

# Some Thoughts on Frictions and SME Access to Finance

**16<sup>th</sup> Annual DNB Research Conference  
'The Impact of Credit on the Dynamics of SMEs'**

*De Nederlandsche Bank, 17-18 October 2013*

**Gregory F. Udell**



**KELLEY SCHOOL OF BUSINESS**

INDIANA UNIVERSITY

# Presentation Overview

- **Some thoughts on research and the big picture**
  - **What are the key issues in SME finance?**
- **Some focus**
  - **Focus topic #1**
  - **Focus topic #2**





**THIS PRESENTATION MAY BE SELF-SERVING!**

# Key Issues in Access to SME Finance

- **Is there an SME “funding gap” and how big?**
- **What type of SMEs are most vulnerable?**
- **Does bank type matter?**
  - Small vs. Foreign?
  - Large vs. Small?
  - Conventional vs. Micro-lenders?
  - For-profit banks vs. non-traditional banks (e.g., state-owned, coops)?
- **How do banks reduce this gap?**
- **How is this affected by banking market structure?**
- **How do shocks affect credit and the real sector?**
- **Can gov’t programs and policies help (e.g., gov’t guar. programs)?**
- **Does the contracting environment matter?**
  - Information richness (e.g., 3<sup>rd</sup> party info exchanges)
  - Legal structure (e.g., collateral laws, commercial disputes)
  - Bankruptcy laws

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**Focus #1**



**Focus #2**

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Amiti and Weinstein  
 Ongena, Peydro and van Horen  
 Carneiro and Portugal  
 Bentolila, Jansen, Jiménez and Ruano  
 Sedlacek and Sterk  
 Ippolito. Ozdagli and Perez



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D'Ignazio and Menon



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Schott

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*Note: Nearly all papers are also directly, or indirectly, related to this first issue - and many of the others*

# Segway into Three Papers

- **“Liberalization and Risk Taking: Evidence from Government-Controlled Banks”**
  - Manuel Illueca, Lars Norden and Gregory F. Udell
- **“A Close Look at Loan-to-Value Ratios: Evidence from the Japanese Real Estate Market”**
  - Arito Ono, Hirofumi Uchida, Gregory F. Udell and Ichihiro Uesugi
- **“Do Changes in the Timeliness of Loan Loss Recognition Affect Bank Risk Taking?”**
  - Manuel Illueca, Lars Norden and Gregory F. Udell

# Many Interesting Questions on SME Finance Still Unanswered, For Example:

- **Who is most vulnerable?**
  - Theory tells us opacity matters
  - Firm size surely drives opacity
  - But, most studies confined to either small or large companies but not both
    - e.g., the SSBF vs. Compustat
    - How much can we impute from research on large firms about SMEs?
    - Some exceptions look at breaking relationships across wide size swath (Gopalan, Udell and Yerrimilli 2011, Degryse, Ionnidou and Schedvin 2013)

# Many Interesting Questions Still Unanswered, For Example: (II)

- **What is soft information?**
  - How good are our proxies?
    - Any new contenders? e.g., innovation (Wolfe 2013)
  - “hard to quantify”; “not easily transmitted”
    - What do “hard” and “easily” mean
  - Can some soft info be hardened and transmitted?
    - If so, which types? how? when?
  - Is there *quasi-soft information* (e.g., transferable within a bank but not across banks)
    - Checking account info? (e.g., Norden and Weber 2010)
  - What can we learn from bank rating systems that have subjective components? (e.g., Agarwal and Hauswald 2010)

# Interesting Questions Still Unanswered, For Example: (III)

- Quantifying the funding gap – solving the identification problem (*holy grail*)
  - Natural experiments may be best – but they are limited
  - One good alternative is zero-one indicator variables survey data (e.g., BEEPS, ISAE-ISTAT, SAFE)
  - But are other alternatives better?
    - Trade credit dependence (e.g., Petersen and Rajan 1994)
      - Trade credit not as expensive as it seems (Burkhart, Ellingsen and Giannetti 2009)
      - Trade credit dependence doesn't quantify gap
    - Fundamental Q model (O'Toole and Newman 2013)
    - Disequilibrium model (Carbó-Valverde, Rodríguez-Fernández, and Udell 2011)

# Many Interesting Questions Still Unanswered, For Example: (IV)

- **Government solutions, e.g., government guarantee programs**
  - **Ubiquitous**
  - **Some shock-specific**
    - **Japan (special guar program during lost decade, Fukushima)**
    - **U.S. (TARP-related minority and bank capital programs)**
  - **Need to know the size of gap to assess the value of these programs**
  - **Which work, which don't?**
  - **Surprisingly under-researched with notable exceptions (e.g., Hancock, Peek and Wilcox 2007, Uesuigi, Sakai and Yamashiro 2006, D'Ignazio and Menon 2013)**

# Many Interesting Questions Still Unanswered, For Example (V)

- **Shock-induced credit crunches**
  - **Again, our ability hinges on distinguishing between demand and supply effects**
    - Experiments like Peek and Rosengren (1997) not generally available in this crisis
    - multiple lender banking allows for firm fixed effects – but, does it apply to single-lender environments like the U.S.?
  - **For some crises, SME firm-level data virtually unavailable, e.g.**
    - Japan during the lost decade
    - U.S. during this crisis



# Many Interesting Questions Still Unanswered: Focus Topic #1

## Non-Traditional Banks

# Non-Traditional Banks: A Global Perspective

- **The common denominator**
  - Non-traditional governance
  - Not stockholder owned
- **Often deregulated (e.g., Spain, U.S)**
- **Ubiquitous – over 40% of global banking system (La Porta, Lopez-de-Silanes, and Shleifer 2002)**
  - Germany - savings banks
  - Italy – cooperative banks
  - Japan – cooperative banks
  - U.S. – Mutual S&Ls, Mutual Savings Banks, and Credit Unions (and now Fannie and Freddie)
  - Spain - The Cajas

# Non-Traditional Banks: A U.S. Perspective

- The U.S. entered the 1980s with a major component of its “banking” being non-traditional
  - Savings and loan associations (residential mortgages)
  - Mutual savings banks (consumer loans and mortgages)
  - Credit Unions (consumer loans)
  - Fannie and Freddie (residential mortgages)
- Changes since 1980 non-traditional
  - S&Ls
    - Deregulated and allowed to make commercial loans
    - Massive failures in 80s; many of remaining demutualized
    - WaMu failed in 2008 (largest “bank” failure)
  - Most mutual savings have disappeared
  - Fannie and Freddie grew dramatically in size and failed in 2008
    - Now the entire “buy-side” of MBS market
  - Credit Unions
    - Spatial and product deregulation incl. making commercial loans
    - Now nearly 10% of depository institutions in the U.S.!

