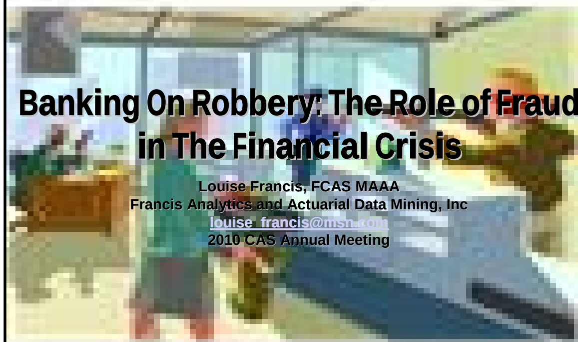

Banking On Robbery: The Role of Fraud in The Financial Crisis

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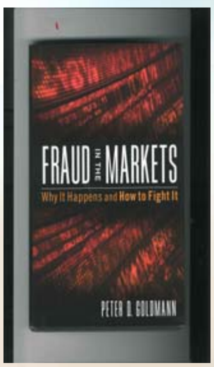
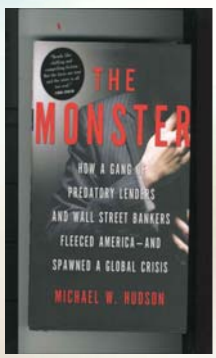
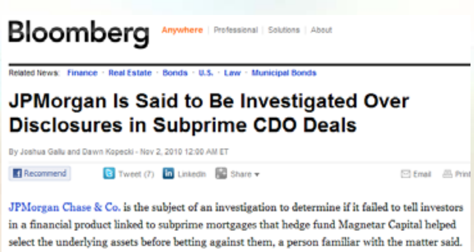
2010 CAS Annual Meeting

New Fraud Literature





SEC Investigates Investment Banks For Betting Against Their Products



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JPMorgan Is Said to Be Investigated Over Disclosures in Subprime CDO Deals

By Joshua Gallu and Dawn Kopecki - Nov 2, 2010 12:00 AM ET

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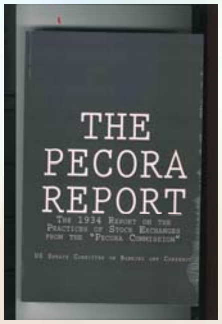
JPMorgan Chase & Co. is the subject of an investigation to determine if it failed to tell investors in a financial product linked to subprime mortgages that hedge fund Magnetar Capital helped select the underlying assets before betting against them, a person familiar with the matter said.

An Old Story



Overview

- Objective: Highlight the role of fraud in the Financial Crisis
- Some Fraud History: The S&L Crisis
- The Subprime Crisis
- The Madoff Ponzi Scheme
- The Mathematics of Fraud
- The Fraud Survey
- Conclusions

Francis-Prevosto "Data and Disaster", 2010 eForum

- Explored role of data in the financial crisis
- Illustrate that data was available
  - Much of analysis was exploratory
  - Some data mining was illustrated
- Could have detected problems
  - Due diligence could have uncovered fraud
  - Provide warning of deterioration on mortgage quality

Francis-Prevosto "Data and Disaster", 2010 eForum

- Two Case Studies of Use of Data to Detect Problems
  - Madoff Ponzi Scheme
  - Mortgage Crisis

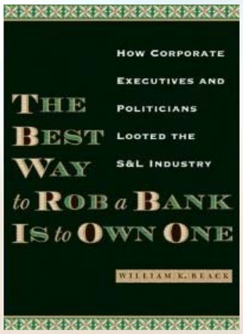
Causes of the Crisis per JRMS Financial Crisis Essays

- systemic failure of regulatory system
- lack of confidence resulting from accounting opacity and gimmickry
- a liquidity crisis partially resulting from "mark to market" accounting
- a bubble of historic proportions that could have been predicted from information available to bank managers and regulators at the time
- lax underwriting standards
- companies that were too big
- too much leverage
- inappropriate use of models without consideration of their limitations and without scrutinizing their assumptions for reasonableness
- moral hazard resulting from transferring risk to others, through securitization, leading to a complete failure to underwrite and manage the risks
- compensation incentives that encouraged taking on imprudent risk exposures
- Lack of a reliable source of independent information.
  - In the case of subprime mortgages and the credit agencies, due to conflicts of interest, the information was not independent, and essentially only one view, an optimistic one was tolerated
- "excesses had been building up for a while throughout the financial system"
  - those who warned of the coming crisis were punished or ignored.

