18 Week 8 Financial Crisis Notes

1. “A key question: how the original loss of several hundred billion dollars in the mortgage market was sufficient to trigger such an extraordinary series of worldwide financial and economic consequences.” Answer: A run, or panic, in the “shadow baking system” consisting of repo and other overnight financing, brokerage accounts, and derivatives counterparties. The source of the losses didn’t really matter. It’s the fragility of the financial structures that held the losses. Compare to the dot-com bust. Anyway, that’s the main lesson I take away.

2. (Duffie p. 51) Background: how an old-fashioned bank run works.

(a) The keys: 1) Illiquid assets (mortgages), limited cash reserves, 2) liabilities (demand deposits) that promise a fixed value, 3) first-come first serve payment. 4) my redemption makes the institution worse off, raising your incentive to run. The last in line will not get full value, so if everyone else runs, you should run too. Bank deposits are a “systemic contract,” they leave an “externality”, a “multiple equilibrium.”

(b) Is this a problem? If the 5) liquidation of assets is socially inefficient, the run is undesirable. In models (Diamond and Dybvig), the bank must liquidate real projects, i.e. having built the basement stop building the house. This is bad, and a reason for policy intervention. If we’re just selling financial assets however, the case is much weaker. You have to argue that liquidation “depresses prices” and this price depression is socially inefficient, not just a transfer. A run per se is not a bad outcome.

(c) Runs are not a policy problem if it’s only a transfer. People forget this all the time. We need to abandon real projects, or your fire sale is my buying opportunity. Bankruptcy per se is not a problem: There is no crater. Debt becomes equity, keeps firm running if it makes sense to do so. You need some social (not just transfers) “costs” People forget this too!

(d) Runs are a problem if you get an overall financial crisis. (Not in Duffie, but in Gorton). It doesn’t matter if you’re all alone (MF Global.) When your bankruptcy makes people worry about the other bank (Gorton, E. Coli), leading to “systemic insolvency” (really illiquidity) then it’s potentially a problem. And only then.

(e) Our challenge: understand how each of brokerage, derivatives, and overnight debt have an incentive to “run,” and how those runs precipitate firm demise. Then, how to fix these features! See Duffie. For now, this is what happened.

3. Bailouts/bankruptcy/equity sales/debt overhang

(a) Why not just raise new equity? The debt overhang problem gets in the way. Once a firm has taken a lot of losses, it’s clear that if broken up debt will only get, say, 60 cents on the dollar. Equity is still not worthless, as it’s an option on things getting better. Now, if you sell new equity, the first thing that happens is the value of bondholder claims get better. New equity holders don’t want to subsidize current bond holders. This is the story, anyway. It also has holes in it, and we see new equity coming in to firms after losses all the time. For this or other reasons, though, it’s often hard to sell new equity to a company right on the edge of bankruptcy, or find a suitor willing to come in.

(b) A sale is really a “recapitalization”. The FDIC/Fed hope that the merged company has enough extra value to then pay off bondholders and escape debt overhang. Plus the government chips in.
(c) Bankruptcy is just a recapitalization, avoiding debt overhang. Current equity loses everything, old debt turns into new equity worth less than the face value of that debt, and the firm can issue equity again and get going. Debt holders don’t like this of course, they’d rather be bailed out. The newspapers and policy wonks always think banks can only be recapitalized from taxpayer money.

(d) This motivates some policy proposals. Forms of convertible debt that would allow a debt/equity conversion without bankruptcy, for example. However, it is the right of bondholders to seize assets that makes bonds worthwhile, so it’s not a panacea.

(e) Motivated at least by this story, the Fed provided credit guarantees, i.e. a subsidy and bailout to the deal. Thus, bondholders made money at the expense of taxpayers, and then new equity came in

4. While we’re at it “financial crises are always and everywhere a result of short-term debt.” (Diamond)

(a) Consider the example of a project, coming due in 10 years, financed by 10 year zero vs. financed by rolling over debt.

(b) Government (Greece) crises are all at the moment of roll over.