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Is there  
risk here?



# Non-Traditional Banks - Research

- **Much study on some dimensions:**
  - Tend to underperform private banks, negative real effects (e.g., La Porta et al., 2002, Clarke and Cull 2002, Barth et al. 2004, Beck et al. 2004, Berger et al. 2005, Iannotta et al. 2007, Hau and Thum 2009, Puri et al. 2011)
  - Display weak governance, expense-preference behavior, lower efficiency (Akella & Greenbaum, 1988; Mester, 1989 & 1991)
- **Not so much on other dimensions**
  - No prior study of governance and risk-taking ala Laeven and Levine (2009) on non-traditional banks.
    - Although new study on political elections and lending behavior in German savings banks (Englmaier and Stowasser 2013)

# Non-Traditional Banks: Good News/Bad News

- **Examples of “good” behavior**
  - **Spanish cajas viewed positively prior to deregulation**
    - **Paid “social dividend”**
    - **Relatively efficient**
  - **Japan Finance Corporation earthquake response (Fukushima 2013)**
  - **Credit unions in the U.S. did not engage in predatory overdraft pricing in 2001/2002 like large U.S. banks (FDIC 2008)**
  - **Brazilian government banks during crisis (Coleman and Feler 2013)**

# Non-Traditional Banks: Good News/Bad News

- **Examples of “bad” behavior**
  - **Savings and loans in the US during 1980s**
  - **Corporate credit union scandal in US**
  - **Banca Monte dei Paschi di Siena (controlled by Fondazione Monte dei Paschi di Siena)**
  - **Cajas after deregulation (Illueca, Norden and Udell 2013)**

# Going Forward(?)

- **How much do we really know about the non-traditionals? ... and, their lending behavior?**
- **Non-traditional component of global banking system not necessarily contracting: e.g., U.S.**
  - **Fannie and Freddie now 90% of securitized mortgage market**
  - **Credit unions now almost 10% of US deposit base**
    - **Almost completely deregulated**
    - **Can now lend to SMEs up to 12.5% of assets**
    - **Congress considering increasing lending constraint to 27.5%**



# Liberalization and Risk Taking: Evidence from Government-Controlled Banks

*Review of Finance*  
*Forthcoming 2013*

Manuel Illueca  
Lars Norden  
Gregory F. Udell

*(The Cajas – A cautionary tale of SME lending  
gone wild)*

# The Story of the Cajas

- **The cajas are a very interesting experiment**
  - **Governance is state-centered (i.e., gov't governed)**
  - **Significant deregulation: the final removal of branching restrictions in 1988 followed by aggressive expansion**
    - **Also associated with a change in governance that affected political influence**
- **The context ...**

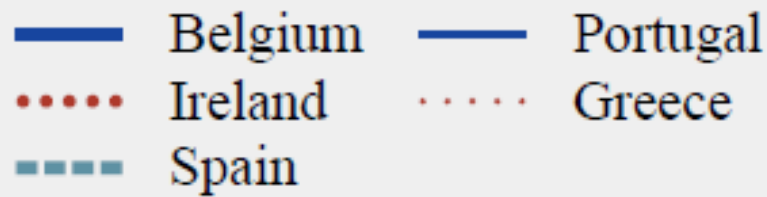
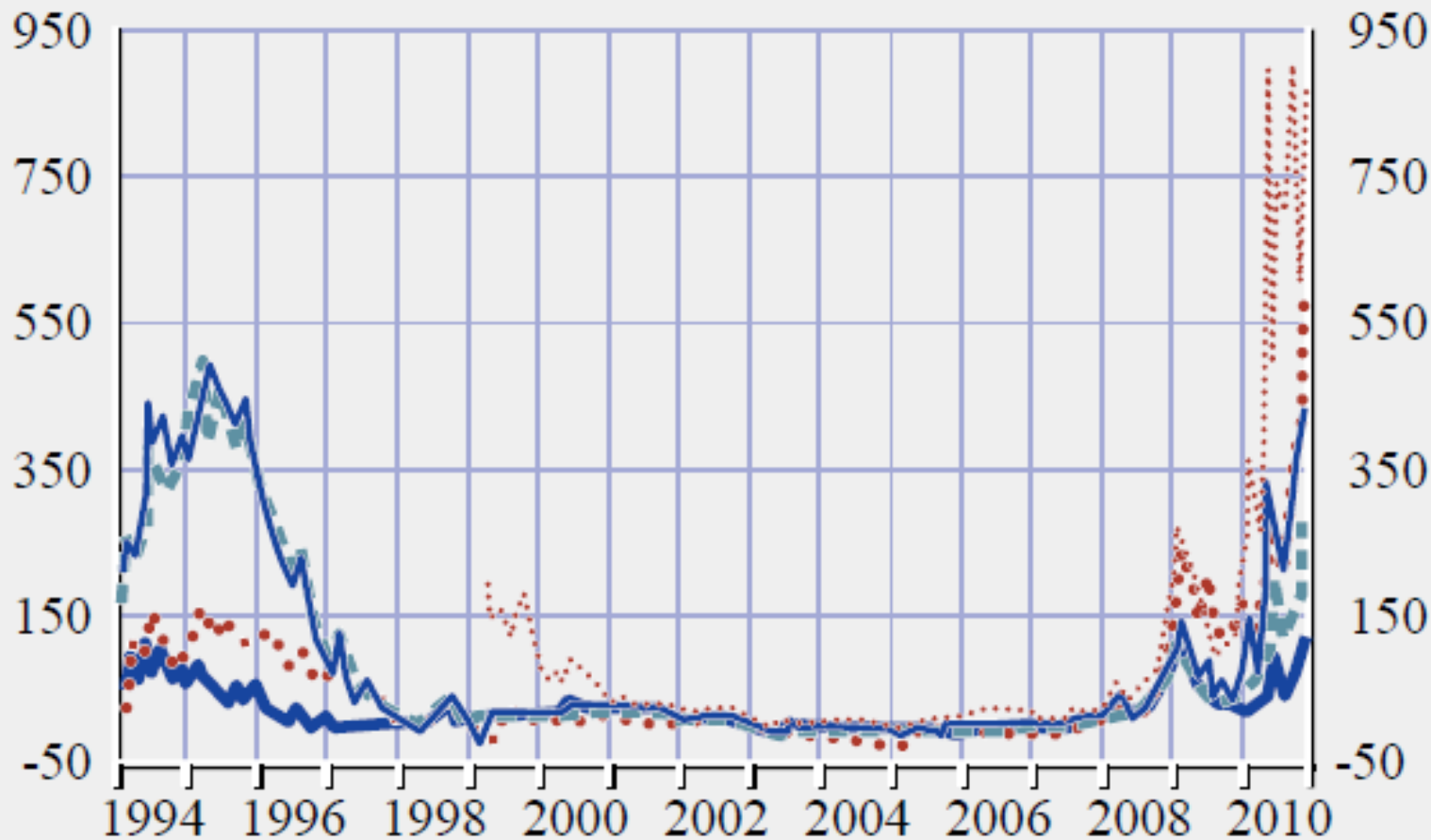