"A New Approach for Managing Operational Risk "

Criminal and Malicious Acts	Events where the perpetrator(s) engages in a conscious act of wrongdoing, where he/she intends to benefit him/herself at the expense of another party. Criminal acts involve events were the perpetrator expects to receive a monetary benefit. Examples: Theft, fraud. Malicious acts involve events where the perpetrator also expects to benefit, but the benefit is of a non-monetary kind. Examples: Vandalism, terrorism
Principal Agent Acts	Events where the perpetrators engages in a conscious act of wrongdoing, which may nominally benefit his/her firm, but which are not in the firm's best interest. Example: falsifying or misrepresenting underwriting information to secure additional clients.

Fraud Kindergarten: The S&L Crisis



Control Frauds

- Coined term “control frauds”
- those committing the frauds have control of their company.
- They also control many other resources needed to keep the fraud going such as lawyers, accountants, appraisers and lobbyists.
- Perpetrators of the S&L frauds, such as Charles Keating, orchestrated an extensive lobbying effort against the regulators.
- Black documents the scheming that was used to restrain the Bank Board from intervening to close down the frauds. “One of the great advantages that white-collar criminals have over blue-collar criminals is the ability to use top lawyers even before criminal investigations begin”

Regulatory Interference in S&L Frauds

- After regulatory action against Don Dixon was initiated, Representative Robert Eckhardt phoned the FBI director to find out who authorized subpoenas against Vernon and to convey Speaker Wright’s displeasure.
  - Another representative called the Bank Board and requested they not help the Justice Department.
  - The Vernon bankruptcy ultimately cost the taxpayers $1B.
- Some of the additional regulatory interference that Keating and other S&L owners implemented was:
  - The Bank Board was coerced to block aggressive interventions against known frauds by field offices.
  - The Bank Board was forced to hire back an incompetent manager who was sympathetic to the control frauds. The Bank Board was required to give the employee a significant raise.
  - The Bank Board was forced to sign an agreement to cease and desist in its investigation of Lincoln Savings.

Statistics From S&L Crisis

	Total	Ca	Tx
Institutions Under RTC Control	686	59	137
Institutions Where A Criminal Referral Was Filed	455	42	85
Percent	66%	71%	62%
Referrals	2,265	175	631
Individuals Named on Referrals	4,559	223	1,350

From Table 2, p38, Big Money Crime by Calavita et al.

Characteristics of Control Frauds

- **Fast growth**
- **Extreme Leverage**
- **Lending to the uncreditworthy**
- **Misuse of accounting, in particular, inadequate reserves**

The Subprime Crisis

	Cumulative Default Rates @12/31/07								
	Development Age								
Year	1.000	2.000	3.000	4.000	5.000	6.000	7.000	8.000	9.000
1999	0.013	0.076	0.131	0.179	0.202	0.223	0.231	0.236	0.239
2000	0.015	0.084	0.144	0.177	0.202	0.214	0.221	0.225	
2001	0.019	0.090	0.148	0.191	0.209	0.221	0.228		
2002	0.011	0.066	0.111	0.135	0.151	0.158			
2003	0.008	0.050	0.081	0.103	0.114				
2004	0.009	0.048	0.064	0.089					
2005	0.010	0.074	0.136						
2006	0.026	0.128							
2007	0.040								

	Age-toAge Factors								
	Development Age								
Year	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	Tail
1999	5.869	1.714	1.371	1.128	1.101	1.035	1.024	1.012	
2000	5.573	1.719	1.233	1.141	1.059	1.033	1.018		
2001	4.876	1.644	1.285	1.099	1.056	1.029			
2002	6.150	1.691	1.213	1.116	1.052				
2003	6.049	1.627	1.276	1.107					
2004	5.570	1.344	1.383						
2005	7.577	1.845							
2006	5.005								
Average	5.834	1.698	1.294	1.118	1.067	1.032	1.021	1.012	
Selected	5.800	1.700	1.300	1.100	1.067	1.032	1.021	1.012	1.0453
Age to Ultimate	16.779	2.893	1.702	1.309	1.19	1.115	1.08	1.058	1.0453

Some Observations

- Subprime mortgages had some high default rates before mortgage bubble
- Lewis (The Big Short) reports that two analysts obtained data from Moody's that showed high default rates
- The analyst concluded that the entire industry was distressed

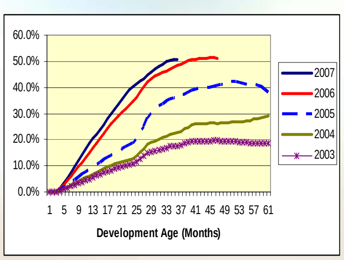
Default Rate Estimates

Default Rates Developed to Ultimate

Year	Current Year End Defaullt Rate	Age To Ultimate	Ultimate Default Rate
	(1)	(2)	(3)=(1)*(2)
1999	0.239	1.058	0.253
2000	0.225	1.058	0.238
2001	0.228	1.080	0.246
2002	0.158	1.115	0.177
2003	0.114	1.190	0.136
2004	0.089	1.309	0.117
2005	0.136	1.702	0.231
2006	0.128	2.893	0.371
2007	0.040	16.779	0.673