(c) “Illiquidity” vs. “insolvency” (meaning, here, the present value is really less than zero and it won’t be paid at maturity) is not so easy to tell

(d) Runs as “multiple equilibrium”

(e) Leading to my question – why is short term funding so vital? More later

5. Duffie p. 51, “Standard policy tools” a) Deposit insurance – removes incentive to run. b) “Regulatory supervision, risk based capital,” Deals with moral hazard of deposit insurance c) “Regulatory resolution mechanism” this means FDIC. Don’t get the impression that this is all working so great!

18.1 Duffie failure mechanics

This is a brilliant paper for outlining why short term repo, derivatives, and brokerage accounts are “run-prone” and hence “systemically dangerous” contracts. It’s also useful as investors need to understand the operation and risks of these markets. Another big picture: it’s all about cash in the end.

• Definitions of words / how stuff works. Rules for today: We’ll stop and define everything and not pretend everyone knows all this gobbledygook.

1. Bank Run
2. Debt overhang
3. Repurchase agreement (repo)
5. Credit Default Swaps
6. ‘Off Balance Sheet Financing” “Special Purpose Entity”
7. Repurchase agreement
8. “Re-Hypothecation”
9. Keep adding to this list.....

- p. 51 Traditional bank run.
- p. 51 “Standard policy tools”
- p. 52 Alpha bank = Bear Stearns / Lehman story. Fundamentally, bankruptcy comes when you run out of cash, so he’s following how events drain cash. (And we have to think why won’t/can’t the company get more cash)

1. Lose money.
3. Bailing out hedge funds/clients (more later)!
5. Derivatives counterparties leave, stop providing cash collateral.
6. Short term creditors don’t roll over debt. (Why not? It’s collateralized? Coming soon)
7. No more daylight overdrafts. Default.

- What dealer banks do

1. p. 54-55
2. p. 55 “proprietary trading which can be aided in part by the ability to observe flows..” (That’s close to “front running”) Bear and Lehman were brought down by speculative losses. As I see it, merging speculative trading with systemically-dangerous liabilities (brokerage, derivatives, short term debt) is a key problem. We don’t let banks fund trips to Las Vegas with demand deposits. “Volker rule”
3. p. 55 bottom/ p. 56 top. Repos. Understand how they work here
4. 56 bottom. OTC derivatives. Don’t confuse notional with exposure
5. p. 57 top. Note we can’t all lose money on derivatives! You have to appeal to frictions. Which are real.
6. p. 57 “Master Swap Agreement” allows netting across types (CDS with interest rate swaps). (This is a big disadvantage of exchange-traded)
7. p. 57, bottom “the range of acceptable collateral was narrowed.” This is Gorton’s haircuts, coming later.
8. p. 58 Credit Default Swaps. You pay (say) $5 for a year, and then if a bond defaults the counterparty buys it from you at face value (or cash settlement). You get collateral based on the price of the bond. AIG failed because it had to post more collateral, based on its own credit downgrade. Many back-to-back CDS – the dealer will lay off risk, and people don’t sell CDS, they just write another one, e.g. sell a new CDS back to the bank. (“compression trades” get rid of this)
9. p. 58 “Prime broker services”
10. p. 59 “asset management divisions” and “internal hedge funds” “voluntary support” as we saw with Bear Stearns. This is very interesting. It helps explain internal hedge funds at all (where is “the principles coinvest” if they are on a bank salary!)

11. p. 59 ‘Off Balance Sheet Financing’ “Special Purpose Entity” On the bottom of p. 59, how these structures were basically set up to avoid capital requirements. Top of p. 60 how the credit risk is still there.

• Failure mechanisms (p. 60) For each security a) Why do investors run? b) When they run, why does this make the bank worse off, hence inducing additional runs? Counterexample: My car is in the shop when the dealer goes under. I calmly go get it Monday morning. Why are brokerage accounts not like this?