Chart 8 Spreads of 10-year government bonds vis-à-vis Germany, in basis points



# Spain and the Cajas

- **Cajas at center of bubble**
- **Cajas were nearly 50% of the Spanish banking system**
  - **The cajas are a disaster**
  - **The majority of the 2010 and 2011 European stress test failures were cajas banks**
  - **Failed cajas were bailed out and force-merged, e.g., Bankia a conglomeration of 7 cajas**
    - **43 of 45 cajas (in existence in 2009) restructured (only 2 small ones remain independent)**
    - **All SBs had to convert to banks**
    - **Gov't hoped-for synergies illusory**
    - **Continued revelation of massive losses swamp any synergies**
    - **Estimated total SB losses range as high as 153 billion euros**
    - **Bankia former board members all prosecuted for fraud**
    - **Now creates a TBTF problem**

# The Cajas and Deregulation in Spain

- **Pre-Crisis History**
  - **Existed for 100 years**
  - **Established by**
    - **local governments**
    - **churches and/or**
    - **welfare societies**
  - **Private foundations with no owners**
    - **either retain profits, or**
    - **pay “social dividends”**
  - **Purpose:**
    - **promote savings by middle- and working-class people**
    - **provide lending to small businesses from the same city or province**

# The Cajas and Deregulation in Spain II

- **Governance of Cajas**
  - Cajas initially municipal-level institutions
  - In 1985 national legislation gave control to:
    - Depositors (44%)
    - Local/regional governments (40%)
    - Founders (11%)
    - Employees (5%)

# The Cajas and Deregulation in Spain III

- **Deregulation**

- In 1975 spatial scope extended to provincial level
- After 1975, extended to regional level
  - usually at the expense of local government's voting rights
  - Although all stakeholders were represented in the board, not all of them had the ability to influence the bank's management
  - Then in 1988 extended nationwide
- Significant expansion
- Explosive growth in lending to real estate and construction firms

# 17 regions, 52 provinces

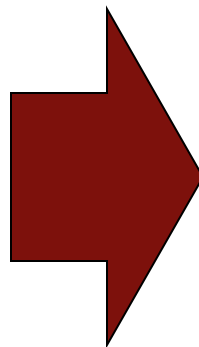




# Deregulation Led to Shift in Governance

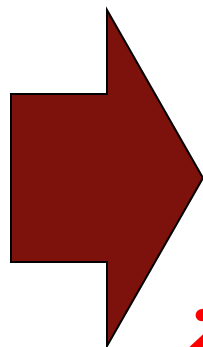


*Depositors*  
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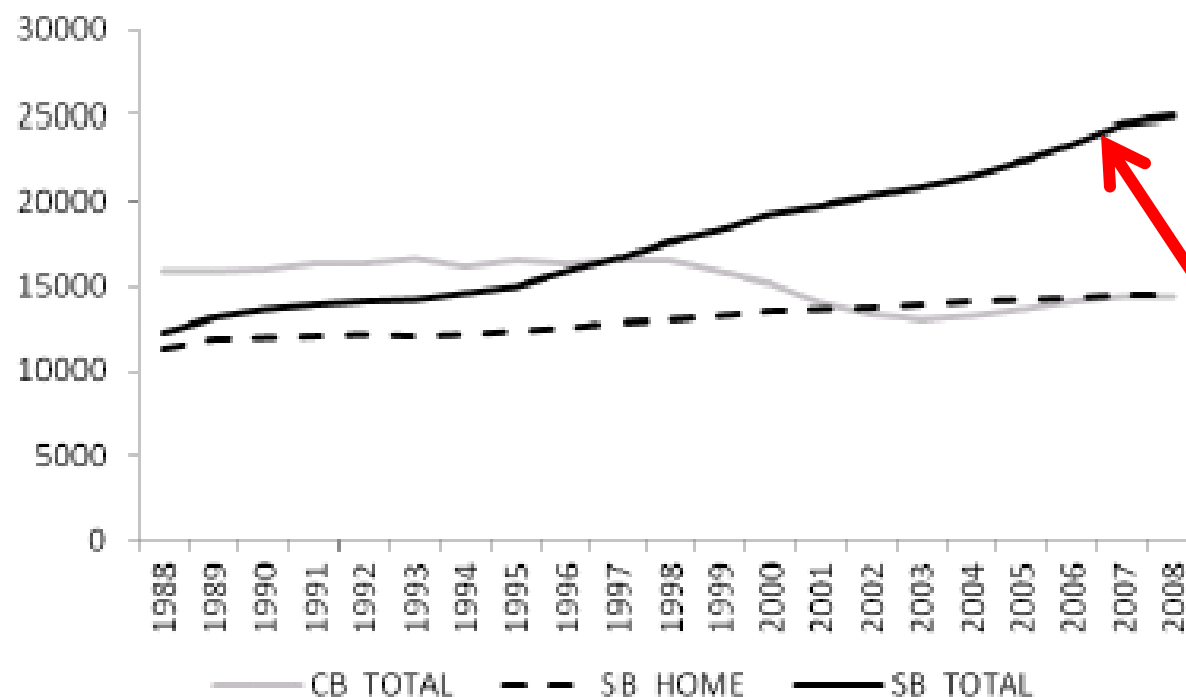
**Depositors**  
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*Diffuse*

