Long Term Crashes
or
Structural crises

- **Bad luck vs Financial design**
- **Reform**
- **Firms**
- **Securities**
- **Consumers**

Structural Crises

- Finance positions are in effect bets
- But unlike gambling they are not zero or negative sum
- Even then sometimes you loose because
  - Nature moved an unexpected direction
  - financial system design problems
  - Or most often both
- Because humans learn failure to redesign the problem means the next crisis will be worse.

Problems

- The goal is to examine a sequence of problems revealed by 2008 and then ask two questions
- Where they new?
- What have we done about them?

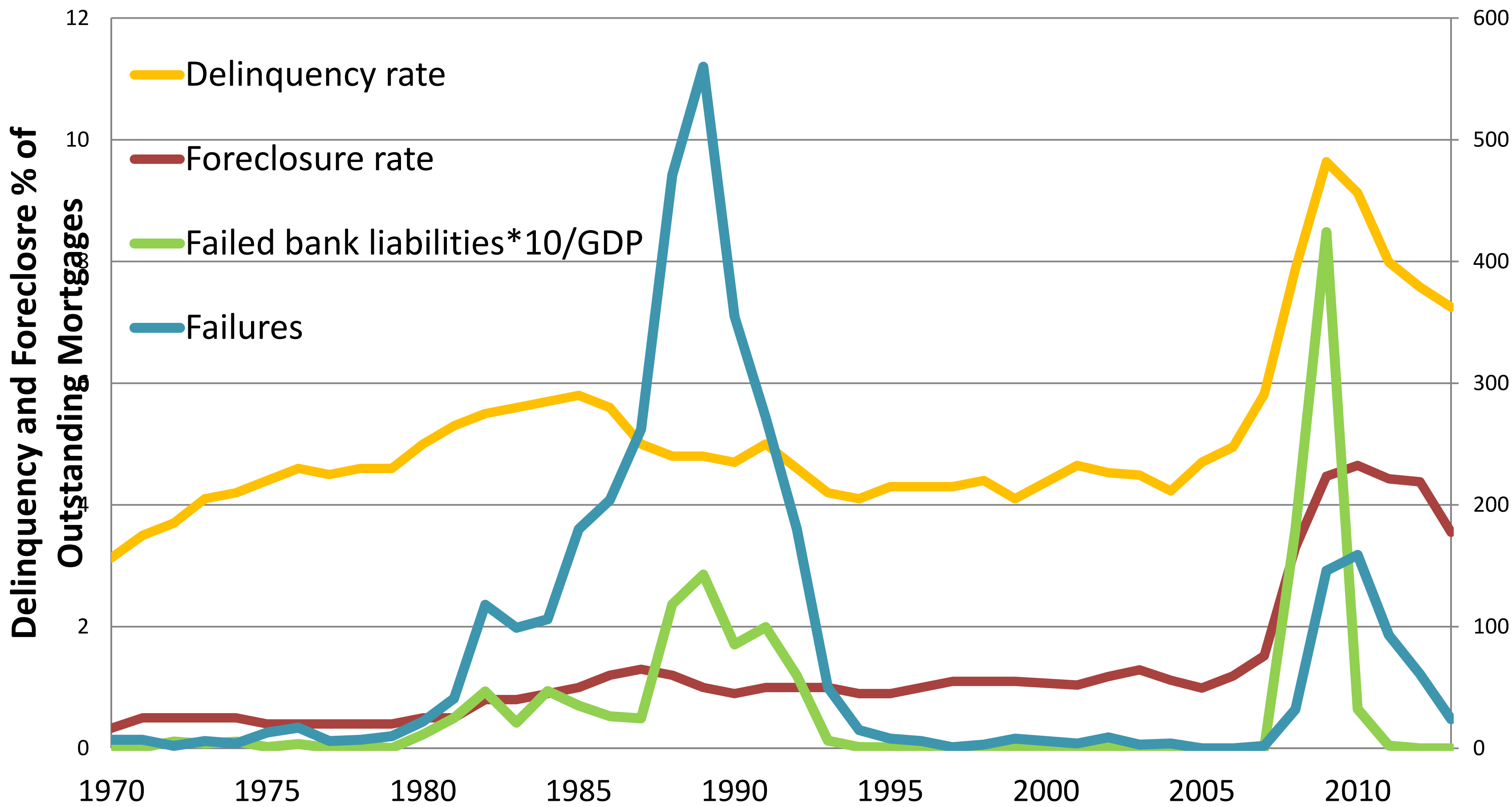
Problems

- On the intermediaries
  - To big to fail.
    - Big banks can't be closed so we have to bail out, they know it and decide their risk position accordingly
  - Counterparty risk
    - big banks run investment, commercial, and mortgage banking together.
  - Skin in the game
    - Many issuers do not hold any of the securities they create, they have no long term interest in the quality of the securities
  - Continuity of contract
    - CDOs are very complicated to unwind and who gets to make foreclosure decisions unclear
- In the mortgage market
  - Size of different risk pools
  - Loan to value regulation
- Consumer protection
  - Consumers have poor finance education so when face with complex menus of choices make bad decisions

