Speaker notes for Crisis presentation

Surviving the Tsunami

This will be a unique seminar…in fact, it'll be so different from what you're used to that you're better off not even thinking of it as a "seminar." When I was thinking about what to present, I realized that all our interesting research is proprietary, so a research seminar would be pretty diluted.

So I abandoned the idea of doing anything even remotely academic, and instead I'll tell stories. Think of this as more of a history seminar than an economics or finance seminar. But hopefully you'll find the time worthwhile nonetheless.

Preface

The Panic of 1857

I'd like to read one of my favorite quotes in all of economics. I came across it around the onset of the subprime crisis in mid-2007.

(read quote)

But this isn't referring to the subprime crisis of 2007. Rather it's referring to the Panic of 1857. This was a sudden downturn in the United States economy in 1857 that turned into a panic due to resulting banks failures. Eventually the panic and depression spread to Europe, South America and the Far East. The full impact did not dissipate until the American Civil War.
Everett was President of Harvard University and a US Senator.

Quote applies as well to the Tsunami of 2008 as to the Panic of 1857.

Outline

Walk through the outline. Subprime crisis becomes a credit crisis, which becomes a financial crisis…

Throughout this talk, I'll highlight lessons that I learned.

This won't literally be chronological because I'd be jumping all over the place. Instead, I'll try to give a smoother chronology by intentionally mixing up the timeline a little.

Key takeaways:

1. History lesson: An insider's perspective on what happened, with some color that you didn't read in the newspapers.
2. Who's to blame? Answer: There's more than enough blame to go around. You don't go through a crisis of this magnitude without a lot of people to blame. It's appalling to hear the administration pointing fingers in the blame game, when (as we'll see) everyone – including Washington – contributed.

(Difference between financial and economic crisis: The financial crisis was an internal technical crisis. When I went home at night, the man on the street didn't know it was happening. The economic crisis…he knows it now!)

The run-up: 1990s

One-way markets

Remember those days?

- Housing prices climbing year after year (26%)
- Equity prices climbing year after year.
- GDP climbing year after year.

Even people who were less well-off were being taken care of, with the Clinton Administration pressuring Fannie Mae to expand mortgage loans among low income people.

- (Fannie Mae is the nation's biggest underwriter of home mortgages. It doesn't lend money directly to consumers. Instead, it purchases loans that banks make on what is called the secondary market.)

Quote from reporter (Holmes):
"In moving into this new area of lending, Fannie Mae is taking on significantly more risk, which may not pose any difficulties during flush economic times. But the government-subsidized corporation may run into trouble in an economic downturn, prompting a government rescue similar to that of the savings and loan industry in the 1980's."

Those were the good times. We were all geniuses then. Everything we touched turned to gold. But in hindsight, it's now clear that we were confusing brains with a bull market, because things came off the rails pretty quickly in 2000...

The foundation: 2000-2002

Three simultaneous events; Fed's response

Three things happened:

- Stock market crash (–35%)
- Recession
- 9/11 terrorist attacks

In response to these, Fed drops discount rate from 6% to 1%.

This set the stage for two simultaneous changes in attitudes, which jointly were explosive:

- Era of easy money
- Love affair with leverage

The foundation: 2002-2006

Era of easy money

(logos on slide appear sequentially on a single mouse click)

Let me introduce you to a friend, Calvin, who's a poster child for the era of easy money. He's an entrepreneur who was living off the proceeds of a previous invention for about 10 years, when he concluded that he needed a house.

- He's also a poster child for subprime (defined as borrower with a low credit score and high leverage).

Summer/2002: In summer 2002, Calvin got a $1m mortgage at 3% ARM (explain ARMs) from Countrywide, despite the fact that he hadn't earned an income or held a job for about 10 years. He's not alone… *everyone's* out there getting mortgages, and (mouse click) the **era of easy money begins.**

- Total mortgages/total personal income almost doubled since the bubble (now about 90% in the USA, was about 50% at end of bubble)
- *Calvin would have been denied in 1997*, but mortgage denial rate falls from 29% in 1997 to 14% in 2002/3.

Of course, housing prices climbed steadily given the increase in demand, proving that housing prices can only go up.

