# Financial Disintermediation and Financial Fragility by Kosuke Aoki and Kalin Nikolov

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Discussion by
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# Key idea

- Literature on Financial Crisis 2008: Banks, Leverage.
- But: shouldn't bond markets be a substitute? "Spare tire".
- This paper: perhaps not.
  - Much of growth in bond markets was in asset backed securities ...
  - ... held by a shadow banking system ...
  - ... and when it collapsed, it made the crisis deeper.

# Modeling strategy

- Entrepreneurs borrow from banks, savers or shadow banks.
- Entrepreneurs are limited in how much they can pledge directly to savers. Thus, banks and shadow banks scoop up the rest.
- Banks provide implicit guarantees to shadow banks.
- Shadow banks: use corporate bonds, provide banks to obtain higher leverage.
- Gertler-Karadi: leverage constraint via bank value.
- Value is a function of “net worth”.
- A “bubbly asset” can be used as “net worth”.
- When the bubble collapses, the banking sector shrinks, loans are reduced etc.., **including shadow bank loans**.

# Modeling strategy

$$(1-\lambda)\,(\text{“Gertler-Karadi-Kiyotaki”})^2 + \lambda\,\text{“Bubbles”} + \epsilon_{\text{“Shadow”}}$$

# What is nice

- Serious attempt to model the shadow banking system.
- Serious attempt to provide a role for asset-backed securities.
- Focus on regulatory arbitrage.
- The whole story feels rather sensible “at a distance”.
- Thoughtful, good paper, quite well written.
- Good for teaching what comes after “Gertler-Karadi-Kiyotaki”.

# Questions remain

1. **Bubbles, bubbles everywhere.** Abstract, intro, early description of the model, large part of the analysis. Key for 2008 or just a modeling device?
2. **Shadow bank guarantee**: coarse modeling. It should be the center point!
3. **Constraints** faced by entrepreneurs and banks: **plausible?** Is there direct evidence?
4. **Asset-backed securities**: concern real estate and households, not start-up entrepreneurial financing.
5. **How to get funds from savers to borrowers**? Policy conclusions?

# 1. Bubbles, bubbles everywhere

- Bubbles: in the abstract, intro, first paragraph of model description, large part of the analysis.
- Hard on the non-initiated.
- Bubbles: necessary for your story? Bubbles in the model:
  - inherently useless, but count as net worth.
  - Banks can leverage it.
  - Therefore it trades at a positive price for a while.
  - Exogenous: price collapses to zero, net worth shrinks.

  Anything else that shrinks net worth is fine too.
- What was that bubble asset in 2008?
- Key innovation in this paper is the shadow banking sector: focus on that!

# 2. Shadow bank guarantee

- "Direct loans will only trade with the help of a bank guarantee which costs $p_t$ per unit of bonds"
- Evolution of net worth (9): income from guarantee, but not "risk" from guarantee payments:

$$n_{t+1} = R_t^l b_t + \mu_{t+1} m_t^b - R_g^d d_t + p_t s_t$$

- Market "diversion" constraint (11): treats $s_t$ "like" $d_t$. Why?

$$(1 - \lambda^m)(s_t + d_t) \leq V(n_t)$$

- Regulatory constraint (12): ignores guarantees. Fine.

$$(1 - \lambda^r) d_t \leq V(n_t)$$

# 3. Constraints: plausible?

- Market “diversion” constraint (11): $\lambda^m = 0$

$$(1 - \lambda^m)(s_t + d_t) \leq V(n_t)$$

  Translation into a leverage ratio?

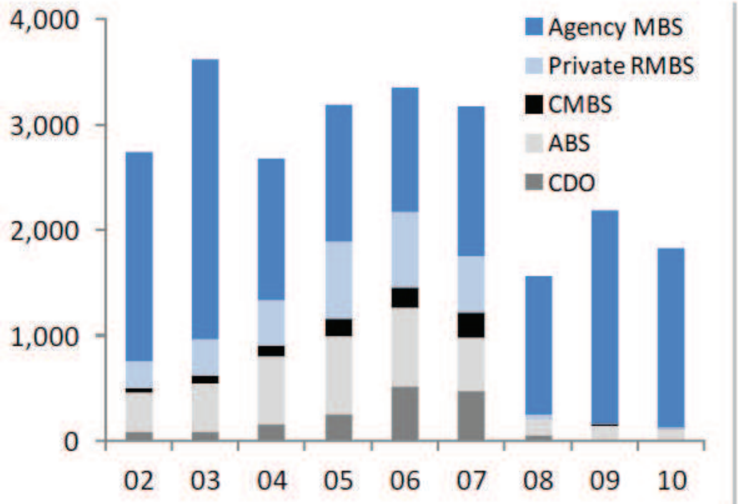
- Regulatory constraint (12): $\lambda^r = 0.77$

$$(1 - \lambda^r)d_t \leq V(n_t)$$

  Translation into capital requirement?

