CASE STUDIES ON DERIVATIVES INDUSTRY DEBACLES

Comprehensive Analysis of MF Global Collapse

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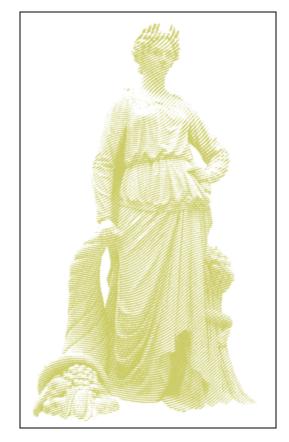
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Comprehensive Analysis of MF Global Collapse

- A. Background on the Firm
- B. MF Global Case Study



Icon above is based on the statue in the Chicago Board of Trade plaza.

 $Source: Excerpted from \ Till\ (2012).$

^{*} The outline of facts in this section is based on publicly available information as of 4/5/12.

A. Background on the Firm

Prior to its bankruptcy on October 31st, 2011, MF Global Holdings Ltd. provided:

- "execution and clearing services for exchange-traded and OTC derivatives products,
- non-derivative foreign exchange products, and
- securities in the cash market."

1. Warning Signs (2007-2008)

1.a. Aftermath of Spin-Out

- "The launch of Man Group's [Initial Public Offering] ... for MF Global has been disappointing ..."
- "Investors don't like the structure of the deal, which sends all the IPO proceeds to the Man Group ..."
- "It's an 80% bailout, not including the concurrent \$1.4 billion debt offering that went back to the parent. And that comes after a soft two quarters for their business." [Italics added.]

1. Warning Signs (2007-2008)

1.a.i. Aftermath of Spin-Out: Short-Term Debt*

Excerpted from MF Global Ltd. Form 10-Q as of December 31, 2007:

MF GLOBAL LTD. NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Unaudited) (Dollars in thousands, except share data)

Short-term borrowings consist of the following:

	De	cember 31, 2007	March 31, 2007	
364-Day Bridge Facility	\$	1,400,000 \$	-	
Other short-term borrowings	\$	400,000		
Bank overdrafts		73,672	25,453	
Current portion of long-term borrowings			56,552	
Total	\$	1,873,672 \$	82,005	
			·	

^{*} This amount of debt could be considered to be quite large, given the expected future profitability of the firm.

1. Warning Signs (2007-2008)

1.a.ii. Aftermath of Spin-Out: Status of Chief Financial Officer

NEW YORK--(BUSINESS WIRE)--January 04, 2008

- "MF Global Ltd. (NYSE: MF) ... announced [the resignation of its] chief financial officer and a director of the company to pursue other opportunities. The Board of Directors named ... [an] interim chief financial officer. ...
- [The former CFO had] joined the company in September 2006 from the New York Stock Exchange to bring the company public and assist in its transition to U.S. reporting standards."

1. Warning Signs (2007-2008)

1.b. Profitability of Firm

Excerpted from MF Global Ltd. Form 10-Q as of December 31, 2007:

MF GLOBAL LTD. CONSOLIDATED AND COMBINED STATEMENTS OF COMPREHENSIVE INCOME (Unaudited) (Dollars in thousands, except share data)									
	Three month Decembe		Nine months ended December 31,						
	2007	2006	2007	2006					
Net Income	\$ 31,218	\$ 55,432	\$ 13,523	\$ 111,937					
Other comprehensive income adjustments:									
Changes in market value of available for sale securities (net of \$14,537 tax) Unrealized losses on cash flow hedges (net of \$9,279 and \$12,197 tax,	-			24,558					
respectively)	(13,354)	-	(17,551)						
Foreign currency translation adjustment	(68)	3,045	4,827	3,695					
Comprehensive income	\$ 17,796	\$ 58,477	\$ 799	\$ 140,190					