*Consolidation of control: for 50% of SBs, one regional government had a stake on average of 20%*

**Figure 1: Evolution of bank branches and bank lending in Spain from 1988 to 2010****Panel A: Number of bank branches**

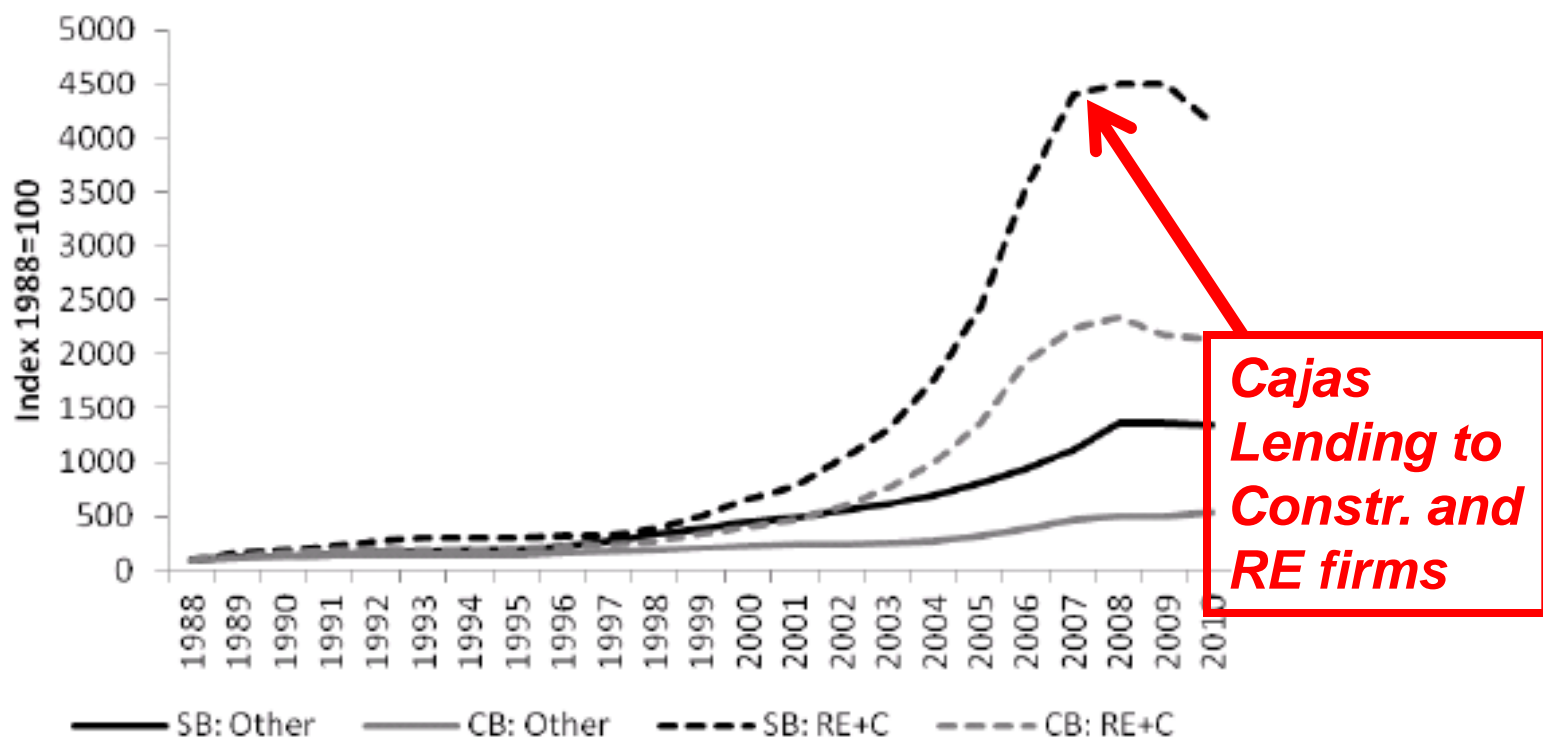
This figure shows the evolution of the number of branches of commercial banks (CB\_TOTAL) and savings banks (SB\_TOTAL). SB\_HOME refers to the number of branches of savings banks in their home markets.



**Cajas  
Branches**

### Panel B: Bank lending

This figure shows the evolution of loans extended by savings banks (SB) and commercial banks (CB) to real estate and construction firms (RE + C) and other firms from 1988 to 2010. The absolute numbers are converted into an index that equals 100 in the year 1988.



# Key Results

- **After deregulation, cajas expanded rapidly**
- **Expansion was associated with a significant increase in risk in lending portfolios**
- **Weak governance played a role**
  - **Facilitated by political influence**
  - **Increased political influence resulted in:**
    - **higher ex ante risk**
    - **higher ex post risk (i.e., default)**

# Results – Ex Ante Risk Taking

- **Analyze firms that start borrowing from SBs from other provinces**
  - **Focuses on expansion behavior**
- **Univariate analysis**
  - **Ex ante risk greater**
    - **ZSCORE riskier than those that “never” borrow from SB**
    - **EQ/TA ratio lower for “never group”**
    - **Risk highest when regional gov’t has stake in SB and host and home are the same political party**
- **Multivariate analysis**
  - **Confirms univariate analysis**

*Table II.*

Panel A: All firm-year observations

Variable	Never	Firms borrowing from savings banks from other provinces? Yes (NEW=1)				Ex post	Average
		Ex ante					
		No stake of reg. gov. in sav. banks (NEW_RG=0)	Stake of reg. gov. in sav. banks (NEW_RG=1)	Stake of reg. gov. & same political party (NEW_RG_P=1)			
TA	8,758	8,757	8,765	8,749	9,375	10,446	9,961
EQTA	37.08	32.40	34.13	30.96	29.44	32.31	32.33
CURR	128.74	117.67	120.02	115.83	114.76	118.50	118.29
ROA	3.30	3.05	3.20	2.90	2.84	2.69	2.79
ZSCORE	2.07	1.78	1.83	1.73	1.66	1.71	1.73
NREL	2	2	2	2	2	4	3
BIGAUDIT	0.30	0.23	0.23	0.23	0.25	0.26	0.25
Obs.	120,623	14,172	7,072	7,100	3,175	41,127	55,299

**Risk: higher for firms borrowing from SB out of home region and higher yet if SB politically influenced**

*Table II.*

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# Many Interesting Questions Still Unanswered: Focus Topic #2