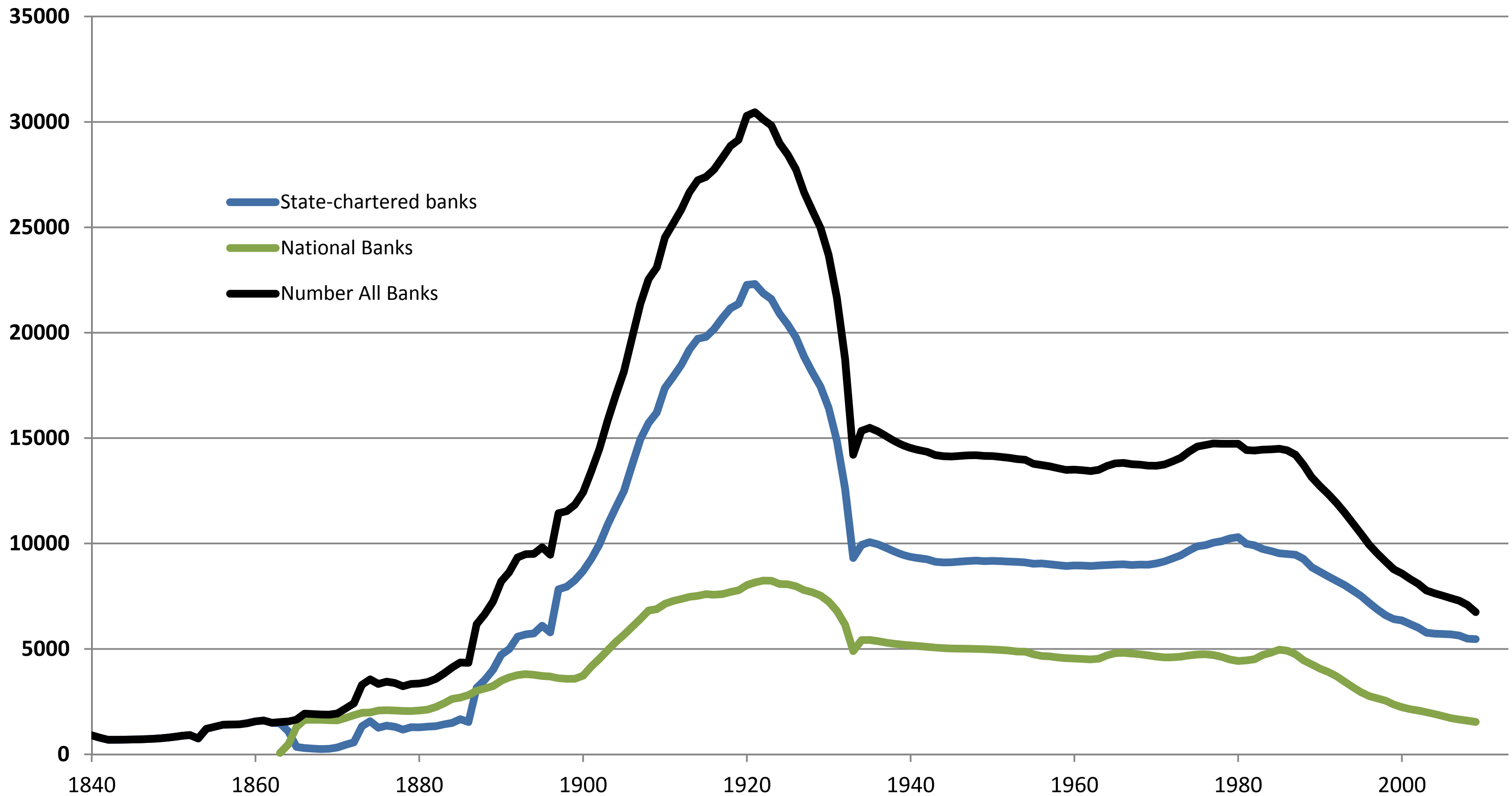
Intermediaries

- Received nearly all (>90%) off all bail out money
- Primary beneficiaries of low interest policies
  - And many executives at failed institutions (Merrill-Lynch, AIG, Countrywide..) receive generous bonuses in the year of failure or walked away with millions
  - Then other intermediaries made billions on the crisis itself
    - John Paulson (big short on housing defaults)
    - David Tepper (big long on banks early in 2009)

Too big to Fail



To big to fail



To big too fail

- Top 20 financial institutions now control a very large amount of the total assets of the financial system
  - 14 trillion out of a total of about 16 trillion depending on definitions.
  - In a way the problem is simple keep them sound.
- The top 4 banks (JPMChase, BofA, Citi, Wells Fargo)
  - on average have 2 trillion dollars in assets each as a whole about half the total.
  - The failure of any one of those will drive the whole system down
- The 20th financial institution has about 150 billion dollars in assets.
  - They are almost irrelevant.

Too big to fail

- The very big take on additional risk because they have an implicit guarantee.
- Notice how different this is from the world of either the 1930s or even the 1970s
- Solutions?
  - Break them up?
  - Make them boring?
- Or is the problem that the financial system has gotten very big?

Counterparty risk

- Banks are not just big, they are also very diversified
  - run investment, commercial, and mortgage banking together.
  - If one of the top (or even medium) banks needs insurance, it can only get it (from a quantitative pt of view) from another top bank.
  - But that means that you would like to know what else they are insuring
- This is new (at least in the U.S. because we have traditionally been specialized banks)

Counterparty risk