1. Warning Signs (2007-2008)

1.c. Net Excess Regulatory Capital

	MF Global Inc. (Formerly Man Financial Inc.)											
									Customers'			
	A/O		Adjusted		Net Capital		Excess		Required	Excess Net Capital /		
	<u>Date</u>		Net Capital	<u>R</u>	Requirement		Net Capital	Se	gregated Funds*	Customer Funds		
05/	31/2007	\$	581,103,464	\$	402,913,253	\$	178,190,211	\$	8,384,461,426	2.1%		
06/	30/2007	\$	605,217,511	\$	364,381,766	\$	240,835,745	\$	8,235,595,803	2.9%		
	•											
10/	31/2007	\$	535,142,778	\$	427,261,012	\$	107,881,766	\$	9,929,407,496	1.1%		
11/	30/2007	\$	645,473,966	\$	414,600,708	\$	230,873,258	\$	9,889,773,129	2.3%		
				_		_		_				
	29/2008	\$	640,913,963	•	509,842,535	•	131,071,428		13,007,347,859	1.0%	< 6th Lowest Ratio Amongst 151 FCMs	
03/	31/2008	\$	771,268,907	\$	417,502,089	\$	353,766,818	\$	9,684,866,771	3.7%	< 26% Drop in Customer Segregated Fu	
	•											
	•											
0.54		•	700 000 740	•	440.040.000		000 450 000	•	0.004.704.000	0.50/		
	31/2008	\$	782,299,749	•	443,840,666	_	338,459,083	1	9,664,731,983	3.5%	0.0440400	
06/	30/2008	\$	608,963,888	\$	456,329,713	\$	152,634,175	\$	10,566,911,049	1.4%	< On 6/13/08, company announces** pla	
	•										to refinance \$1.4 billion bridge loan. This	
	•										includes using "excess funds."	
00/	31/2011	¢	495,665,616	¢	328,485,943	¢	167,179,673	¢	7,270,301,248	2.3%		

Data Source: The CFTC monthly reports on "Financial Data for FCMs," which is accessible at: http://www.cftc.gov/MarketReports/FinancialDataforFCMs/index.htm.

** Source: MF Global (2008b).

^{*} These figures only include funds "required" to cover margins. As of February 2012, the CFTC now also releases the total assets in customer accounts, according to Prezioso (2012).

1. Warning Signs (2007-2008)

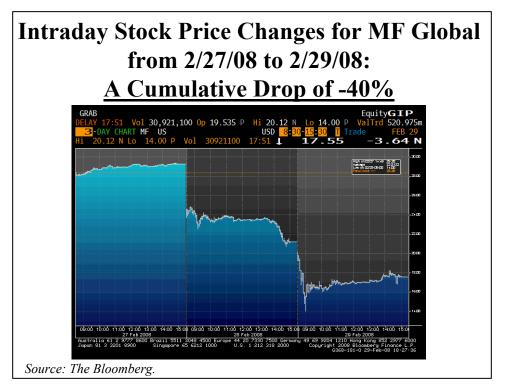
1.d. Rogue Wheat Trade

- On February 28th, 2008, MF Global Inc. revealed a \$141.5-million loss from a wheat-futures trading position taken by one of its registered representatives for the representative's proprietary (own) account.
- The clearing firm did not have automatic limits in the sizing of futures trades executed electronically, when the operator was a registered representative of the firm.
- "The risk systems were not active at the times, because they 'slowed' transactions."

1. Warning Signs (2007-2008)

1.d. Rogue Wheat Trade

• One day later, "Credit rating agency Moody's Investors Services ... downgraded the long-term issuer rating of MF Global Ltd ..."



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1. Warning Signs (2007-2008)

1.e. MF Global Stock Price Compared to Refco's

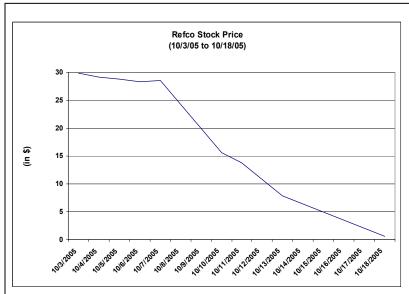


Illustration of Refco's stock price when accounting fraud was revealed at this publicly traded brokerage, which declared bankruptcy soon thereafter.

Source of Data: The Bloomberg.



MF Global's cumulative stock price decline eventually mirrored the quick drop in Refco's stock price, but over a longer timeframe.

Source of Data: The Bloomberg.