Notes:
(1) All rates adjusted to 12 month basis by dividing by 0.75

Delinquency Rates Updated



Data supplied by LoanPerformance.com

Default Rates

- Demyank (2009) notes that termination rates for subprime mortgages were relatively constant for origination years from 2001 through 2006.
- At 12 months of maturity, termination rates are about 20%, at 24 months they are about 50% and at 36 months they are about 80%.
- However, when housing price appreciation slows, defaults grow as a percent of the terminations and refinancings decline. Demyank's analysis also indicates that the subprime lending was a net loss to homeownership; that when foreclosures are subtracted

Lewis: *The Big Short*

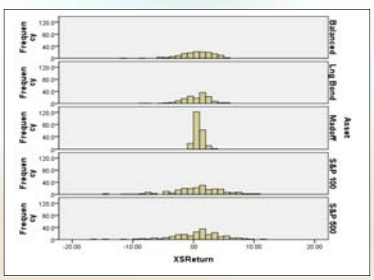
- Hedge fund managers he highlights, such as Eiseman and Burry, believed that the companies involved in selling the subprime loans and derivatives such as the banks, investment companies, and credit rating agencies, were not only inept, but were unethical.
- He describes how the investment banks devised strategies to convince the credit rating agencies to assign A or better ratings to subprime pools that did not merit the high ratings.
  - These securities could then be packaged and sold to pension funds and ordinary investors as high-quality fixed investment products.
- He also cites the statistic that by 2005 the FBI claimed that mortgage fraud had increased by 600% and more resources needed to be dedicated to the problem (they in fact were not).
  - In 2004 CNN reported that the FBI warned of the potential for the mortgage fraud to become an epidemic (Frieden 2004).

Bubbles

- Michael Burry in Lewis's *The Big Short* "It is ludicrous to believe that asset bubbles can only be recognized in hindsight"

Housing Prices Never Go Down?

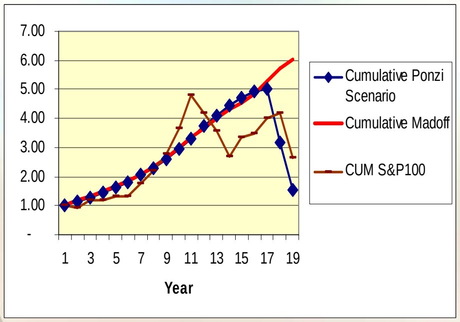
Some Madoff Statistics



Some Madoff Red Flags

- A very large hedge fund using a small unknown accounting firm
- All assets allegedly were sold by December 31 of each year and invested in treasuries
- Madoff's description of his strategy changed very little over time, while other investment manages needed to update strategies periodically
- There was no evidence of the trades that Madoff purportedly made. For instance, it was a huge fund and sale of all assets at the end of the year would be noticed. Markopolis (2010) states that a Bloomberg terminal could have been used to quickly and easily to verify that trades claimed by Madoff were in fact made.
- After option costs, Madoff's strategy could not have beaten T-Bill returns (Markopolis, 2010, Forray, 2009)

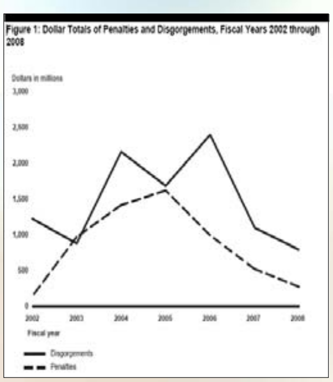
Ponzi Math



Who Suspected Fraud?

- **Helyar et al. (Bloomberg) suggest that many hedge fund managers did believe that the Madoff returns and or strategy were phony. They found that at least some fund managers believed that Madoff was engaging in a type of fraud known as "front running".**
- **Arvedlund reports that during one of the rare investigations by the SEC, Madoff coached the management of the Fairfield Fund on strategies for responding to SEC questions**

Regulatory Forbearance



2009 GAO Report

Akerloff and Romer: Mathematics of Looting

- Value =Assets – Liabilities
- Value_{t+1} $=\text{Assets}_t$ +(-) Income_{t+1} – Dividends_{t+1}-Liabilities_t
- Objective: maximize value of bank
- Three period model

$$\max(V_0) = \max \frac{(\rho_2(A) - (1+r_1)(1+r_2)[L - \rho_1(A) - d_1]}{1+r_2} + d_1$$

$$\textit{subject to } 0 < \mathrm{cA}_0 < \mathrm{W}_0,$$

$$\rho_t(A_t) = \textit{cash payments}, d = \textit{dividends}$$

Looting Mathematics cont.