## Collateral

# Many Unanswered Questions about Collateral and SME Lending. For Example:

- **One particularly troublesome issue:**
  - **Inside vs. outside collateral**
    - **Both irrelevant in M&M world**
      - **Inside collateral just rearranges priority**
  - **Very different implications regarding signaling (ex ante) and monitoring (ex post) theories of collateral**
  - **But many empirical studies (including recent ones) make strong claims with only a dummy variable for collateral**

## **Many Unanswered Questions about Collateral and SME Lending. For Example II:**

- **Many countries adopting new laws on collateral**
  - **New laws on security interests in “moveable assets”**
    - **e.g., Cambodia, China, Japan, Vietnam**
    - **However, other pieces of legal and lending infrastructure still work-in-proces (to varying degrees)**
      - **Registration systems**
      - **Collateral control**
      - **Judicial system**
      - **Bankruptcy system**
      - **Adoption of lending best-practices**
  - **Factoring laws also changing (e.g., Eastern Europe, Vietnam)**

# Many Unanswered Questions about Collateral and SME Lending. For Example III

- Perhaps the least understood is the behavior of collateral over the business cycle in terms of SME lending
  - Do SME lenders advance more in boom times?
  - *That is, are LTV ratios procyclical?*
- Evidence in the literature on the general issue of business lending procyclicality (e.g., Borio et al., 2001; Horvath, 2002; Borio and Lowe, 2002; Berger and Udell 2004)
- Subprime phenomenon (sort of) consistent with pro-cyclicality in US residential mortgage lending
- Consistent with my casual observation in asset-based lending
  - Advances (i.e., LTVs) on A/R and inventory appear procyclical in US

# Counter-cyclical Policy Tools Hot Topic Now

- **Policy interest in countercyclical policy measures, e.g.,**
  - **Basel III counter-cyclical capital buffers**
    - Jokipii and Milne (2008)
    - Basel Committee on Banking Supervision (2011)
  - **Reserve and liquidity requirements**
    - Camors and Peydro (2013)
  - **Dynamic loan loss provisioning**
    - Saurina (2009), Jimenez et al. (2013)
  - **LTV ratios**
    - Stein (1995)
    - Almeida, Campello, and Liu (2006)
    - Crowe et al. (2011)
    - Goodhart, Kashyap, Tsomocos and Vardoulakis (2012)
    - Suh (2013)

**But, will they work? --- Not Clear**

**Evidence limited and mixed (Blanchard et al. 2013)**

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*Let me diverge for a moment*

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# Do Changes in the Timeliness of Loan Loss Recognition Affect Bank Risk Taking?

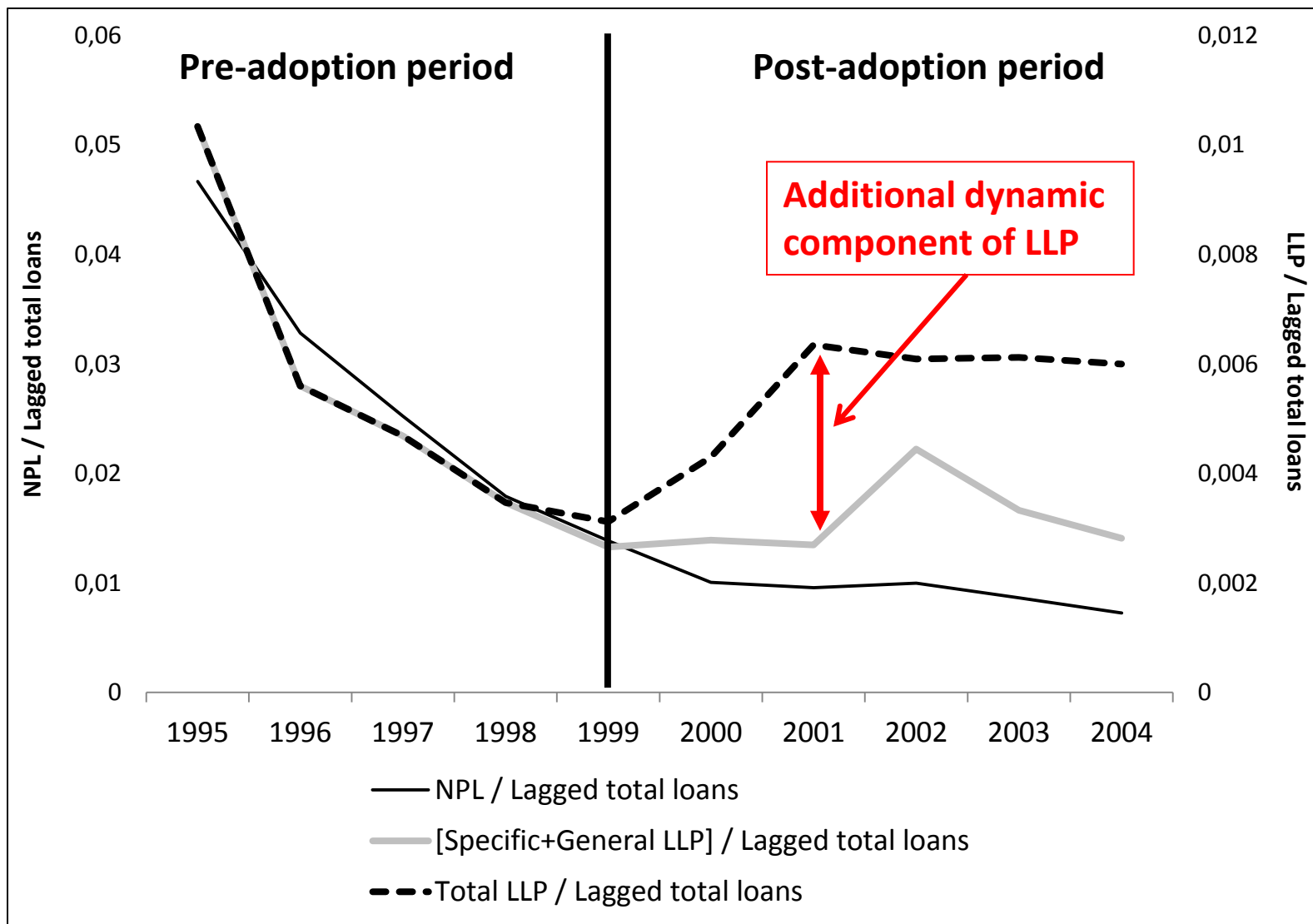
Manuel Illueca  
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*Dynamic Provisioning –  
Another cautionary tale*