- Specialization is the outcome of regulation
- Until the 1980s banks do not do mortgages
- What about investment and commercial banking? Formally these are separated by Glass-Steagall in 1933.
- Then repealed in 1999 after regulators had allowed banks (led by Citybank) to essentially ignore the legislation. Banks become full service or <u>universal</u>
- Two major driver
  - Globalization, the US is the only country that splits investment banking and commercial banking
  - A belief that are economies of scope in risk management
    - Note that this means that bigger banks are less likely to fail

Counter Party risk

- In effect, however, (see the Rajan piece on the reading list), the rise of full service banks has had two opposite effects (the good times bad times pb).
- It has been beneficial because crises less likely
- But when problems arise they are really bad because the banks are rather similar so their cross-insurance system of buying and selling CDS does not work very well
- Solutions?
  - Return to Glass-Steagall
  - Some other form of more specific risk management?
    - The Volker rule (commercial banks cannot use deposits and other medium-term liabilities to engage in proprietary trading) aim is to limit speculative position taking
  - Two limits (1) global competitions NY wants to remain the dominant financial center and to do so banks must be full service (2) competition from the shadow banking system.

Skin in the Game

- One of the egregious financial practices of both the dot-com and housing bubbles was the issuing of ‘toxic’ securities
- In the dot-com bubble
  – internet companies that the underwriters had decided would never show a profit.
- In the housing bubble
  – assembling batches of mortgages that met the requisite standard for securitization
  – Assembling CDOs that were “designed to fail badly’ if the housing market crashed.