Begs the question…why was Countrywide willing to lend Calvin money? Two reasons:

- First reason is that housing prices always increase, so Calvin's loan is backed by the good faith and credit of the SF real estate market.
    - In fact, SF prices up 25% in 2004, and Phoenix up 40% in 2005.

An aside: Securitization

Mortgages turned into tradable securities

Second reason Countrywide was willing to lend Calvin money:

Securitization: The mortgages are turned into tradable securities.

- Countrywide sold Calvin's loan to Merrill Lynch. Merrill bundles it into a MBS with 200 other mortgages and sells the MBS in the secondary market…perhaps to BofA. Might have sold different tranches to different investors.
    - Merrill takes a fee (spread) for the transaction.
- MBSs based on conforming loans were guaranteed by govt (actually, by Freddie and Fannie).
- *Strange incentives…*Countrywide has incentive to maximize volume, given that they won't hold the mortgages. Merrill has incentive to maximize volume, as it gets a fee for the creation of the MBS. By the time you get to the final holder (Bank of China), you're so far removed from Calvin that his unemployment is irrelevant!!

Who's buying the loans/securities? Ans: Almost everyone

- *Domestic banks*, like Merrill Lynch and Bear Stearns
- *Foreign banks*, like Northern Rock.
- *Hedge funds*
- *Mutual funds* and *money market funds*
- *Pension funds*, *foundations* and *endowments*

It's estimated that hedge funds and financial firms own $1tr of assets backed by subprime real estate by 2007.

Financial firms held ½ of AAA-rated tranches of CDOs. Puzzling…why didn't they pass this risk along to the markets as they typically do?

- Reason: Rated AAA, therefore riskless, therefore booked the premiums as instant profit, therefore big bonuses, therefore load up on them.

The foundation: 2002-2006

Love affair with leverage

Back to the main message: Second important consequence of the 2000-2002 actions.

Bear market over, search for return begins. Causes a **love affair with leverage**, as everyone knows that leverage = return!

- Hedge funds, leveraged loans, high yield bonds, real estate, tranching and securitization of anything that could be securitized all becomes mainstream.
- Double #hedge funds (now >10,000), triple hedge fund AUM
- Bank leverage increases to 30 or 40 times.
- This says it all…My driver owned six properties in SF area.

Summary: (1) era of easy money and (2) love affair with leverage. Jointly, as we'll see, these are an explosive combination. Very few realized it at the time.

2004:

- Calvin refinances, kicking the ball forward another three years.
- Rate hikes begin. Eventually rise from 1% to 5¼%. So mortgage rates start increasing.

2005/6:

- Only 60% of loans issued at peak of bubble were "prime." 40% were subprime or Alt-A.
- Absurd to think that the number of credit-worthy people in the sub-prime category more than doubled from 2002 to 2004"…labor market was weak then.

Subprime crisis begins: 2007H1

Mortgage companies failing and banks in trouble

Jan/2007:

Calvin's rate resets from 3% up to 7%. Can't afford it!!! Scrambles, but eventually delinquent. Can't refinance to spread his loan out over a longer term, either, because property values have stayed flat, so no equity. Millions of Americans in same position:

- Foreclosure rate triples from 2005 to 2007, even though the economy is healthy
- 60-day delinquencies double in 12 months to July/07. Ditto for foreclosures.
- By April, 13% of subprime loans are delinquent (versus 2% for prime loans).
- HSBC takes big charge for bad debts (20% or $2b bigger than expected). This should have been our wake-up call. They highlighted the number of loans issued in 2006 that weren't being repaid.

First half of 2007: Bankruptcies and problems galore. Dozens of firms whose business models were based on rising real estate prices go out of business or start haemorrhaging.

- Jan 2007: Ownit Mortgage Solutions. Sale of mortgages usually includes a repurchase agreement in which Ownit buys them back if borrowers miss payments in the first few months. Merrill asked for about $166m, and Ownit didn't have it. Highlights seriousness.
- Apr 2007: New Century Financial (biggest independent subprime lender, with $52b in mortgages)
- Aug 2007: American Home Mortgage (top ten mortgage provider, $59b; NO SUBPRIME…crisis moving up the quality curve; second biggest bankruptcy at that time, next to New Century Fin.)
- Aug 2007: run on Countrywide (biggest mortgage provider, 20% of mortgages) immediately after AHM went down. Led to eventual sale to BofA.
- Sep 2007: NetBank. Largest US bank failure in 14 years.
- Accredited Home Lenders

Over $200b in writedowns in 2007H2 alone.