1. p. 61. Repos (overnight).
   (a) Repo means huge leverage for these banks, over 30, and much of that with overnight debt!
   (b) Why do they run? It sounds simple, “they default, you get the collateral.” A: They may have to sell collateral fast. Also there may be some legal hassles. (It turns out UK bankruptcy did not recognize repo). Why not just lend to someone else? (Again, a general picture. People have thought about the run danger of these contracts, and tried to do something about it. The idea of repo is you have collateral, so you don’t have a reason to run. Alas, it’s not so simple.
   (c) p. 61 With no repos, no Fed or other lender, must sell assets. “Fire sale” (At least bid/ask). Then you mark down existing assets “death spiral.” (Q: where are those fundamental investors?)
   (d) p. 61 Rising haircuts makes it much worse. If you had been putting in $2, borrowing $98 at repo to fund $100, then haircuts go up to 10%, now you need $8 extra from other sources – not collateralized! (More with Gorton).
   (e) p. 62-63. Hey, people had thought of this! Other sources of last-minute cash.
   (f) 31 Intraday overdraft, discount window, TALF, other ways used to mitigate the liquidity problems.

2. 63. Prime brokerage
   (a) The car puzzle. Why should you care if your broker goes under? A: You should care a lot!
   (b) UK cash is “equivalent to uninsured deposits” i.e. is a pure unsecured loan to the bank. A promise.
   (c) Bottom: The single pool
   (d) 64 “Re-Hypothecation” In the UK your securities are commingled. In the US less so, but they can still use your securities as collateral for their own borrowing to finance their own activities. For example, you buy $200 equities, borrow $100 margin from the dealer. The dealer can repo $140 of your assets (to get the $100 cash to lend you) so with 2% haircut, has $38 extra cash “a significant source of financing for prime broker” So when you pull out, this causes the prime broker to lose financing for his own positions. Another crucial part of a “run,” that when you pull out the bank is worse off.

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“Failure to run, as Lehman’s London-based clients learned, could leave a client unable to claim ownership of assets that had not been segregated in the client’s account and had been re-hypothecated to third parties.” It turns out even though they’re your stocks, it’s hard to get them out of the brokerage in bankruptcy.

(e) 64. In the US there is also a problem if you don’t run. If you bought on margin and the dealer can’t repo any more, it can’t use your securities to borrow even the $100 from someone else. The customer still wants loan, but dealer can’t get the money.

(f) 65 In the future, “Hedge funds may place more assets with custodian banks rather than traditional prime brokers.” Why do people put up with all this? Banks (Lehman) gave them very nice incentives to move prime brokerage to London where they could make more money. Prime brokers give you better terms than custodians. Everyone wants risk until it’s too late. But the big point: all of this can be fixed!

3. 65 Derivatives counterparties.

(a) Some mechanisms for lowering exposure, which get cash out of the dealer. Borrow from the dealer, ask new derivatives contracts in which they pay you (ask to write an option), restrike options at the money, request novation. Again, even with collateral, it’s a pain when your dealer fails. Go elsewhere.

(b) p. 66 If the dealer’s credit rating is downgraded, it has to post more collateral, again draining cash. This is the central story of AIG.

(c) 66-67 Replacement of derivatives positions. This is important. If a dealer fails, it has to replace derivatives positions with new derivatives from other counterparties. (This comes out of other assets that otherwise flow to bondholders.) Thus, it pays the bid/ask spread on its entire book. It does not get to net. (But, this lowers the incentive for derivatives counterparties to run! There is a reason this feature is here!) However, it means a big post-default cash drain, so others have even greater incentives to run.

4. 67 loss of cash settlement privileges

(a) Daylight overdraft explained. This is the end of the line

5. BOTTOM LINE: Dealer banks turn out to have run-prone contracts

(a) Overnight debt is functionally the same as a bank deposit. By refusing to renew, you almost always have the option to leave at the first sign of trouble and avoid losses in bankruptcy. Why run? People understand the danger, so short term debt gets paid early in bankruptcy. But not early enough; you earn so little each day that it’s better to pull out.

(b) Brokerage: “They’re my stocks”. It turns out they’re not, so you have an incentive to run. Second, when you withdraw that hurts the firm a lot, draining cash from it and forcing sales of illiquid assets. Thus, it’s run-prone too.