Skin in the game

- An old problem
- Solution? if the intermediaries had to keep a fraction of the assets (keep some skin in the game), these problems of moral hazard would be reduced.
- Will work to limit the rise of mortgage originators and other low capital firms.
- It will not stop many other problems
  - much of the problem at investment banks is that they kept too much skin in the game (Bear-Stearn).
  - It resolve problems of moral hazard, not problems of over confidence.

Continuity of Contract

- Recall the chain
- Mortgages => Mortgage backed securities => Collateralized debt obligations.
- Suppose x% of the mortgages in a mortgage pool has fallen 90 days delinquent who has authority to decide on initiating foreclosure proceedings.
  - Conflict between most junior and next most junior tranches (and thus between the owners of MBS tranches and owners of CDOs).
  - Those tranches now bearing losses want forbearance not foreclosure (because they want to avoid loosing future interest payments and some capital due to foreclosure)
  - The holders of the next most junior tranches really want foreclosure because that makes it more likely that they will get their money. The more senior tranches also want foreclosure but do not care so much.
  - Who decides?

Continuity of contract

- Again an old problem
  - Examples of this in the 1720s when individuals who had made large futures contracts laid off (sold) parts of those contracts to third and fourth parties. When something went wrong its not clear who had authority to decide how the original contract should be executed.
- Solutions:
  - Let the mortgage servicer decide
  - Write a rule in the MBS that gives this right to specific tranches.
  - Have some regulation that solves these problems

