



Case Histories C-1, C-2 and C-3

Contingent Claims and their impact to Shareholder Value

Case History – Bank C-1

In the late 1980's and early 1990's all aspects of the prohibition of interstate banking had been lifted. There were many money center and super-regional banks that knew they had to get much larger fast or they would be acquired.

Predyct Analytics was retained by a counter-party and stakeholder to bank C-1 to identify the characteristics of banks that would be likely survivors.

Since most banks were being acquired with stock through pooling of interest combinations, it stood to reason that banks with the strongest stock multiples were likely to be the most successful during consolidation

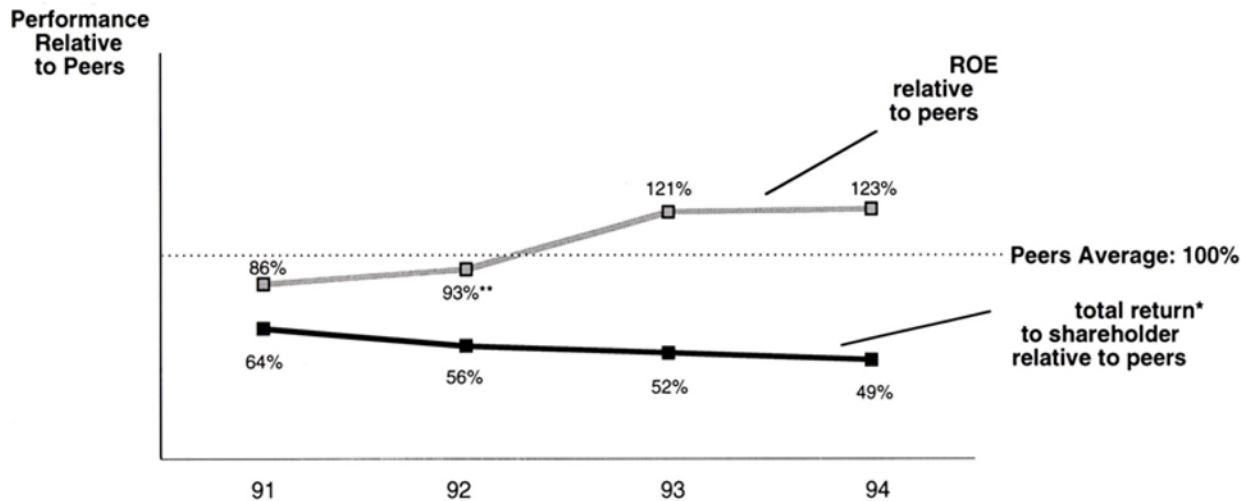
One bank perplexed us. Bank C-1 was a top quartile performer in most categories of financial and operating performance except one. C-1 was last among all banks in the study in terms of shareholder value performance.

The parties to this transaction are:

- **Bank C-1: Large super regional bank vying to become a surviving money center banking institution**
- **Firm X: A large private equity and hedge fund**
- **Bank Y: A bank that Bank C-1 elects to acquire with assistance from Firm X**
- **Bank Z: A second bank that C-1 elects to acquire**
- **Bank T: Ultimately purchases Bank C-1**

Background

While Company C-1 outperformed its peers in terms of most conventional financial performance metrics including ROE, the total return to its shareholders seriously lagged behind its peers'.



Peers: New England banks with more than \$10 billion in assets.

* total shareholder return to from 1994 to present is only 49% of the peers'. From 1993 to present, the return is 52% of the peers'.
** Before extraordinary items
Source: MEGA Oct 95

The Total Return is equal to the change in stock price plus dividends received divided by the starting stock price.

Background

Shareholder value is measured by the market price of a firm's stock over the book value of its assets (Market/Book). This ratio should have nearly perfect correlation to the measure of total return.

Corporations use various types of financial metrics to monitor corporate performance and predict shareholder value and total return.

Some combination of:

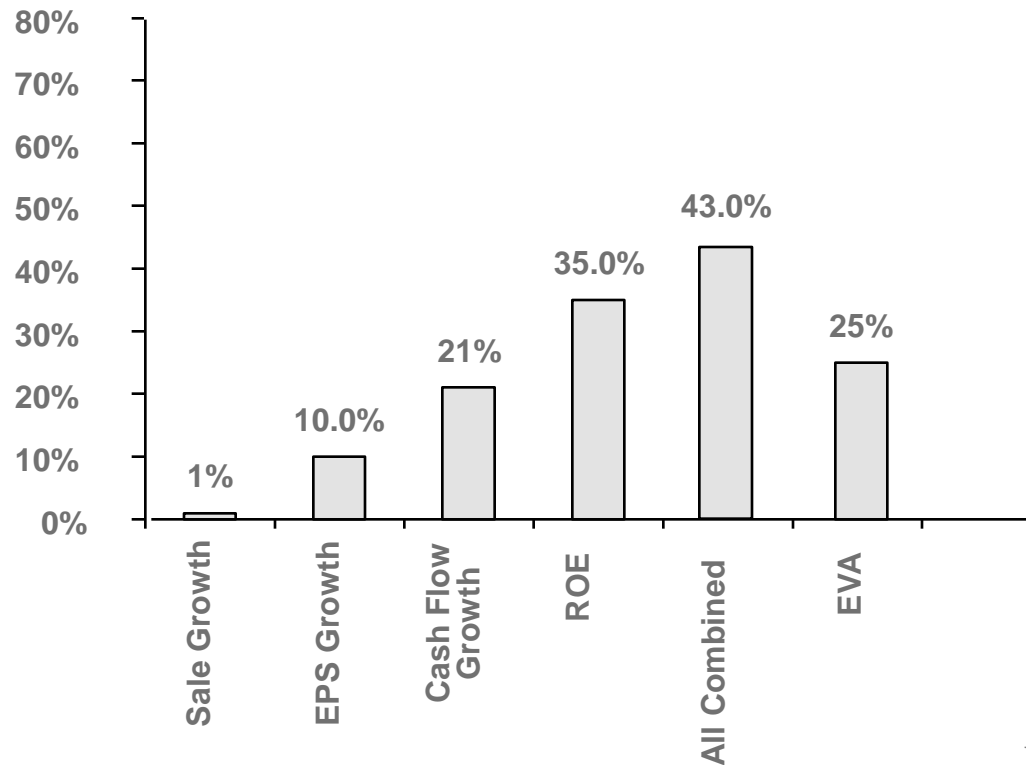
- **Return On Equity**
- **Sales Growth**
- **Growth of Operating Earnings**
- **Earnings per Share**

And all of these metrics combined.

Background

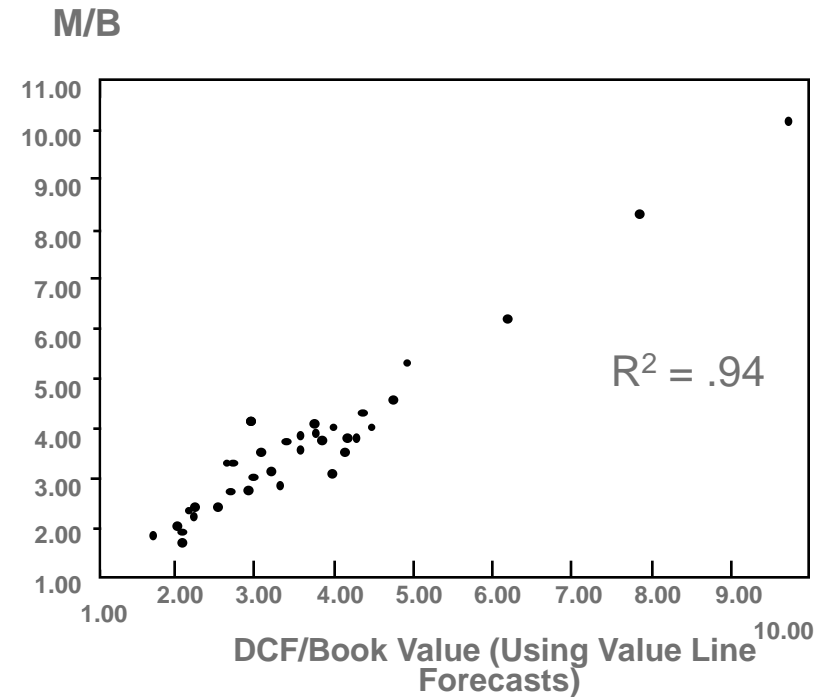
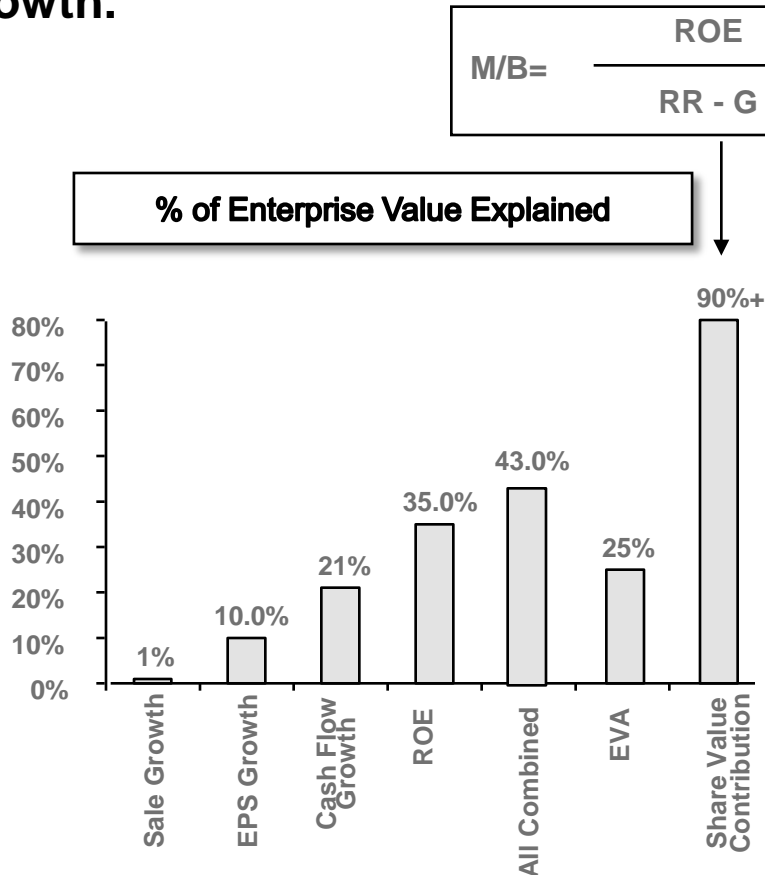
But these conventional measures of financial performance provide very little information about companies' shareholder value.