# Spanish Adoption of Dynamic Loan Loss Provisioning

- **Large-scale field experiment: Exogenous change in LLP rules imposed on all banks by the Bank of Spain**
- **First international attempt to reduce the cyclicity and increase the timeliness of loan loss recognition**
- **Old provisioning regime**
  - Minimum LLP linked mechanically to NPL
  - Discretion to add more (e.g., “conditional” conservative provisioning)
- **New (dynamic) provisioning regime – old + dynamic component**
  - Dynamic component mechanically linked to 6 loan categories
  - “Unconditional” conservative provisioning





# The Good Side

- **Build capital during the boom times so buffer can absorb losses during shocks**
- **Smooths cycles in credit supply**
  - **Supported firm financing in Spain during the bad times (Jimenez, Ongena, Peydro and Salas, 2013)**

# A Dark Side?

- **Dynamic provisioning certainly didn't prevent implosion of the Spanish banking system**
  - ... but there's more
- **Our result: Dynamic provisioning led to more risk-taking in business lending**
  - Interestingly, effect bigger for
    - conditionally conservative banks, and
    - commercial banks
    - But, less for the cajas

# What About LTV Ratios?

- **Will imposing countercyclical LTV ratios constrain “lax lending” during boom period?**
  - **Will they work in business lending?**
  - **Real estate is the most common form of collateral in SME lending world-wide (Beck, Demirguc-Kunt and Martinez Peria 2008)**
  - **More fundamentally, are bankers lax in the sense of lending more against real estate collateral to businesses during boom times?**
  - **Do LTV ratios rise during booms?**

# **A Close Look at Loan-To-Value Ratios: Evidence from the Japanese Mortgage Registry**

**Arito Ono  
Hirofumi Uchida  
Gregory F. Udell  
Iichiro Uesugi**

***Real estate LTV caps in SME lending –  
Another cautionary tale***

# Our LTV Laboratory: The Japanese Real Estate Bubble and the Lost Decade

- **Spectacular real estate bubble that burst in April 1990**
  - Led to “lost decade”
- **Common practice to lend against real estate in SME sector**
  - Bubble period characterized by Japanese “**collateral principle**”

# Key Questions

- **Is there evidence that bankers were lax in the bubble period lending more against real estate, i.e., are LTVs procyclical in SME lending?**
- **Would LTV caps have worked?**
  - **Goodhart et al. (2012) provides theoretical evidence that they might not.**
  - **What does the empirical evidence from Japan tell us?**

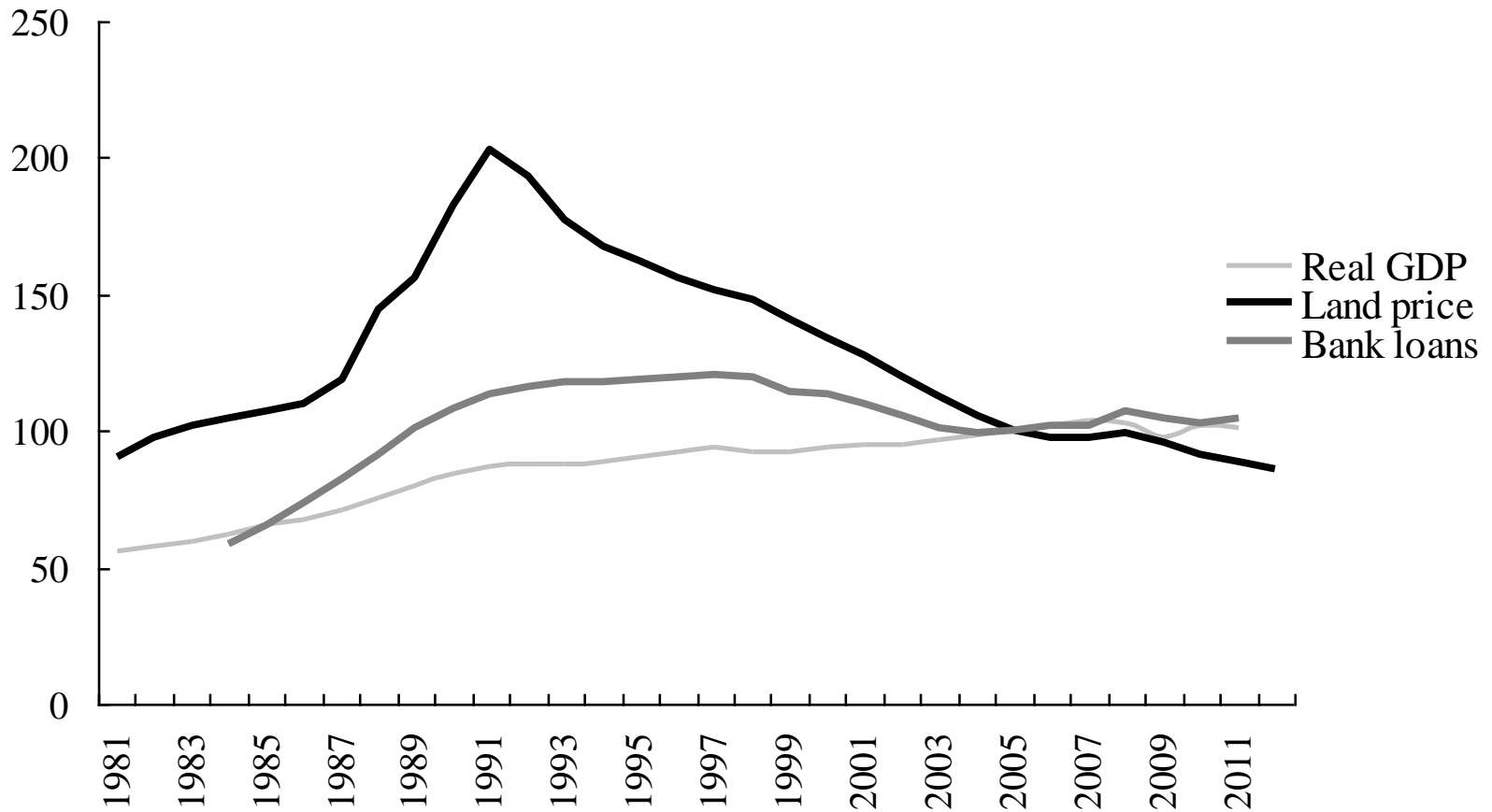
# Data

- **Data on collateral from real estate registrations from Teikoku Databank (TDB)**
  - 1975 to 2009
  - TDB largest business credit information provider in Japan
  - Similar to Dun and Bradstreet in US
  - Information includes
    - Loan amount
    - Real estate location
    - Whether owned by business or by entrepreneur
- **Land prices estimated using data from Public Notice of Land Prices data set**
  - Estimated using hedonic model