Reminder…all this was because Calvin got a loan he shouldn't have got. Everything was connected to the bad loans, easy money and love affair with leverage.

The subprime crisis becomes a credit crisis: 2007

Contagion at work

Big deal…so a few subprime lenders are going under. Why do we care? Answer: "Contagion" … contagion at its best!

Now the problem isn't just Calvin … it's with the holders of the securities as well! Who's holding them? Remember the list from earlier…it included foreign banks:

- Germany (summer): Two German banks require bailouts. IKB (July and again Feb/08) bailed out by a consortium of German banks, and LandesBank (August). Both due to exposures to subprime securities they bought.
- United Kingdom (September): Northern Rock. First time ever that BoE exercised its responsibility as "lender of last resort" since gaining independence in 1997. Bank run after NR requested security from the BofE.
- France (August): BNP Paribas supports hedge funds
- China: Bank of China $2b writedown… How did Calvin's mortgage turn into problems for the Bank of China? Ans: They bought the MBSs.

[Aside: Lesson learned about globalization.]

- I was wrong: A California real estate problem brought a massive global financial crisis that came within inches of bringing down our entire financial system.
- My new thinking:
  - During normal periods, globalization not a big deal. In fact, it's good. During crises, it matters.
  - Home country bias, different business cycles, etc. will still put a ceiling on the impact of globalization during normal times.

The list of CDO buyers also included hedge funds:

- (May) UBS's Dillon Read Capital Management lost $125m in sub-prime
- (June) Bear Stearns hedge fund owned portfolios of subprime mortgages in the form of CDOs. Redemptions. Also, these were their collateral, so they faced margin calls. Two funds sink; Bear bails out one of them with $3.2b. Biggest financial rescue since LTCM.
- Sentinel Management Group (Aug 17 bankruptcy; $1.6b cash fund) Sentinel is "concerned that we cannot meet any significant redemption requests without selling securities at deep discounts to their fair value and therefore causing unnecessary losses to our clients."

- Sowood Capital: lost 50% ($1.5b) in July.
- Citadel (-50% in 2008)

Contagion spread across asset classes. Forced selling causes managers to sell liquid assets regardless of value, meaning performance goes haywire for asset managers across all asset classes.

- Give example of Frank Russell and our FX fund (March/08)

July 10-13: The contagion spread to credit markets, and the credit crisis begins

- Ratings agencies downgrade 1300 mortgage-backed securities as the value of the collateral backing them (real estate) falls.
    - Recall pension plans were buyers of MBSs. They're now forced to sell, regardless of value, because they're only allowed to own high quality instruments.
- It's even worse…so much forced selling that we can't value securities because there is no market for them. Securities are now worth only what people can sell them for, and there aren't many buyers. Fundamentals suddenly irrelevant; models fail.
    - (Aug) BNP Paribas suspended three funds because it couldn't calculate the value of its asset-backed securities. Other money market funds do the same. It "suspended the calculation of net asset value on three funds invested in asset-backed securities, due to a 'complete evaporation of liquidity in certain segments of the US securitization market'."
- It's a vicious circle: Impacts healthy firms, as they have to mark their holdings to market and realize the losses. Forces them to raise capital by selling assets, further depressing prices.

This was the wake-up call that sent tremors throughout the system. The credit crisis had begun. This led to …

The credit crisis blossoms: Summer 2007

Lenders stop providing financing and start hoarding cash. It's not just Calvin and the HFs anymore…it's the banks!! It's spreading.