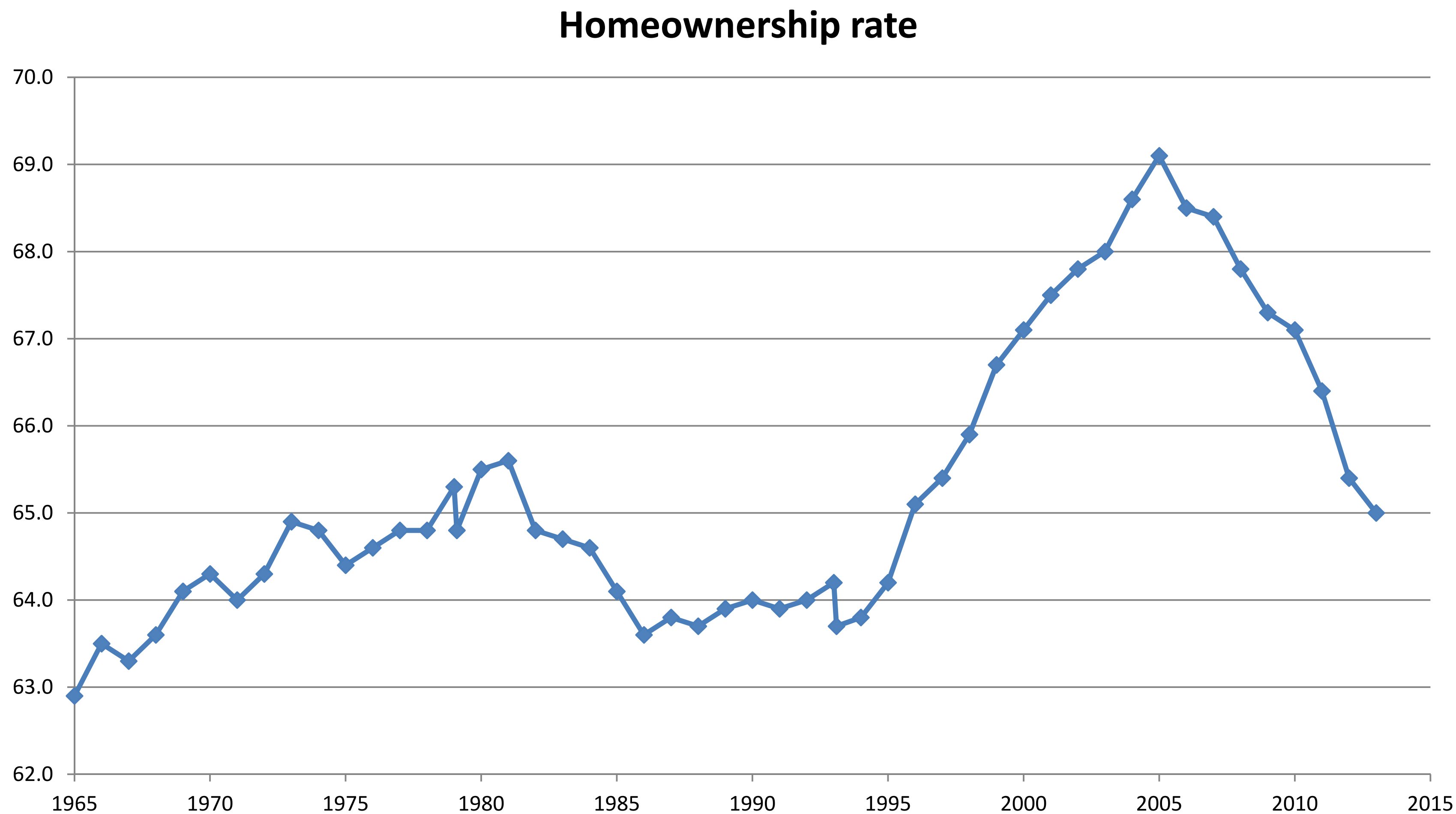
Reforming the institutions

- Because of competition
  - From other financial centers and from the shadow bank system
  - Banks will remain big and diversified.
  - They will also be able to engineer what ever risk structure they want because they get to choose where they do things
    - In particular when it comes to derivatives much of the action is in London
      - See Lehman Brothers, JPM Morgan Chase or MF-Global
- So regulation of firms is not likely to work

Fixing the market

- Mortgages
- Two issues, risk and securitization

1) Risk
   - Choice is on the level of LTV.
   - Its pretty clear that no regulation is a bad idea because it leads to lending standards cycles that increase the intensity of crises
   - Putting LTV constraints is both cheap and easy to do in the information age
   - Problem is that we may have to revise our goals on the home ownership rate