(c) Derivatives: Obviously, you’d want to get out of a derivative contract if you see trouble. People have thought about this too, and that’s why derivatives contracts “exempt from bankruptcy” But not quite, so you still have an incentive to run, and your run causes problems for the bank.

(d) In each case, there is an incentive to run; there is an externality: if you run, the bank is in deeper trouble, so I run. In each case, there are structures in place to try to address runs: Collateral, stay in bankruptcy, etc. But they are not quite good enough. (Is there also “socially inefficient liquidation?” Not so clear.)
• Can bankruptcy be fixed? Every time we get past generalities, “they should have saved Lehman” to specifics of “what went wrong,” you say “I can fix that! Money market funds; rights of derivatives counterparties, segregation of assets, etc. Why are we not fixing bankruptcy law, segregating accounts, making these contracts less prone to runs?

18.2 Gorton and Metrick Haircuts

• Note. This is horribly written, but there are some great ideas in here. (Also in Run on Repo)

1. “Information insensitive” securities. This is big and important. To Gorton/Metrick, the point of Repo, AAA tranches, and AAA corporate is to create “information insensitive” securities, that you can invest in without doing much research. Unlike, say common stock or low grade debt. “Ignorance is bliss”: “information insensitive” securities are also “liquid” because people don’t fear asymmetric information (remember the story that asymmetric information is behind the bid ask spread and the no-trade theorem). Not everyone agrees with this. Diamond and Rajan have a series of important papers arguing that short-term debt is crucial (they want to explain why there is so much of it), and acts as a discipline device. The threat to run keeps managers honest. However, this means that in their view, short-term repo investors spend all their time monitoring management. It’s diametrically opposed to the “money” view here.

2. Aggregate runs are the dangerous ones. Then the “whole system becomes insolvent.” A reason to dislike runs even without individual “socially inefficient liquidation”

3. “Insolvent” here means lack of cash, not the present value of projects is too low.

4. Haircuts and “velocity” of collateral;

5. the “E coli” analogy to systemic runs.

• Fact: The repo market fell apart, forcing many investment banks and hedge funds to deleverage. Someone has to hold assets, so that means they must be held directly by investors. That seems to involve a big price discount. “Haircuts” increased.

• p. 508 Demand deposits: “A security that is easily accepted without needing to do extensive and costly due diligence on the bank” But this occasionally dries up in runs. “Loss of confidence.” The “money” part here is overdone – it’s not really about transactions. It’s about very liquid assets that are “information-insensitive”

• 508 top left. A very nice connection between liquidity and asymmetric information. Markets are illiquid when the other guy suspects you know something he doesn’t. An “information-insensitive” security is one where you don’t need a lot of due diligence – money, insured, bank accounts.

• p. 598 bottom right. US history. This is a nice explanation of bank runs and why they are “systemic.” (Socially inefficient liquidation). When some banks may be in danger, you suddenly need to worry about counterparty risk in deposits. They lose their “information insensitivity,” and thus their “liquidity” and ability to function as money. A buyer wants to know which bank your check is drawn on. The “E coli” analogy. Note the problem is not enough cash in the whole market. (In the recent crisis the Fed bought all sorts of stuff, i.e. radically increased cash supply in exchange for risky assets. This couldn’t happen in 19th century)
• p. 317 Left. Clearinghouses. Banks invented clearing houses to solve this problem. This is an example of how regulation makes the system more fragile. Clearing houses disappeared with Fed lender of last resort and deposit insurance. If the fire department is too good, people don’t buy fire extinguishers.

• p. 317 right. A very nice analogy between repo and demand deposits. Repo is a “kind of money” for firms “which need a way to safely store cash and earn some interest” Collateral and haircut mean the lender usually doesn’t have to worry about monitoring, counterparty risk, etc. Repo is “information insensitive”.

• This paper does not explain usefulness of repo to borrowers. That’s maybe too obvious – you can fund a huge position with almost no equity by repoing the securities. But.. look at the magic. You’re holding generic “money” Yet you’re investing in the trading book of an investment bank! The risk is somewhere.