- Banks can't assess their liquidity positions due to the lack of bids, so unable to extend credit.
  - Even new BGI hires in SF can't get mortgages, despite pretty high incomes and wealth levels!
- Markets seize…banks even stop lending to each other overnight, as they're unwilling to part with their cash.
  - O/N rate in US spikes to 6%. [timeline wrong? We're talking summer/07, but I think this happened in summer/08]
- Aug 9-13: Central banks inject hundreds of billions of $ of liquidity to deal with high overnight rates. [timeline?]
- Short-term commercial paper can't be rolled over anymore.
- Reserve deposits with Fed reach $870b by Sep/08, compared to normal levels of about $10b. More than 10 times the levels after 9/11!
- Hugely exacerbated by the fact that housing prices lower, so people have less equity, so banks less willing to offer credit. Similarly, businesses can't get credit because the recession adversely impacts their future earnings.

Crisis moved through our building. [back to summer/07]

- 17th floor felt in during last week of July.
  - GlobAsc sitting on cash, interested in investing in levered loans, CDX, etc.
- 32nd floor felt it next, with 20-sigma losses on successive days [Tue, Wed, Thu; 7th, 8th, 9th] due to forced liquidations across the industry
  - GSAM's GEO fund down 30%; Highbridge down 18%; ACI down 19%.
  - Explain how this happened: sudden liquidation of a mkt-neutral fund, probably precipitated by credit-related losses of a MultiStrat hedge fund.
  - Significant because of contagion the likes of which we'd never seen before.
- Then it hit the 31st floor. Give the BGI/GMSG story here. Five dominos identified:
  - Carry (traded tens of billions of dollars of FX)
  - Beta; Financial stocks; China; F2Q

  Contrast our experience with AXA (just launched, and faced –20%) and GSAM's Global Alpha (–22% in Aug); Mellon's GTAA fund…had lunch w/ MD who's looking to leave the sinking ship.

- Lesson: Importance of maintaining a low profile externally
    - Still have the stories of GSAM posted on my wall, as reminder to stay out of press.
- Lesson: Survival is the *sine qua non* of success.
    - Can lead to a conflict between investment and business objectives. The right investment decision might be the wrong business decision if leads to implosion. Therefore, we bypassed many opportunities. SP500 vol at 37%, but still won't sell it. Of course it'll make money, but must focus on surviving the next three months, not winning the next 10 years.
    - Corollary: "The one who makes the fewest mistakes wins." This is true in relationships, football and investing. You can always double, triple or quintuple check your numbers but you can never get your clients money back from an error.

So, at end of Q3, where did we stand?

- US Labor Dept announces the first fall in non-farm payrolls in years. Housing and credit markets get the blame. Recession on horizon??
- Lack of financing takes about 1/3 of buyers out of the housing market. Home prices fall further.
    - 2007 was worst housing market in either 25 years or 75 years, depending on the measure
- Consumer sentiment drops.
- Banks going under.
- Central banks injecting liquidity, even cutting interest rates.
- *But on Oct 9, Dow at 14,160.* Equity investors are oblivious to the crisis!! Subsequent crash should have been obvious.

Credit crisis becomes a financial crisis: 2008

2008H1: The disaster spreads

- March/2008: Bear Stearns fails. Excessive exposure to real-estate backed securities caused counterparty risk – everyone abandoned Bear. Bought by JP Morgan.
- Lesson learned: Don't put all your eggs into one basket; Diversification
  - Phone call w/ Jennifer about Bear employees who had $170k vanish over 12 months.
  - Moved our personal $ out of equities into long-term US treasuries
- It used to be that banks hoarded cash because of lack of liquidity. Now have a second reason to hoard cash: counterparty risk.
- On Apr 18 we made a decision to cover our small ($60m) short Iceland position. Couldn't find a buyer: People scared off by (a) the credit risk associated with Iceland banks and (b) threat of capital controls as the Prime Minister blamed "speculators" for their troubles so we were concerned about getting stuck with our positions.
  - We had trouble trading, so traded in small size day after day. Some days there wasn't a single buyer in the market (Apr 28, for example). So we cancelled the orders for another day. It took until May 6 to exit the position.
- Interesting story from week of Jan 21: *Market misinterprets sell off as due to crisis-related stuff but really SocGen fraud-related*
  - Jan 21 – big selloff in European equities that everyone thought was related to crisis-related panic selling.
  - Then 2 days later it is announced that an index futures trader at Soc Gen had generated €4.9bn of losses via fraud. This was discovered over the weekend and positions were closed out on Monday - hence Monday's underperformance particularly in the DAX index.
  - When this news came out on Thursday, Jan 24, there was a big rally in European shares as people revised their view of Monday so that the rout was now recognized as being due to a liquidation of positions by SocGen rather than fear-driven selling.
- July 2008: Indymac Bank. Fourth largest bank failure in US history; biggest since S&L crisis; top ten mortgage provider in 2007. Caused by $1.3b run on bank in June.
- Frank Russell redemption (date?). Clients making emergency redemptions so focus on their most liquid investments. We lost assets even though we had good performance.

