preventative* in itself.
- The debate and policy initiatives are too biased toward regulation rather than treatment. It may be the right order, but let's not forget the treatment component... complements AND substitutes.



Financial Defibrillators



The standard tools

- Monetary policy is the first line of defense.
 - It is fast, systemic, and (mostly) beyond politicians
- Next is the LLOR.
 - This is a defibrillator – it fights panics directly.
 - It provides a framework to improvise new defibrillators during crises.
- But it is insufficient when panic is widespread and hurts asset prices and capital, and beyond commercial banks.



Broad category of proposals

- Self-insurance through higher (and cyclical) capital-adequacy ratios
 - Easy but expensive
 - Pre-paid/arranged contingent *capital* injections
 - More efficient use of capital
 - (*) Pre-paid/arranged contingent asset and capital *insurance* injections
 - Most efficient use of capital (for panic component)
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Contingent *insurance* injections

- The pure panic component of a crisis, which is the main component during SFA, does not require costly capital injections.
 - These may add to the panic if they are dilutive.
- Instead, what is needed is a broad guarantee that “asset values” will be protected should conditions worsen.
 - High notional value, but inexpensive ex-post since it derives its value from *the same feature that underlies the panic*.



Contingent *insurance* injections

- C-K (2007) show that during a Knightian uncertainty episode a government concerned with the aggregate will want to provide insurance against extreme events even if it has no informational advantage over the private sector:
 - Reason: Not everyone can be worse than the average, but private agents behave as such...
- And if capital is needed, the same insurance support principle can be used to attract private capital. (Op-ed)



Tradable Insurance Credits (TICs)

- The government issues TICs which would be purchased by financial institutions, some of which would have minimum holding requirements.
- During a systemic crisis, each TIC would entitle its holder to attach a government guarantee to assets or pools of assets (it can be extended).
- It is a flexible and readily available substitute for many of the facilities that were created during the crisis.



TIC-framework: Five properties

- *It is automatic.*
 - The threshold is fuzzy, but once activated the path is clear and transparent.
- *It directly addressed the multiple-effects of panic on asset values and financial balance sheets.*
 - LLOR directly protects funding but not assets and capital. For example, extension of assets acceptable for discount window borrowing.

TIC-framework: Five properties

- *It is contingent on a systemic crisis.*
 - TICs are contingent-CDS backed by the government.
- *It is flexible*
 - Both private sector and government can decide ex-post what to attach them to and at what conversion rate.
 - Adverse selection can be dealt with CMS and Representation and Warranties clauses.

TIC-framework: Five properties

- *TICs are tradable.*
 - Private agents can use markets to reallocate the access to insurance to those that need it the most...
 - And if they don't (Lehman?), at least the TICs protect the rest of the financial system.
- Of course some of these properties can be dropped (ICs, reduced flexibility, etc.)



An example

- Pre-crisis: banks hold (notional) \$2 trillion TICs
- Summer '07: Fed announces it is considering convertibility. Weak banks stock up on TICs
- Late '07 : Partial convertibility – about \$50 billion (Bear Stearns in March '08 involved \$29 billion)
- During '08: Increasing convertibility, perhaps up to total amount of ad-hoc insurance for Bear+AIG+ Citi+Merrill (\$500 billion)



The International Dimension



Emerging markets

- The sovereign itself becomes entangled in the crisis.
 - “Sudden stop”
 - Dual liquidity problem (C-K)
- Reactions:
 - Countries: self-insurance
 - Many of us have proposed insurance facilities (The Future of the “IMF”).



The IMF today

- Went through several steps of CCL, until it converged to the current FCL
- The right kind of facility for SFA:
 - It is not a contingent capital injection but a contingent insurance injection (it gives the right to a credit line during the crisis).
 - Although it is a loan rather than a transfer...

E-TICs

- Sudden stop is just a particular manifestation of a flight to quality
- What about making emerging markets' assets part of “quality”?
- IMF issues E-TICs, that international investors can attach to EM bonds during systemic events
 - Protects the balance sheets of EM investors
 - IMF controls the trigger



Final Remarks

- Of course it makes sense to deal with regulatory and incentive problems uncovered by the crisis
- But not enough, or sometimes too expensive
- Severe crises come with a significant surprise (hence panic) component and a massive need for insuring the financial sector as quickly as possible (cardiac arrest analogy). TIC-policy is a flexible, and relatively inexpensive, tool with which to do so.



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