• p. 318 top. Rehypothecation and “velocity”. The same collateral gets used over and over again. The haircut is the reserve requirement governing “velocity”

• 319, top left. A nice idea on subprime mortgages. By making them short term with a sharp reset, you force borrowers to refinance. The house price goes up, so they now have equity which they didn’t have before. Except if they refinance to another low equity loan or the house price goes down....

• repo -> tranches -> MBS High quality corporate bonds and AAA tranches are “information insensitive.” Most of the time. Investment grade bonds move with the interest rate rather than stock news because the chance of default is so low. Then it’s not worth collecting information about default probability and they become liquid. The point of Tranches is to create similar “information insensitive” securities.

• Why are there haircuts, and when do they get bigger? You may have to take the collateral and sell it in “illiquid” market (facing asymmetric information). Also, it can take a few days to get and sell the collateral. Thus you demand more when markets are illiquid, i.e. when MBS have become more “information sensitive”

• Figure 2 Look at the hair cuts! This forces a massive deleveraging! When investment banks and hedge funds can’t repo any more they have to sell securities, which have to be held directly by people. (Or they have to raise more equity which takes time and is hard to do in a crash. Always look for the other way out when reading these stories of forced sales! Every market imperfection is a business opportunity!) The system as a whole needs much more cash.

• p.513 bottom right, an important point: Haircuts are not just “more risk” – that’s just a price decline. Haircuts are like bid-ask spreads they reflect fear that someone else knows something you don’t know.

• p. 514. how much deleveraging the haircuts imply. About $4 trillion. This is cash the system doesn’t have. (Fed buying makes a lot of sense here.)

• 514 Figure 3. Corporate bond haircuts did not increase. Fear of anything labeled “structured.”
18.3 Gorton and Metrick Securitized Banking and the Run on Repo

This paper has good stories, but the main results in the regressions are pretty disappointing. I assign it mostly for the stories.

The main result, visible in graphs, is that changes in security yield spreads are correlated with the Libor/OIS spread, and not the ABX (MBS yield spread.) Thus “contagion” seems to come through worries about banks and implicitly repo difficulty, not through prices of mortgage securities spilling over to prices of other securities. I actually find the regressions unpersuasive. The prices of other assets stay depressed long after Libor/OIS recovers. Thus it looks to me like a generic rise in the default risk premium. (There are still “fundamental investors”)

A second regression puts haircuts on the left, but this is a silly regression since there are few weekly changes in haircuts, and there are no results really either.

p. 2-3 Traditional vs securitized banking. Equity is missing in “traditional!” The figures aren’t very good, skip them.

An analogy between government guarantee and repo haircuts, which seems strained. However, there is an important point: repo means you don’t worry about credit quality, no monitoring. Repo is supposed to make it an “information-insensitive” security

p. 4. Figure 4, repo-haircut index, huge during the crisis.

p. 7 ff Institutional background: Subprime market. A short version of a nice insight – the teaser rate with balloon makes it a 2 year product with forced refi. If prices go up, then refi in to a traditional mortgage with down payment. JC question. What if prices go down? What stops them from refinancing and taking out cash?

p. 9 “Opacity helps liquidity.” This is part of the “information-insensitive” deal.

p. 10 Repo market; Repo in bankruptcy

>>> p. 15-16 Libor/OIS explained. This is new to this paper and worth understanding. OIS: the fixed rate to receive average of federal funds rates. But it has little credit risk like all swaps. The paper describes LIBOR/OIS arbitrage

p. 17 and Figure 8, ABX rises slowly, LIB-OIS jumps with bank troubles.

p. 17 and Table 1 Spreads in many different timeperiods

p. 19. Table 2. Do non-subprime assets move with subprime (abx) or with funding (lib-ois)? (In differences!) Point, it’s the latter. T3 F tests, nonsubprime move with libor-ois (JC: wwhy not subprime? because subprime on abx is like left shoes on right shoes)

>>> p. 20, Figure 9. This is the fact in figure form. They say it means that libor/ois drives other prices, not subprime ABX. I see the other assets peaking much later.