1. Warning Signs (2007-2008)

1.f. Macro Context: Debt Market Difficulties

- Caballero et al. (2008) described how in mid-2007, "funding dried up for entire segments of the U.S. and international banking sector ... leading to major convulsions of credit and money markets ..." [Italics added.]
- Credit Suisse's ex-CEO, Oswald Gruebel stated in late April 2008 that the international financial system had come close to the brink in mid-March-2008.
- According to Thompson (2008), Gruebel noted that fortunately, the Federal Reserve Board and the European Central Bank realized this, and on a *de facto* basis took over the inter-bank market. "We've narrowly escaped a system collapse. This has never happened before."

2. Warning Signs (2010-2011)

2.a. Major Shift in Business Strategy

• On February 2, 2012, the head of Rapid Ratings International testified at a Congressional hearing, stating that the head of MF Global had "inherited an unhealthy company and made it worse by some high-stakes gambles."

	YEAR ENDED MARCH 31,							
(Dollars in millions)	2011	2010	2009	2008	2007			
Net (loss)/ income attributable to MF Global Holdings Ltd.	\$ (81.20)	\$ (137.00)	\$ (49.10)	\$ (69.50)	\$ 188.00			
Source: MF Global (2011), p.36.								

The "high-stakes gambles" will be covered in the next slides.

2. Warning Signs (2010-2011)

2.b. Large-Scale Proprietary Trading

• The Rapid Ratings chief also "noted in his testimony that MF Global's business model had been deteriorating for several years prior to its failure, ...

... and that the new risks in European strategy only made its situation more precarious."

• MF Global's "biggest source of revenue was interest earned on money held for ... [MF Global's customers, who traded] futures and options. That was shrinking as rates fell."

2. Warning Signs (2010-2011)

2.b.i. Large-Scale Proprietary Trading: 10-K Disclosure

- MF Global's Form 10-K documented the risks of their leveraged European debt strategy as follows*:
- "Many of our principal transactions depend on external funding and financing and we also depend on third parties to monetize our gains from principal trading."
- "Our ability to earn the returns that we expect in connection with our principal transactions, including our proprietary activities, depends on our ability to fund and finance these transactions through internal and external sources.
- ... both funding and liquidity restrictions can result in significant losses for the firm."

^{*} The fact that MF Global's proprietary trades were well-documented in the company's 10-K was pointed out by Tavakoli (2011).

2. Warning Signs (2010-2011)

2.b.ii. Large-Scale Proprietary Trading: KPMG Special Administrator Report

- "While MFG Inc was the principal on these trades, [MF Global UK Limited] ... intermediated in these trades with the European repo counterparties and ...
- ... was liable to meet any margin calls made by the counterparties in respect of those trades.
- In the normal course, ... [MF Global UK Limited] would expect to be put in funds [i.e., reimbursed] by MFG Inc. for such margin."

2. Warning Signs (2010-2011)

2.b.ii. Large-Scale Proprietary Trading: KPMG Special Administrator Report

- [MF Global UK Limited] "provided [the] repo financing" to MFG Inc in order for MFG to fund its outright bond positions through repo to maturity (RTM) trades ..."
- [According to Ritholtz (2011), "In Britain, there is no limit to the amount of leverage against borrowed collateral through rehypothecation."]
- As of 10/31/11, "the total outstanding RTM notional was approximately \$6.3 billion and collateral of approximately \$720 million was held by repo counterparties."

2. Warning Signs (2010-2011)

2.b.iii. Large-Scale Proprietary Trading: Enhanced Yields

- "Revenue from the [leveraged] European sovereign trades was about \$47 million during the fiscal fourth quarter ended March 31 [2011], ...
- ... and \$38 million ... in the following quarter, ... [according to] an October [2011] investment presentation."

2. Warning Signs (2010-2011)

2.b.iii. Large-Scale Proprietary Trading: Enhanced Yields

Yield of Generic 6-Month US Treasury Bills (as of 3/31/11):

Data Source: The Bloomberg.