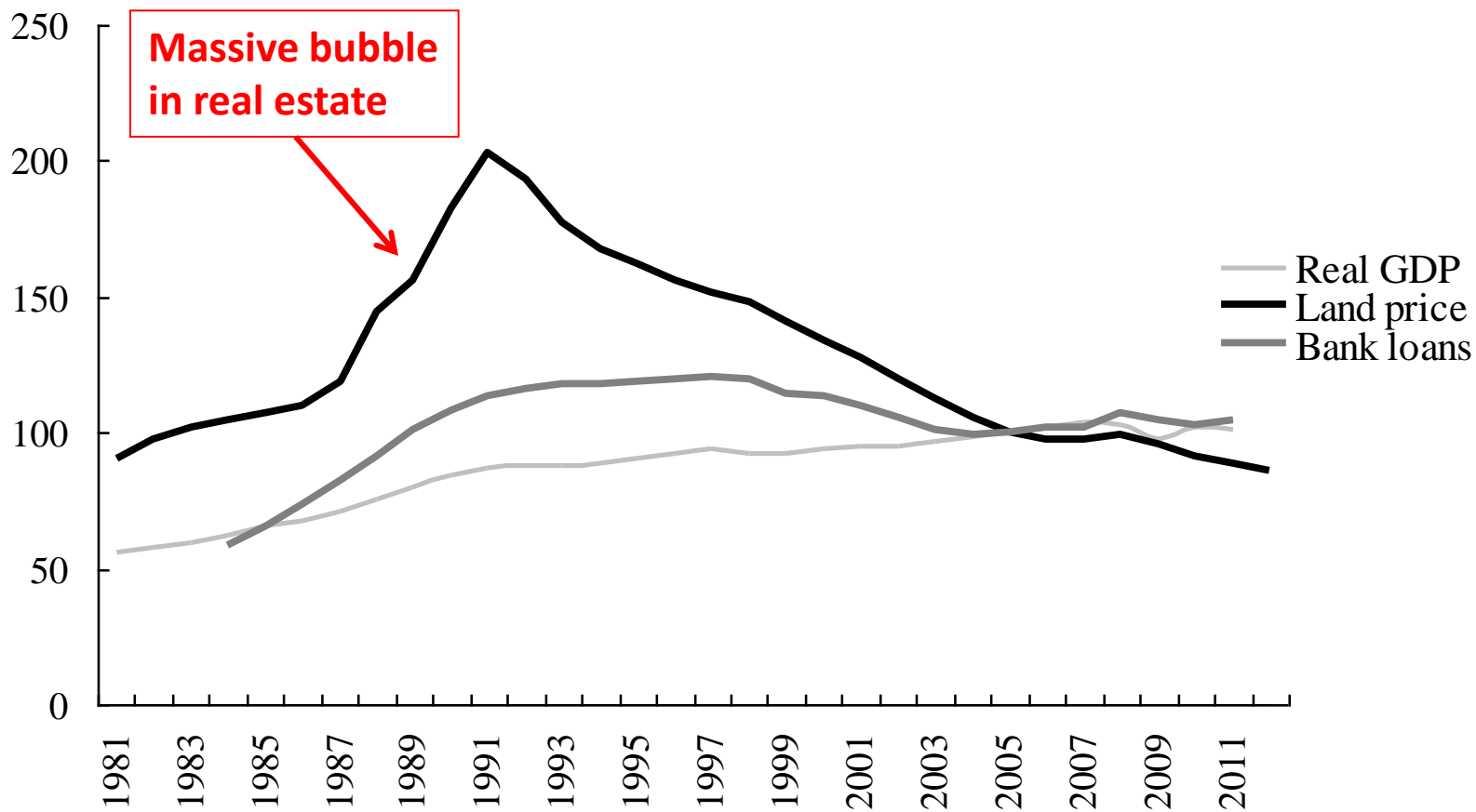
### Real GDP, land price, and bank loans (level)

(2005=100)