September

- Sun, Sep 7/2008: Freddie Mac and Fannie Mae have even more exposure than Bear…owned or guaranteed HALF of US $12tr mortgage mkt. Stock price plummets as investors begin to realize this. Unable to secure debt or financing, so the govt nationalizes them before they go bankrupt.
- Weekend of Sep 13/14: Merrill sold to BofA.
- Weekend of Sep 13/14: Lehman had massive exposure on their books to Freddie and Fannie. Investors therefore drove Lehman's stock price to about zero. They go under, and on Tuesday Barclays buys them for the value of their real estate. Largest bankruptcy in US history.
    - *Tell story about the PIMs group.*
    - *Counterparty default simulation postponed due to a counterparty default.*
- Tue, Sep 16: No forward pricing for NOK due to the unavailability of interbank interest rates to price off of. Due to a "lack of liquidity" there was no fixing for Norway interbank rates as banks stopped lending to each other.
    - *We were still long NOK and soon after this imposed an override to reduce the position size.*
    - *Heavy use of overrides during this period, as our models aren't designed for these conditions.*

- Wed, Sep 17: Lehman is leasing a large building in London. That's now vacant, but the owner (Canary Wharf Properties) doesn't care because they have an insurance policy that pays the lease for the next four years. Unfortunately, that policy is written with AIG. AIG is insuring so many similar properties and other bad assets that it is downgraded, stock price falls to zero. It's put in the arms of the US government with an $85b loan in return for 80% of the company. (Eventually dumps $150b into AIG.)
    - *Daily crisis meetings. Drop in liquidity meant we couldn't trade our insights.*
- Tue to Thu, Sep 16-18: The USA's oldest money market fund, the Reserve Primary Fund, had almost 3% exposure to Lehman. This exposure becomes worthless, so the Reserve Fund "breaks the buck" on Tuesday. Their money market fund is only worth 97 cents on the dollar.
    - Important because MMFs are integral to the ongoing financing of corporations. We lend money to MMFs, which then provide the funds to corporations in exchange for Asset Backed Commercial Paper. If bank run worsened, the ability of corporations to secure short-term financing would have been impacted.
    - *Two hours from end of world.*
- Thu, Sep 18:
    - Short selling of financial stocks prohibited. *Problems for our hedge funds.*
    - SST down 50% at one point.
    - BONY breaks buck on $22bn fund.
    - Putnam closes $12bn cash fund, as they were unable to meet redemptions after a run on their fund.
    - Institutional run on funds is $500b.
    - Massive withdrawals of cash from MS PB.
    - Recalls of stock in Asia from GS and MS.
- Fri, Sep 19: Paulson announces his financial rescue plan, TARP, in which the govt buys toxic assets. Idea is that increase liquidity in the secondary mortgage market and reduce losses of financial firms holding these assets.
    - KEY: Paulson also announces (1) a $50b program to insure money market funds, much like FDIC and (2) willingness to accept ABCP as collateral for Fed loans through discount window, preventing the ABCP market from seizing.
- That week: Lost in all this is HBOS being taken over by Lloyds. HBOS was UK's largest mortgage lender.
- Sun, Sep 21: Goldman and Morgan Stanley become bank holding companies. They agree to "pay" increased regulation and decreased leverage in return for access to capital.
- *Throughout all this, we had to manage our counterparty risk exposures. This meant reducing positions and pulling back all excess cash, inadvertently adding to the overall market distress. E.g., pulled several billion from UBS in 2007.*

- Thu, Sep 25: WaMu seized and put into arms of JPMorgan Chase. Largest S&L in US; largest bank failure in US history. $16b run on bank in August, sold to JPMorgan Chase in Sep.
- Since Lehman went down, the equity market is about flat.
- Mon, Sep 29: Congress rejects the rescue package. *We were at Oxford Univ offsite, and as we walked out of bar to dinner we all saw what happened. Surreal.* Approved the next week.