T4 wishy washy by rating category

18.4 Mitchell, Pedersen, Pulvino q&a

Comment: Summer 2007 story. Some large hedge fund has some highly levered subprime exposure. It tanks. They hit risk limits, withdrawals, need to sell something. They don’t want to sell the illiquid tanking subprime, so they dump their (so far winning) equity portfolio. All the equity hedge funds are doing the same things – value, momentum, carry trade, earnings momentum, share
issuers, etc. Thus, in this event, all the previously uncorrelated hedge fund strategies suddenly tank at once. (A “supply” shift rather than uncorrelated “demand” shift).

This sudden correlation produces massive 1-week losses at the other hedge funds. Normally, they step in and “provide liquidity” – but now they can’t either. Result: 1 week huge (6 σ? 20σ?) loss. Eventually “deep pockets” step in, and the losses revert one week later.

More generally, we hear the story that some class of intermediaries loses money, sells assets, causes “fire sales.” But why don’t others step in and buy? Your fire sale is my buying opportunity!

Apparently very similar things happened in the financial crisis. The “leveraged intermediary” story says that lots of prices were “temporarily lower” with this sort of mechanism.

This is a great paper because it documents a set of events and one market in superb detail. (Though not the crisis. I gather convertible arb got hit massively again in the crisis.) The obscurity and difficulty of trading the assets has a lot to do with the persistence of the price decline. Could this happen for equities?

This paper is about Convertible Arb hedge funds.

p. 215 first two paragraphs: Lose money, sell, nobody to buy, prices go down. Why is there nobody to buy?

215 top right, A similar story about convertible bond losses in 1998 when LTCM sold them to cover global macro losses. “Losses...forced to sell..”

A stop loss order is not a put option!

1. (216) Why do firms issue convertible bonds:

A: It’s a much faster way to essentially issue equity. The arb funds short the stock and provide the extra “share supply”

2. What was, according to MPP, the basic event that sparked 2006 decline of convertible prices?

A: 216-217, Figure 1. Redemptions by large institutional investors, unhappy with prior returns. Big question – who bought? The market can’t sell something – all we can do is change the form in which it’s held, from hedge fund to something else. This is pretty weak - basing everything on momentum-chasing hedge fund investors.

3. Correcting for the fact that lower prices mean lower values, how much did MPP’s sample of hedge funds actually sell?

A: p. 217 35-41% of holdings!

4. How big are the price declines in convertible arbitrage? What is the significance of the dips in Figure 2?

A: p. 217 2.7% doesn’t seem like a big deal, but this is arbitraged, and the funds are hugely “levered.” It translates to the -7% return for the funds. In some sense though this tells me how well the market works! Liquidate 40% of the portfolio, essentially changing the institutional holding of convertible bonds, with only 7% negative return, 2.7% price discount? 217 bottom right, Price dips occur around investor redemption notice dates.

5. Did multi-strategy funds step in and buy? If this is limited, by what?

p. 218, left. Figure 1, they step in a bit, but later. Reports: “waiting for bonds to cheapen further” Note “In response to negative returns, two large multi-strategy funds reportedly
replaced their convertible trading staffs”!!! “Moron” investors aren’t the only ones chasing one-year returns. Furthermore, the increase in Figure 1 is driven by one fund. “More than half reduced their exposure” (Maybe volatility triggers, as in the flash crash?)

6. What’s the point of Figure 3
A: 218, The same history around the Fall of LTCM. LTCM lost money on its Russian bonds, sold its convertible arbitrage. CA prices fell with “no fundamental” reason (? lots of other things fell here)

7. What happened around the 1987 crash?
A: Figure 4, p 219. Some proposed anti-merger legislation plus the crash lowers stock prices – spreads widen. During that time prop desks sell into widening spreads. p. 220 left, Warren Buffet and others do step in, and make a killing.
A: There are deep pockets, just not quite enough of them.