Short-Maturity European Sovereign Bond Yields* First Yield Settlement Date of 3/31/11 Coupon Maturity Issuer **Spanish Government** 2.75% 4/30/2012 1/13/2009 2.36% Italian Government 4.00% 4/15/2012 4/15/2007 2.02% Belgian Government 4.00% 6/4/2012 6/4/2007 1.77% Portuguese Government** 2/13/2002 5.00% 6/15/2012 6.36% Irish Government** 3.90% 3/4/2009 6.17% 3/15/2012

Equally-Weighted Blended Yield:

0.17%

3.74%

^{*} This table of European bonds is not an exact representation of MF Global's 2011 portfolio. Instead, the table is meant to illustrate the enhanced yields available from short-maturity European debt that had been available as compared to US Treasury Bills, as of 3/31/11.

^{**} For example, MF Global (2011b) states that their "Portugal and Ireland [bonds] carry a weighted average maturity of February 2012." Instead, the table shows the yields for Portuguese and Irish bonds that have slightly longer maturities than the bonds likely held by MF Global.

2. Warning Signs (2010-2011)

2.b.iv. Large-Scale Proprietary Trading: Source of Collateral

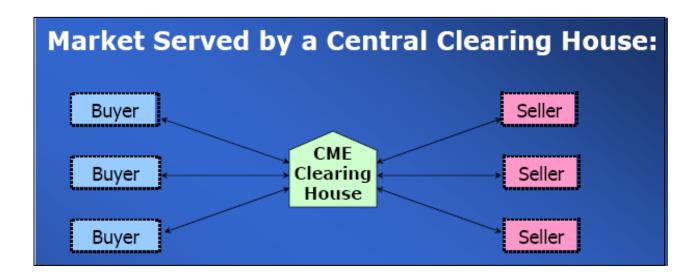
- According to KPMG (2011), MF Global was required to put up \$720 million in collateral (or 11.4% of the value of the portfolio) in order to be able to enter into this financed transaction.
- Because CFTC rules had allowed "internal repurchase" transactions by FCMs and because MF Global's customer agreements had explicitly allowed rehypothecation of customer collateral, at least some of the \$720 million held by MF Global's counterparties as collateral for the European debt trade ...
- ... may have ultimately originated from U.S. and/or U.K. customer funds.

2. Warning Signs (2010-2011)

2.c. Replacement of Risk Manager

- "MF Global Holdings Ltd.'s executive in charge of controlling risks raised serious concerns several times ... [in 2010] to directors at the securities firm about the growing bet on European bonds by" the head of the firm.
- The Chief Risk Officer "contended MF Global didn't have enough spare cash to withstand the risk of its position in bonds of Italy, Spain, Portugal, Ireland and Belgium.

- 3. Exact Nature of Customer Protections in the Futures Markets
- 3.a. Financial Safeguards are for the Clearing System
- For every transaction received by or matched through its facilities, CME Clearing is substituted as the counterparty, guaranteeing performance on the opposite side.



- 3. Exact Nature of Customer Protections in the Futures Markets
- 3.a. Financial Safeguards are for the Clearing System
- "The risk management and financial surveillance techniques are designed to:
 - Allow swift and appropriate action to be taken to rectify any financial problems and protect the clearing system; and
 - Prevent the accumulation of losses."

[Italics added.]

- 3. Exact Nature of Customer Protections in the Futures Markets
- 3.b.i. Customer Protections, according to the CFTC
- "... the laws and regulations governing the insolvency of FCMs and clearing firms are designed to minimize losses to customers by providing certain protections to customer accounts."
- "These protections include[:]
 - requiring the segregation of customer funds from those belonging to the FCM or clearing firm,
 - giving priority to the claims of customers, and
 - expansively defining the category of property that may be considered 'customer property' subject to a customer's claim."

- 3. Exact Nature of Customer Protections in the Futures Markets
- 3.b.i. Customer Protections, according to the CFTC
- "Generally, in such circumstances, cash in customer accounts is promptly transferred, along with the customers' open positions, to a solvent FCM even before a trustee is appointed to administer the bankruptcy."*



• "After such a transfer takes place, the customer is free to transfer his funds and open positions to the FCM of his choice."

^{*} This is what had happened with the 2005 Refco bankruptcy and the 2008 Lehman bankruptcy.