Markets were confused: Banking best performing industry in the SP500, so hedge funds did badly.

Lesson: Better decisions are made on Mondays than Fridays – sleep deprivation and stress tend to deteriorate ones mental capacity after a few days

Financial crisis becomes an economic crisis: 2008Q4

October

- Sun to Fri, Sep 28 – Oct 3: Crisis goes global; banks dropping like flies
    - UK: Bradford & Bingley taken over by Banco Santander division, Abbey
    - Germany: Hypo Real Estate rescue by govt fails
    - Benelux: Fortis taken over by BNP and govts
    - Iceland: Nationalizes first of several banks
- Oct 3: Wells buys Wachovia (fourth largest bank in US)

Oct 6-10:

- *Wildest week in FX market history. MTM trying to surf in San Diego.*
- Brazil, Russia, Iceland, Indonesia suspend trading
- Gov'ts everywhere support cash funds
- Gov'ts everywhere bailing out banks everywhere
- Central banks everywhere slash interest rates
- Aussie/USD vol had hovered around 10% for ten years. Suddenly, it's 40% as AUS falls 10% inside of a day.
    - *Our vol trade is deep in the red.*
- Contagion spreads to equities, as investors de-risk everywhere and equity markets have worst week in 75 years: –20%
- October 8th:
    - *I was giving speech in Tokyo while the market was falling -9½% rtn (biggest in >20 years) and an actual earthquake hit*
    - *PB costs and margin requirements increasing daily.*
        - *We were trying to finalize launch of Euro Industries, but prime broker choice had been difficult to nail down given huge instability in pricing terms. On Wed 8th October, we chose Deutsche Bank and Credit-Suisse, irrespective of future pricing changes. By Thursday morning CS couldn't give us any pricing (the terms they'd offered the previous week no longer stood) and DB had up-priced so significantly we had no choice but to revisit. We ended up launching with Citi and UBS.*
    - Minimal FX liquidity…small trades driving price swings. ML wouldn't price many currencies.

- Lesson: Never underestimate the survival instinct of another. Relationships only go so far. PBs: "If it is between you and me, sorry."

Oct 10: Most volatile day in stock market history. Four intraday moves exceeding 8.4%.

- *Paul enroute to Aunt's 90th bday during the volatile day, and each successive call from Wheeler gave him a different picture of mkt performance…it's flat…no, it's down 8%…no it's up 1%…no it's down 6%.*
- *I bought (personal investment) near the low at 2:30 est, and made about 8% in the next hour.*

Oct 21: PB-forced sales

- *Oct 21 we noticed that EURNOK was sinking like a stone with an amazing move from 8.70 to 9.05 in a very short period of time. This was trading in the late afternoon, a time when one does not usually trade this pair as the liquidity is during European business hours. Checking around, MTM learned that a PB was liquidating a client & the PB told DB that 2 other banks were also counterparties and were being forced out of similar positions. So all three were racing to be first to sell a large NOK position to close out the position. We think there were many episodes like this spread through 2008—stuff you can't easily model yet can do a lot of harm.*
- *Complex fund structures caused problems. Example: equitized funds had built-in tolerances that were desiged in quieter times. They very nearly broke under the extreme volatility of 2008.*

Hedge funds suffer with worst months ever…–13% for Sep/Oct. Culprits include deleveraging, redemptions (due to liquidity demands and due to fear) and being long when they should have been short. Finished year at –20%.

Lesson: Size matters. Managing a huge portfolio is very different than managing a large portfolio. You have to put risk on earlier and take it off earlier ESPECIALLY in times of market stress. Damning the torpedoes doesn't make sense if you are piloting a Liquefied Natural Gas tanker/train.