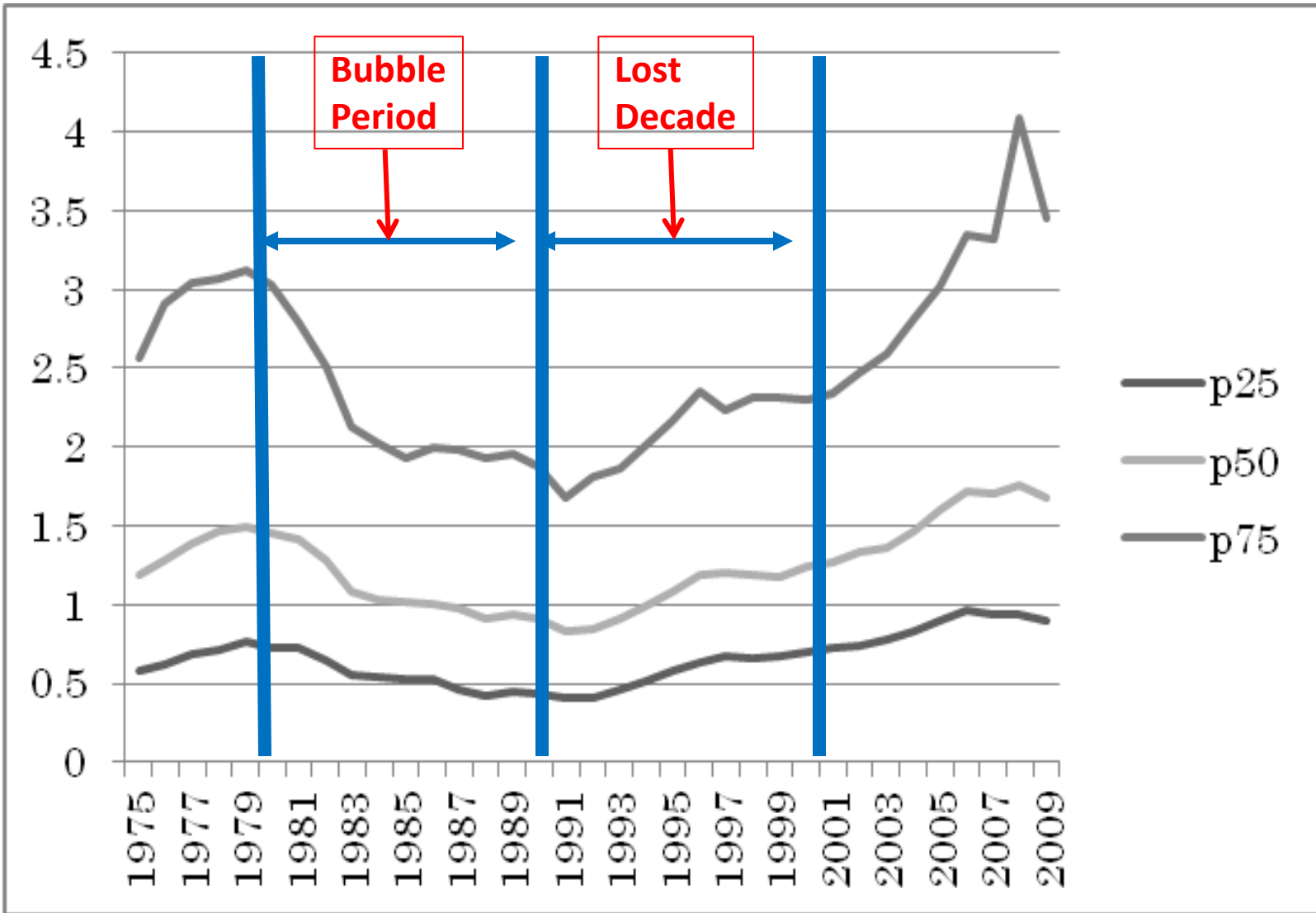


### Real GDP, land price, and bank loans (level)

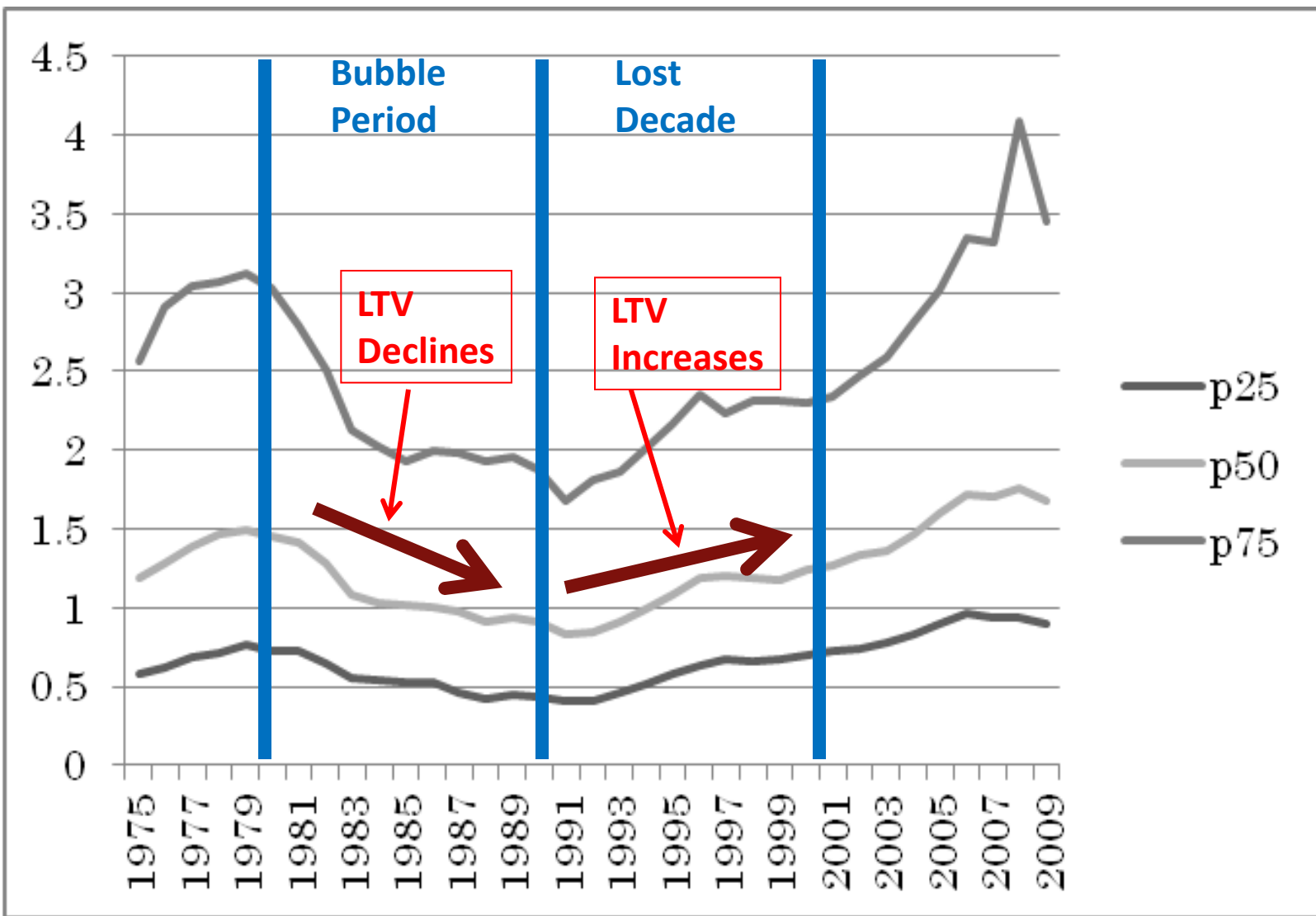
(2005=100)



LTV



LTV



# **Additional Findings on Japanese SME LTVs**

- **Robust in multivariate analysis to controlling for loan, borrower and lender characteristics.**
- **High LTV loans performed no worse ex post.**
- **However, for some marginal lenders results are reversed**

**Conclusion: simple LTV cap may not work**

# Thanks for Your Time!

**Many questions remain:**

**We need more research!!!**