- 3. Exact Nature of Customer Protections in the Futures Markets
- 3.b.ii. Customer Protections in Other Jurisdictions

Canada

• The customers of Canadian brokerages, including futures traders, are covered by the Canadian Investor Protection Fund.

- 3. Exact Nature of Customer Protections in the Futures Markets
- 3.b.ii. Customer Protections in Other Jurisdictions

China

- "The China Futures Margin Monitoring Center is a thirdparty watchdog that receives daily reports of how much segregated customer money should be held at a futures broker and ...
- ... compares that to the amount banks and exchanges say the broker should be setting aside ..."
- "... if the U.S. had a similar system it would have given 'an early warning' about the customer-fund loss at MF Global."

- 3. Exact Nature of Customer Protections in the Futures Markets
- 3.b.ii. Customer Protections in Other Jurisdictions

Caveats

- For this topic to be comprehensively covered, one would need to include the relevant protections in other jurisdictions as well.
- Instead, the intention of the previous two slides was to point out two models, which would be an *improvement* over the current set-up in the U.S.
- Acworth (2009) documents some of the weaknesses in protections for futures customers in the U.K. and in Continental Europe (relative to the U.S.' protections) that had become apparent in the aftermath of the Lehman collapse.

- 3. Exact Nature of Customer Protections in the Futures Markets
- 3.b.ii. Customer Protections in Other Jurisdictions

Caveats

- Further, in the UK, "... the jury is still out whether the ... 'special administration regime' ... implemented after the Lehman debacle will facilitate a return of ... [customersegregated] assets within an acceptable timeframe."
- "While American clients have recouped nearly threequarters of their cash, the British have at best got back about a quarter."

- 3. Exact Nature of Customer Protections in the Futures Markets
- 3.c. "Bankruptcy Pitfalls for Dually-Licensed Brokerage Firms"*
 - A dually-licensed firm is one that is "registered as both a futures commissions merchant (FCM) and a securities broker-dealer."
- "... separate and potentially divergent procedures exist under the Bankruptcy Code and the Securities Investor Protection Act ('SIPA') for liquidating securities and futures businesses."

^{*} This article was pointed out by Melin (2012).

- 3. Exact Nature of Customer Protections in the Futures Markets
- 3.d. Wide Latitude for Investment of Customer Funds
- i. Internal Repurchase Operations
- US regulations had "allow[ed] futures brokers to conduct internal 'repurchase' operations, swapping out customer cash for collateral."
- "In such transactions, the firm swaps customer funds for securities such as corporate bonds or foreign debt held at another part of the firm. The firm can book the excess interest as profit or pass it on to clients."
- This practice was disallowed after the collapse of MF Global.

- 3. Exact Nature of Customer Protections in the Futures Markets
- 3.d. Wide Latitude for Investment of Customer Funds
- ii. Rehypothecation
- MF Global's customer agreement for futures clients allowed the firm to "pledge, repledge, transfer, hypothecate, rehypothecate, loan, or invest any of the [customer's] [c]ollateral ..."
- "Rehypothecation occurs when a bank or broker re-uses collateral posted by clients ... to back the broker's own trades and borrowings."

3. Exact Nature of Customer Protections in the Futures Markets

[Wide Latitude for Investment of Customer Funds: An Exception]

• "Canada's regulations do not allow client-segregated monies to be borrowed for speculative purposes."

4. Final Week of MF Global

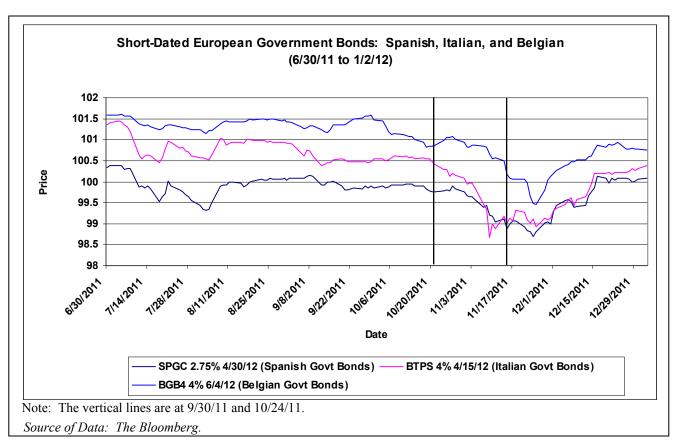
4.a. Ratings Downgrade on 10/24/11

- "The rating action reflects Moody's view that the current low interest environment and volatile capital markets conditions make it unlikely that MF Global, in the near term, ...
- ... will be able to achieve the financial targets that Moody's had previously specified were required for it to maintain a Baa2 rating."