Economic implications

Recession will be worse than consensus expects

However bad you think the recession will be, you're all optimists.

Why worse than consensus? The consensus is a realistic assumption if this was a normal recession, but this is anything but a normal recession. Let me give three reasons that the recovery will start later than Q3:

- ***Financial crisis.*** What makes this recession different is the fact that it's coupled with a financial crisis. While a typical recession lasts somewhere in the range of 8 to 16 months, financial crises typically last for multiple years.
    - A recent study by Ken Rogoff and Carmen Reinhart identified about 20 financial crises since WWII. Every crisis is different and no doubt this one is too. But the numbers from previous financial crises are staggering.
        - On average, housing prices fell by 35% over a period of 6 years. To date, U.S. housing prices have only fallen 23% over 2½ years.
        - Equity markets fall by 55% over a period of 3½ years. The S&P500 bear market is only 15 months old.
        - Typically, the unemployment rate rises 7 percentage points over the down phase of the cycle, lasting for 4 years. Our unemployment rate has increased by 2.8% over the past 2 years.

  If the current financial crisis is anything like previous financial crises, than the consensus view of a turn-around starting this summer would seems overly optimistic. We can't solve the economic crisis without solving the financial crisis. E.g., until the credit crisis (or is that a counterparty crisis?) is behind us, banks won't be willing to lend. This has to be dealt with before the economy turns around.
- ***Wealth destruction.*** Next, consider the sheer size of the reduction in household wealth over the last year. The fall in housing and stock prices has wiped out over 10 trillion dollars in household net wealth. To put this in perspective, this is about four times as much as the decline in wealth over the entire tech wreck of 2001-2002. *Four times as much wealth destruction!!* You don't recover from this quickly. After this devastating a blow, it's reasonable to expect both corporate America and its consumers to stay on the sidelines much longer than in normal circumstances. Companies laying off will only hire back cautiously. *This isn't a normal recession!*
- ***Ineffective stimulus.*** Stimulus works if government can entice consumers to spend rather than save.

Question: Will the stimulus package jump start the economy with net new spending, or simply offset the deleveraging that is happening by banks and consumers??
But gov't will have difficulty enticing consumers to spend and not save:

- We've got 80 million baby boomers who already have all the toys they need (average of 2.2 cars per household), and they just lost 40% of their retirement assets. There's no way they're going to spend more. I'd expect the savings rate to increase to 6% by 2010. Increasing savings means decreasing consumption and a slow recovery.

Financial implications

Certainly every conceivable valuation model favors equities at the moment. With the trailing PE of the SP500 at 11, implying a 9% earnings yield, it would appear that there has never been a better time to buy equities than now. So it's hard to argue against buying stocks, and I'd be the first to admit that there is a great buying opportunity on the horizon … it's just that the horizon is still way off on the horizon.

Two reasons to wait: (1) Markets are underestimating the magnitude of the recession and (2) markets are underestimating the duration of the recession.

- **Magnitude:**
    - One way we assess the extent to which the market is underestimating the significance of this downturn is to track the number of economic news announcements that fall short of expectations, as measured by the consensus forecast of the announcements. Over recent months, 70% of the news about the economy was worse than expected, an indication that the market isn't pricing in the full extent of the recession.
    - Nobody expected
        - Aston Martin sales…only 100 sold in UK in October.
        - Beer sales down 8.3% last quarter…biggest drop in history.

- **Duration:** Recession will last longer than expected, as we've already discussed. Drilling into the data to look for clues that the market is overly optimistic, one need look no farther than housing data.
    - Housing data, in particular housing prices, are likely to be the key for timing the bottom. They got us into this mess, and they'll get us out of this mess.
    - The housing data (housing starts, new home sales, building permits, housing prices) has been decisively worse than consensus, suggesting that we have much longer than markets expect before we see the rebound.