8. Last comment: The big puzzle here is why do investors bail out of arbitrage deals after spreads widen? If buy A, short B was a good deal before, if the spread widens, it’s a better deal. You should double up, not bail out. Mark-to-market one-period alpha measurement is horrible for arbitrage or bond traders. If you bought 3Com, short Palm, and then spreads widen so you have a MtM loss, why bail? We talked about this as one of the central parables of spread trades!

18.5 Cochrane Discount Rates comments
p. 1070. “Segemented” and “Intermediated” markets. Many crisis stories involve something like this. The banks want to sell assets in a “fire sale.” OK, why don’t we buy?

→In the end, we hold the same assets. Why do we seem to care so much about holding them through an intermediary vs. directly? Remember, we hold the intermediary equity too.

→These are stories of “limited risk-sharing ability.” One of our perfect-market assumptions is that risks are all shared equally. These stories generate price variations because a small group must bear all the risk, therefore the premium must go up.

Practical application: You’re a multi-strategy fund, shopping around for risk premiums that seem temporarily high – prices that seem temporarily low. Is this a “inefficiency?” Or better to think of it as a “temporarily elevated risk premium because a risk is narrowly held for institutional reasons?”

p. 1070 bottom, the long-only multi-strategy investor – why isn’t he buying?

p. 1071, top. The tomatoes story.

p. 1071, middle, Liquidity. Read 2nd paragraph. Liquidity is different from “limited risk-bearing ability”

p. 1073. How much “institutional finance” do we need to understand the financial crisis? Consumption in the financial crisis – note the predictions a) that the market prices “consumption risk” b) that the higher risk premium in the crisis corresponds to the consumption decline.

(BTW. Do we have to rescue the canard that “the crash proves that markets are inefficient?”

p. 1074. and Figure. Investment behaved as it should, given the behavior of stock prices.
p. 1074 bottom: Note, this is consistent with the “run” being the fundamental cause. Higher risk aversion then amplifies the initial shock. (In other work, the flight to quality is a demand for government bonds, which is deflationary)

p. 1076 All prices moving together. Notice all markets move together, even ones that are completely un “intermediated” – all of us can buy and sell. We may have all panicked, but this is not just because our hedge funds are worried about quarterly results. This is hard for behavioral or institutional theories to reconcile.

p. 1078. What about the arbitrages? Lots of 3com/palm events showed up. In each case you needed to borrow dollars to arbitrage. A: what’s the dog and what’s the tail? Notice that the arbitrages are small compared to the overall price changes.

Summary: I think there was a shock to mortgages, and the markets saw a recession and house price decline coming. This was greatly amplified by the run on the shadow banks and flight to quality. In the end a large risk premium for all assets opened up. As I see it, “macro” is still first-order, with interesting “arbitrages” as the frosting on the cake.

18.6 Comments

1. What caused the run / would the world be ok if they had just bailed out Lehman? Conventional wisdom: “Lehman caused the crash. If they had bailed out Lehman we’d be ok” Taylor/Cochrane/Zingales: the TARP speeches and short ban had a lot to do with it. Had they bailed Lehman, they would have had to let someone go. Would it have been better if it were AIG or Citi? What did markets learn from Lehman? A: That TBTF is not ironclad. The markets only stabilized when Tarp convinced them that TBTF was really in place. Of course TBTF is a terrible idea overall. Note bailing out Bear didn’t stop the crisis. Why would Lehman have been different? Evidence from John Taylor
2. My focus on runs – runs on the system, not individual banks – is most useful for what is not important. If you can fix the runs, you don’t have to stop any bank ever from losing money! It would be nice to fix the housing insanity but not vital. People can make money and lose money.

3. The current approach (See my "lessons of the financial crisis") is alas an evolving disaster. The cornerstone of the Dodd-Frank law is that the Fed will regulate every financial institution, in great and arbitrary detail. This is the “never lose money again” approach. Then there will be a “resolution authority” which supposedly will quickly close down huge banks before they get in to too much trouble, rather than fix bankruptcy. Since that is arbitrary and politicized, watch investors to run even faster if there is a hint of that happening. It’s already falling apart.