- 4. Final Week of MF Global
- 4.b. Report of Quarterly Earnings on 10/25/11
- "MF Global Holdings Ltd.[, which] ... had its credit rating cut yesterday to the lowest investment grade, reported its largest-ever quarterly loss, sending shares down the most since March 2008.
- The net deficit was \$191.6 million, or \$1.16 a share, for the three months ended in September [2011] ...
- Excluding costs from restructuring, deferring tax asset valuations and retiring debt, the loss was 9 cents a share, missing the 5-cent average profit estimate of 11 analysts surveyed by Bloomberg." [Italics added.]

4. Final Week of MF Global

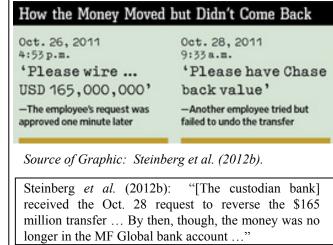
4.c. Performance of Short-Maturity European Bonds Meaningfully Declined Only AFTER MF Global's Credit Rating was Downgraded



4. Final Week of MF Global

4.d. Margin Calls, Customer Redemptions, Securities Sales, Slow Settlement of MF Global's Trades, and an Erroneous Wire Transfer

 During the last week of October, MF Global faced "demands from customers and other firms for cash ... [and] needed to sell billions of dollars in securities to raise the money.



- As the week progressed, MF
 Global executives came to believe the
 - Global executives came to believe that ... one of MF Global's primary bankers and a middleman moving that cash, was dragging its feet in forwarding the funds."
- "The delays contributed to a serious cash shortage at MF Global ..." during the firm's final week.

- 4. Final Week of MF Global
- 4.e. Difficulty in Tying Out MF Global Books and Status of Customer Segregated Funds
- "MF Global executives told the Commodity Futures Trading Commission and the Securities and Exchange Commission that the customer account also held the firm's cash and was used like a chequeing account to meet margin requests or fund operations.
- Companies are permitted to use their excess cash for firm purposes but they are prohibited from dipping into customer funds."

4. Final Week of MF Global

4.e. Difficulty in Tying Out MF Global Books and Status of Customer Segregated Funds

- On the final day of the firm's operation, in the early morning hours of Monday, October 31st, 2011, the Chief Financial Officer (CFO) of MF Global Inc. tried "to bring the segregated and secured accounts back to the appropriate levels."
- "Although [the firm was] ... able to move some funds into the FCM's segregated and secured accounts, a number of submitted transfers were not executed by the banks, and ... [the firm was] unable to move sufficient funds to make up for the shortfall." [Italics added.]

4. Final Week of MF Global

4.f. Attempted Deal to Sell Futures Business Collapses

- "Until the early morning hours of Monday [October 31st, 2011], it looked as though MF Global ... might survive."
- But there was a snag. "Some \$630 million of the funds MF Global held for its trading clients could not be located[;]" and MF Global officials did not (or could not) quickly provide a satisfactory explanation for this deficiency.
- "The discovery was a huge shock. ... It scuppered an intricate deal structured with MF Global's financial advisors ... that would have rescued the firm's operations, while allowing the holding company to fail ... all before the markets opened on Monday."

4. Final Week of MF Global

4.g. Decision by Regulators

- On October 31, the SEC and CFTC "announced 'that a SIPC [Securities Investor Protection Corporation]-led bankruptcy proceeding would be the safest and most prudent course of action to protect customer assets."
- "This [decision] baffled futures industry participants who felt it would delay customers being made whole.
- SIPA calls for the bankruptcy of dually registered futures commission merchants ... and broker/dealers ... to come under SIPC." [Italics added.]