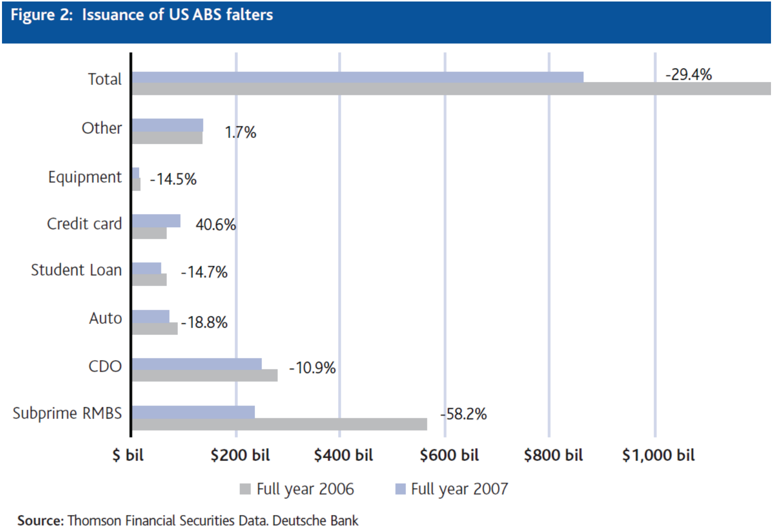
- Entrepreneur: why do they borrow? To pre-pay the workers? Is that done?
- Entrepreneurs: can pledge fraction $\theta = 62\%$ of expected output to banks, nothing to savers (in case of “shadow banking”).
- What about equity markets for entrepreneurs? What about default rates on corporate bonds?
- Banks “die” with probability $1 - \gamma = 13\%$ per year.
- Long-term firm-bank relationships?

# 4a. Asset-backed securities



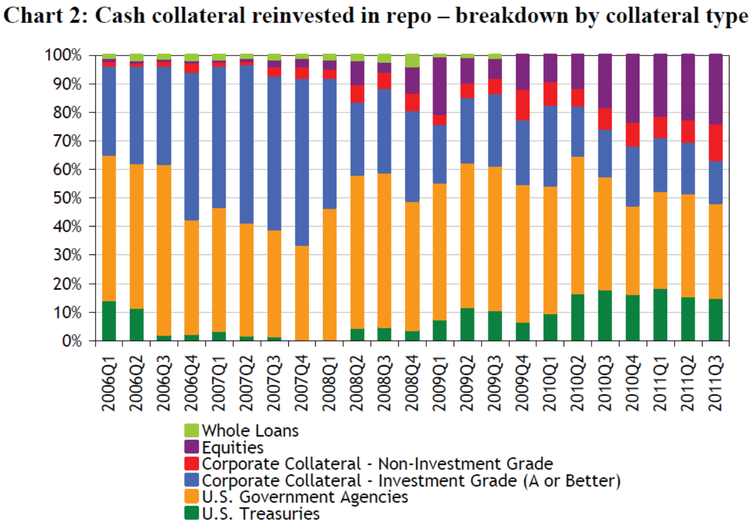

Source: Blommestein et al., Outlook for the Securities Market, OECD Journal: Financial Market Trends, vol 2011 issue 1

# 4b. Asset-backed securities




Source: Global Securitisation and Structured Finance 2008, Deutsche Bank

# 4c. Asset-backed securities




Source: Financial Stability Board, Interim Report April 27, 2012

# How to get funds from savers to borrowers?

- Two key frictions here:
  1. Banks better at extracting funds from defaulting borrowers.
  2. Shadow banking guarantees without regulatory restrictions.
- On 1.: are they?
  - Once a pool of loans is securitized, does it really matter who holds them? Evidence? Note: **crucial**!
  - These assets are risky: so what? Equity is too.
  - Policy implication: make asset-backed securities as accessible to households as equity.
- On 2.: yes!
  - Jurassic Park.
  - Pol. impl. 1: make securitized assets broadly accessible.
  - Pol. impl. 2: let money market funds "break the buck".
  - Pol. impl. 3: bank deposits are not safe. Stick to Bagehot!
  - Pol. impl. 4: you want safe assets? Use full-reserve banks!

# Conclusions

- Cool paper. $(1-\lambda)$( "Gertler-Karadi-Kiyotaki" $)^2 + \lambda$ "Bubbles" $+ \epsilon$"Shadow Banking".
- Serious attempt to model shadow banking sector. Crucial!
- Suggestion: less on bubbles, more on shadow banking.
- Constraints: in line with literature, at odds with evidence.
- Policy implications:
  - The paper could question its constraints.
  - Make asset-backed securities as accessible to households as equity.
  - Someone has to bear risks. It shouldn't be the tax payer.