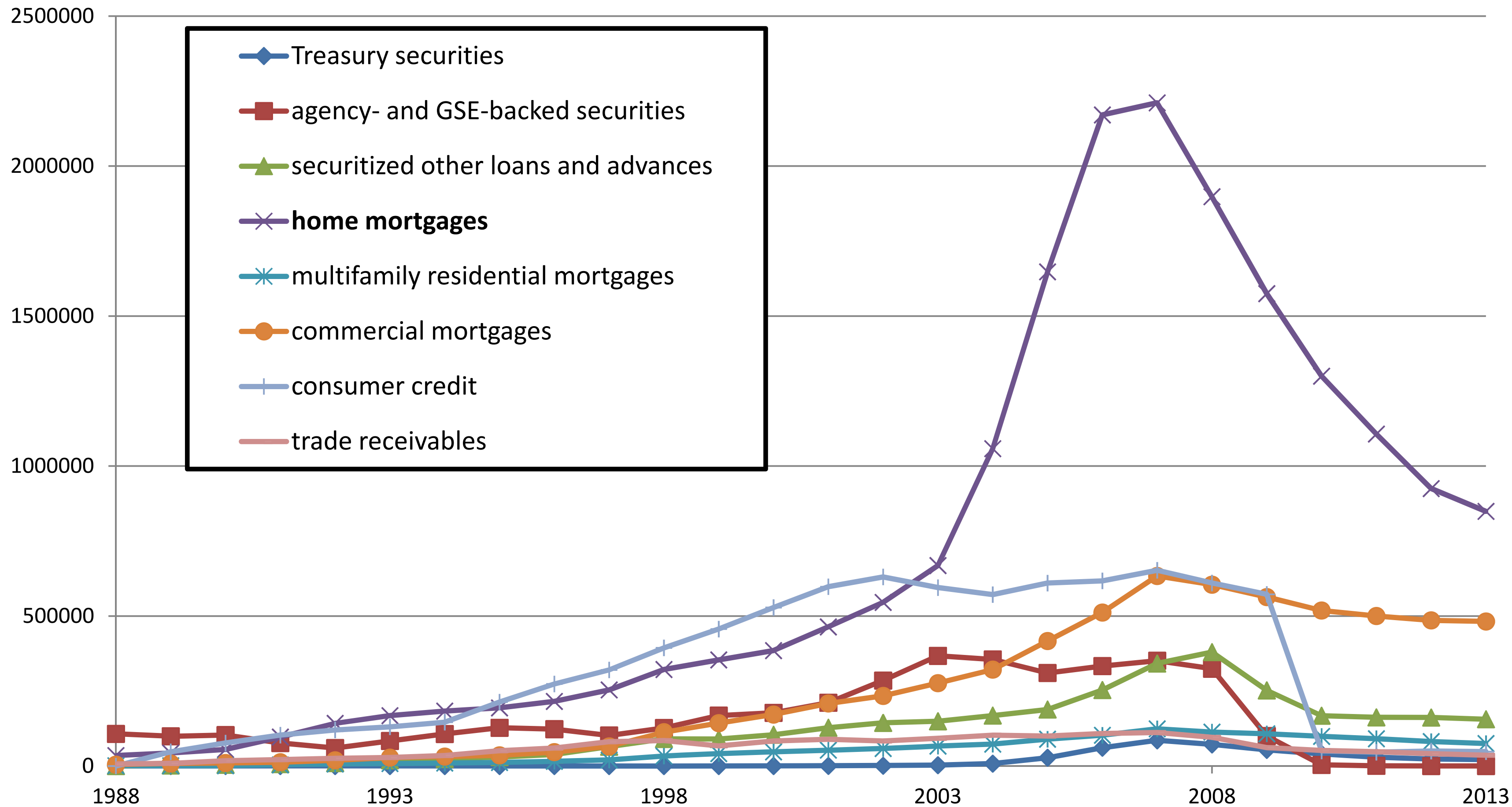


Current rate is lower than at beginning of boom (2003) and still falling
For those people who have fallen out of homeownership the cost of the "experiment" was larger so putting an LTV constraint might not be a bad idea