4. Final Week of MF Global

4.h. Bankruptcy and Liquidation on 10/31/11

- "MF Global Holdings Ltd ... filed for bankruptcy protection as it seeks to reorganize after making bets on European sovereign debt.
- Its broker-dealer unit, MF Global Inc., faces liquidation.
- The firm listed debt of \$39.7 billion and assets of \$41 billion in Chapter 11 papers filed ... in U.S. Bankruptcy Court in Manhattan."

5. Ad Hoc Aftermath

5.a. Commodity Customer Coalition

- Until two Chicago futures traders proactively created the grassroots organization, the Commodity Customer Coalition [italicize], MF Global "customers say they were being ignored, even as their assets dwindled or were returned in a sloppy fashion."
- "In the space of just a few weeks, the group ... amassed more than 8,000 members ..." Before this coalition was formed, "there was absolutely nobody looking out for" customers.
- The coalition "earned the respect of MF Global's bankruptcy judge ... who ... directed the bankruptcy trustee ... to heed the concerns of [the] ...customers."

5. Ad Hoc Aftermath

- 5.b. Delayed Recognition of the Primacy of Customer Segregated Assets
- "... [I]t took the [MF Global Inc.] trustee more than five weeks to confirm the rules on customer funds in a bankruptcy ...
- 'SIPA, the Bankruptcy Code Commodity Broker Liquidation Provisions and the CFTC Part 190 Regulations require that the claims of commodity customers and securities customers must be satisfied in full before the claims of general creditors of the MF Global estate may be satisfied ...'"

5. Ad Hoc Aftermath

5.c. Size of Shortfall in Customer Funds [US]

- "The trustee for MF Global's [US] liquidation estimates the shortfall in customer funds related to U.S. trading to be roughly \$900 million, ...
- ... with an additional \$700 million* in funds tied to trading on non-U.S. exchanges," as of the end of February 2012.

^{*} In April 2012, "[U.S. CFTC Commissioner] Chilton [said in a CNBC television interview that the] ... U.K. says \$700M of MF money 'lost its identity.'" This statement could be the result of the confusion that can occur when customer collateral is rehypothecated multiple times by a broker that later becomes bankrupt.

5. Ad Hoc Aftermath

5.c. Size of Shortfall in Customer Funds [UK]

- In the UK, "KPMG [MF Global UK's administrator] has recovered about \$912 million, or 90 percent, of money held in protected customer accounts at banks, exchanges and clearinghouses ..." as of early February 2012.
- That said, as of 2/2/12, U.K. administrators only planned "to make ... a payment to British clients ... of 26 cents on the dollar."
- The administrators "said the figure was the most it could return ... because of 'continued uncertainty' as to who can claim a share of the ... client money pool."

5. Ad Hoc Aftermath

- 5.c. Size of Shortfall in Customer Funds [Canada]
- "None of MF Global's Canadian clients lost any money thanks to tighter regulations there."

5. Ad Hoc Aftermath

5.d. Where are the Missing Customer Funds?

Some Possibilities:

- The trustee will eventually find them once they go through MF Global books
- Management misappropriated the funds
- The funds were used to meet collateral calls from MF Global counterparties
- The funds were invested in risky securities and suffered significant losses

Source: Blanco (2011).

5. Ad Hoc Aftermath

5.e. Bankruptcy Status

- The holding company is being administered by one trustee, and the brokerage operation is being administered by another trustee.
- "It's likely that ... the trustee in charge of recovering customer funds, and ... the trustee in charge of recovering money for parent creditors, will dispute the ownership of certain assets ..."

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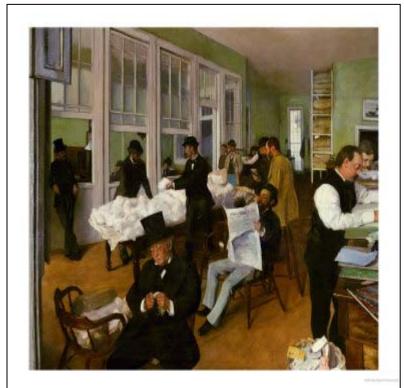
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