Long-run implications of the crisis

- The financial landscape has changed
  - Government regulation
  - Leverage and hedge funds
  - Entire sectors (and careers) have disappeared
  - New focus on risk modelling
  - Disappearance of investment banks
- Size and role of government
- Labor force implications

Speaker notes:

- That degree in financial engineering won't be as valuable as it was last year.
- Lindsay: "Last time something like this happened was 1920s and 1930s. That time, they only stopped regulating ten years later when they got distracted by the war."
- Just like there are no atheists in a foxhole, there are no libertarians in a credit crisis.
- Recycling: They are still collecting recycling in Mill Valley, but just storing it - there is no secondary market any more. Most of it used to get sent back to China in form of metal demand or as demand for new cardboard boxes to ship exports back to US. With the drop in commodity prices and general consumer demand the recycling market has plummeted.
- Equity falls…think of impact on people's retirements. Examples of friends postponing retirement.

Who’s to blame?

- **Regulators:**
  - SEC waived its leverage rules for the five investment banks in 2004.
  - Were Freddie and Fannie even regulated???
  - Shouldn’t have permitted loans that were unsafe for the economy.
- **Fed Reserve:**
  - Credit was too easy for too long.
  - They’re responsible for the health of our banking system.
- **Wall Street:**
  - Excessive leverage (too much risk), plus derivatives too complicated for our risk models.
  - Kept MBSs on their books instead of transferring the risk.
- **Banks:** Abandoned loan standards (employment history, income, down payments, credit rating, assets, property loan-to-value ratio and debt-servicing ability), emphasizing instead their ability to securitize and repackage subprime loans.
- **Ratings agencies:** Gave unrealistically positive ratings, apparently forgetting that prices can indeed fall.
- **Government:** Encouraged Fannie/Freddie to loosen standards. They oversee everything.
- **Misplaced incentives:**
  - *Bonus payments:* Hedge funds get 20% of a truncated distribution; Wall Street bonuses paid on short-term profits. Incentives are to maximize short-term gains, even if at the expense of long-term financial health.
  - *Credit ratings agencies:* paid by issuer of the MBS. (Also, when modelling risk, they seemed to have forgotten that home prices can decrease.)
  - *Home appraisers:* paid by issuer of the mortgage
  - *Securitization* (secondary market) implies incentives are to maximize volume of loans and MBSs.
- **Calvin**
- NOT greed. NOT hedge funds. NOT lack of regulation. NOT bonuses that were too high.

Other

Is this like the Great Depression ?? – No!!

- During the Great Depression Central Banks reduced, not increased money supply, Government was tiny part of economy (under 5% in US), 1000s of banks allowed to fail, Gold standard initially prevented currency adjustment and was then followed by global trade war and protectionism, unstable political landscape

It's not Japan either

- 14 years of Japanese experience happened in 18 months, policy reaction much more aggressive, investor's perception of the Japan experience is often a caricature. Events that happened over many years and with significant timelags are perceived as one. One example: contrary to popular belief, the rate of inflation did bottom after the Bank of Japan embarked on quantitative easing

Half of all ARMs will reset in the next two years, and the average monthly payment will increase by 60%. This, during a deep recession in which few can afford their current payments. Housing prices will continue to fall.

Finance lessons

- **Dominance of a risk premium** when it's in extreme short supply…It swamps all other risks, drives prices and severely impairs diversification. Liquidity is like air: When there is plenty of it you will pay almost nothing for it. When it is in short supply you will pay almost anything for it.
- **Anchoring:** At extremes investors anchor on the past and continue to expect a return to what has been "normal". This leads to pronounced momentum.
- **Flow matters:** Fall 07 and then again in 08 we have seen how significant the impact of flows can be on prices. There are fundamentals like E(cashflows) and disc rates but at times flows can dominate these.

Fixes/Stats

- Regulate loan origination better
- Better corporate governance to deal with incentive (and bonus) issues
- Is stimulus inflationary? No…$10tr of wealth destruction, so exists room for massive stimulus w/o Π.

- Govt stimulus effective only to extent that it spurs spending. Must go beyond the replacement of decreased spending.

Snippets

- Alpha is a drug…
- Just like there are no atheists in a foxhole, there are no libertarians in a financial crisis.
- Trick on staying alive as a forecaster…
- Better to be thought a fool…
- Bull market will end when we run out of 22-year-old rookies
- Liquidity is like air: When there is plenty of it you will pay almost nothing for it. When it is in short supply you will pay almost anything for it