$$\max(V_o) = \frac{\rho_2(A)}{1+r_2} + \rho_1(A) - (1+r_1)L_0$$

$$\textit{subject to } 0 < cA < W_1$$

$$d_1 < M(A)$$

$$d_2 < \max\{0, \rho_2(A) - (1+r_1)[(1+r_1)L_0 - \rho_1(A) + d_1]\}$$

$$\max(E) = \frac{d_2}{1+r_2} + d_1, E = \textit{owner's equity}$$

Results of Looting Math

- **The government allows management to pay itself M(A), an amount that may be greater than or less than V.**
- **if M(A) exceeds market value V, management is incented to invest in negative return projects in period 1, and default in period 2.**
- **If necessary, it will borrow in period 1 to fund management dividends.**

Fraud Survey

Were you or someone in your family, or a friend the victim of financial fraud in the last 5 years (i.e. in the period leading up to the crisis and its aftermath)?

Answer Options	Response Percent	Response Count
yes - mortgage fraud	0.0%	0
yes - securities or stock fraud	5.9%	3
yes - other financial fraud	17.6%	9
not sure	13.7%	7
No	64.7%	33
Additional comment		6
	answered questior	51
	skipped questior	0

http://www.surveymonkey.com/s/ZC6F53B

Selected Write-In Survey Solutions

- Eliminating the revolving door between regulators and the regulated and instituting oversight independent of the Fed and financial institutions.
- "our regulators are almost all political appointees (mostly lawyers), are generally clueless and easily corrupted - anything else is an improvement"
- Several people wanted prior laws from the 1990s that imposed greater restrictions on financial institutions restored. Presumably this included the Glass–Steagall Act that prohibited investment banks from owning banks.
  - One person mentioned the older laws "prohibited gambling on mortgage backed securities".

Results: The evidence of bubbles and fraud was there

- abundant data was available to determine
  - that there was a housing bubble
  - that mortgages were deteriorating
  - that mortgage fraud was occurring and was rapidly increasing
  - that pools of subprime mortgages were granted high quality ratings that they did not deserve
- that Madoff was committing fraud

Results: What was willfully ignored or known

- An S&P email indicates that employees were specifically instructed not to request data.
- evidence that many fund managers suspected that Madoff was committing fraud, but they believed that the fraud would benefit them.
- Numerous authors, journalists and investigators supplied evidence that many people realized that subprime mortgages and the related pools of mortgages (Collateralized Debt Obligations) were unprofitable and that a significant increase in mortgage fraud was occurring.

Results: Looting

- "Looting" occurred during the S&L crisis.
- The S&L looting involved cooperation between bank managers, their service providers such as auditors, and the government. Members of congress were actively involved in passing legislation that prolonged the fraud and interfered in law enforcement investigations of the perpetrators of fraud.
- The evidence in this paper also suggests that "looting", i.e., devising and selling inherently unprofitable products was a key cause of the GFC.
- Interference with legislation helped to create the conditions for the GFC.
  - In 1990s, legislative process was used to eliminate last barriers (i.e., Glass Steagall eliminated with Grahm-Leach-Blighly) to reckless behavior by financial services companies.
  - Changes to the Commodities Futures laws allowed derivatives such as the CDOs and CDSs that caused the crisis

Conclusions

- Systemic risk is a risk that affects a financial system, such as the Savings and Loan industry, that has the potential to affect a nation's economy (in the case of the S&L crisis) or the global economy in the case of the GFC.
- This paper presented evidence that fraud played a significant role in both crises.

Fraud and Systemic Risk Regulation

- The evidence presented in this paper suggests that fraud regulation needs to be a key component of Systemic Risk Regulation.
- The SEC needs a “chief criminologist”, i.e., someone experienced in fraud detection and prosecution.
- More FBI resources are needed to investigate and prosecute financial fraud.
- Regulators must search for and prosecute fraud.
- Increasing the emphasis on enforcement and on detecting fraud before it creates a system-wide crisis can be accomplished without any new legislation
- legislative changes in the late 1990s and early 2000s appears to have removed some barriers to fraud.
- if fraud is not addressed, future crises will occur.

Systemic Risk Data Collection Effort

www.ce-nif.org

Documentary *Inside Job*: the Trailer

- From Academy Award® nominated filmmaker, Charles Ferguson ("No End In Sight"), comes Inside Job, the first film to expose the shocking truth behind the economic crisis of 2008. The global financial meltdown, at a cost of over $20 trillion, resulted in millions of people losing their homes and jobs. Through extensive research and interviews with major financial insiders, politicians and journalists, Inside Job traces the rise of a rogue industry and unveils the corrosive relationships which have corrupted politics, regulation and academia.

Plunder – The Crime of Our Time

Questions?