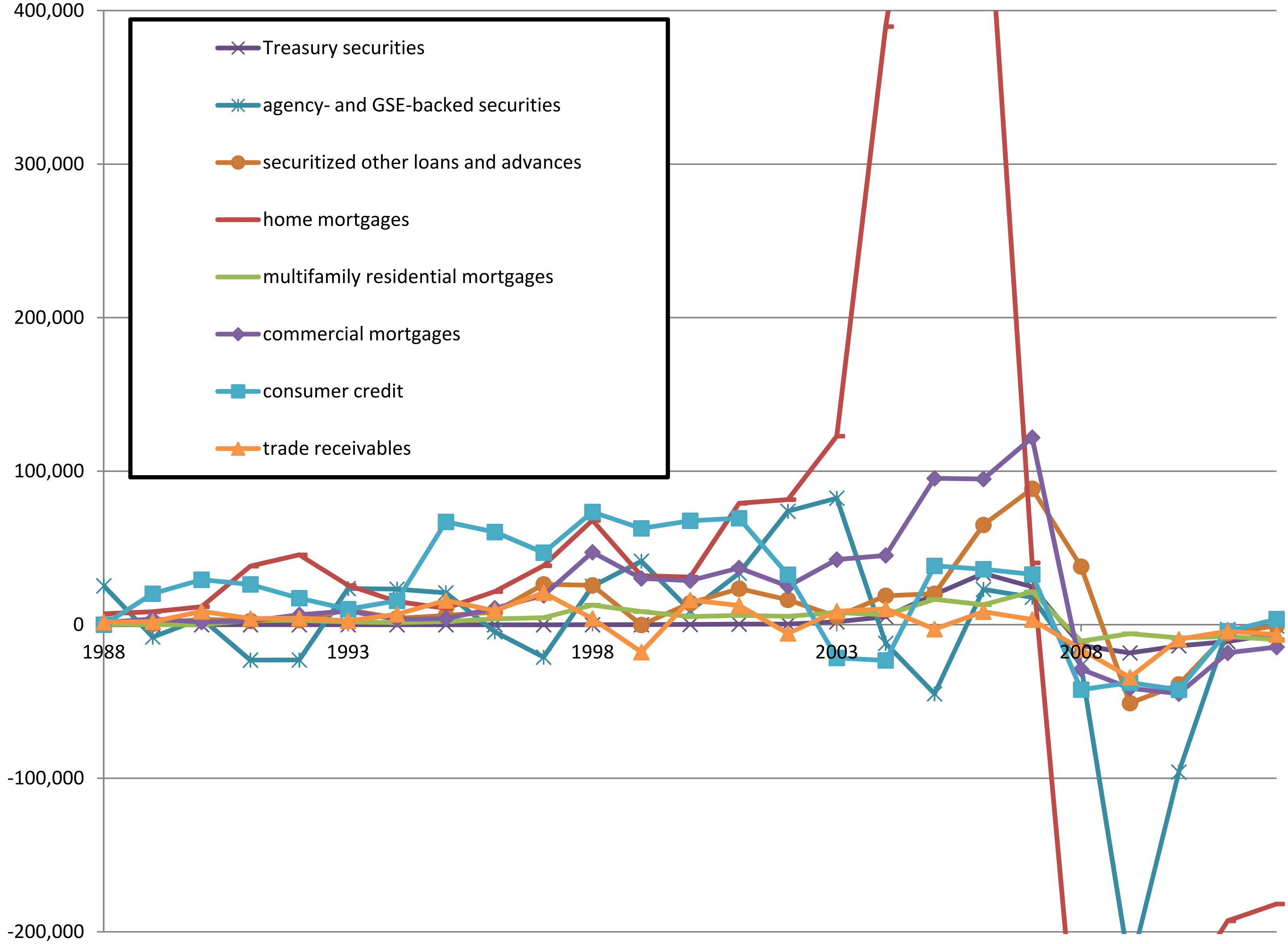
Securitization

- Issue here is MBS vs CDO and number of tranches
- MBS are probably useful, in particular if we want to reduce our dependence on GSEs as underwriters of the mortgage market,
- It is not clear that a second level of securitization really helps (in particular if we have the very large banks)
- Limiting the number of tranches will likely raise liquidity
- One might also want to force issuers to cure the mortgages hold them for at least three years....then securitize them

The stock of securitized debt



Flow show collapse



The consumer

- Can act on the broad contours of the market
- But ultimately want to act on the consumer
- Problem:
  - Consumers have poor finance education so when face with complex menus of choices make bad decisions
- Evidence on this involves people's
  - very poor retirement planning, (don't save enough)
  - very poor balancing of risk and return (undiversified portfolios)
  - Excessive dependence on managed investments
  - willingness to enter into very expensive credit arrangements (payday loans)

Financial education

- Obviously worse for the poor than the rich
  - So the social cost is high (because the poorer parts of the population are those that would get the most gain from a bit higher return)
- Simple things make big difference (nudge factor)
  - Share of people who save in 401K plans directly related to whether you have to either opt in or opt out.
  - That is if the employer sets the default that you opt in then a much larger fraction of people save

Implication for mortgages

- Radical proposal
  - Phase out the interest deduction on income taxes (stop subsidizing home ownership).
- Reasonable proposal
  - Limit the menu
    - We are already moving away from this
    - Not because we are trying to expand credit but because people are trying to fine tune their tax avoidance strategy.
  - Eliminate all teaser rates and other options in contracts. Notice that individuals are rational then there is no reason to do so (so efficient market hypothesis may not be such a good idea)
- Make it clear that homeownership implies taking an equity position.
  - That means bearing risk, and if you are poor you may not want to bear risk.

Consumer protection

- We have created a consumer protection bureau
- But we have made essentially no headway in dealing with either
  - Scope of securities
  - Mortgages
  - consumer education

Conclusion

- Financial crises are about failure to manage risk
  - They occur because unlikely events occur
  - They also occur because we fail to manage the markets in which we try to deal with risk
  - As economies get more sophisticated the amount of wealth rises which makes these more costly.
  - So its useful to think about financial architecture
- Finance is about managing risk
  - Successfully doing so as an investor, as an entrepreneur, or as a financial specialist can't make you rich, but it can avoid making you poor.
  - If I have set you on your way in this matter, this class is a success. I will ask you to be the judge of this in a year or two.