% of Enterprise Value Explained



Background

These conventional measures do not work well because they do not adjust the M/B (i.e. shareholder value = M/B) to reflect risk and market implied growth.



However, if a company's future cash flows are discounted by its market discount (RR) and growth is derived from its M/B, a far better estimate of market value is achieved – over 90% compared to 43% using conventional metrics.

Background

It was clear that Company C-1 had done something wrong, but what? Why wasn't C-1's strong financial and operating performance translating into share price performance? We discovered that C-1 had acquired a major bank (Bank Y) in 1991 with the help of a private equity firm (Firm X).

- **Bank Y was taken over by the Federal Reserve in 1991 as the FED had declared Bank Y to be insolvent.**
- **The Fed held an auction for the sale of Bank Y**
- **C-1 needed capital quickly to bid on this acquisition**
- **Firm X provided capital to C-1 by agreeing to purchase \$283 million of convertible preferred stock in Company C-1**

Background

Part of C-1's disappointing shareholder return can be attributed to its unusual strategic alliance with Firm X in 1991 when C-1 acquired Bank Y

- **C-1 granted Firm X the following securities for \$283 million:**
 - **6.5 million warrants with the exercise price of \$17.65, mature at 2001.**
 - **Non-divided preferred stock that can be converted to 16 million shares of C-1 common stocks or 50% of the appraised value of C-1's Massachusetts and Connecticut banking operations (formerly Bank Y).**
- **Eventual settlement between C-1 and Firm X in January 1996:**
 - **C-1 brought back the preferred stock granted to Firm X with 19.9 million shares of common stock (rather than 16 million shares as agreed in 1991), currently (1996) valued at \$836 million**
 - **At the time of Predyct's assessment, Firm X still owned 6.5 million warrants originally granted, currently valued at \$172 million**
 - **The total package is worth \$1,008 million**

If C-1 financed the Bank Y acquisition with common stock in 1991, the total cost would have been \$673 million in January 1996. C-1 would also have been subjected to substantially less business risk exposure.

Background

The conversion features in C-1's convertible preferred stock had some rather unusual privileges. The shares provided an option to Firm X that would provide Firm X with:

- 14% position in C-1
- The right to increase the position to 16% (another 6 million shares) for a conversion premium of \$116 million, or
- The right to convert their preferred shares to a 50% interest in C-1's Connecticut and Massachusetts banking operations (formerly Bank Y) whose value tripled to \$2 billion since the time of the acquisition

There are at least two important observations to make from this transaction:

1. The conversion premium of \$116 million provides an implicit strike price equal to \$19.33—a mere \$1.65 more than C-1's stock price
2. When ever an option can be converted into an ownership position in one of two things the option is called “complex” and it's value can increase significantly.

Background

Observations: C-1's offering of convertible preferred stock to Firm X was a private placement that was privately negotiated between the two parties:

- **C-1 could have made this a public offering, but:**
 - **Needed capital in a hurry**
 - **Wanted privacy**
- **Had this been a public offering, the financial markets may have priced the offering differently than what C-1 and Firm X agreed to:**
 - **The public markets probably could not have priced options this complex, and apparently, neither could Bank C-1**
 - **Using the most conservative assumptions, we calculated that C-1 granted Firm X \$214 million of stock options at no charge. The options may have been worth more than \$400 million.**

Background

Although no one could have predicted the outcomes of this alliance in 1991, Contingent Claims Analysis (CCA) could have been used to calculate the economic cost of the transaction to C-1 without the knowledge of subsequent events.

6.5 million warrants	+	16 million stock future	-	Dividend saved	+	Complex option of 50% of Bank Y*	= \$424 million***
\$29 million		\$283 million		(\$61 million)		\$173 million	
							<u>Cost to Firm X = \$283 million</u>
							Net option value = \$141 million

Under conservative assumptions*, the net embedded option value that C-1 gave up is \$141 million. This represents 5% of the market value of C-1 in 1991.

* Assume that C-1's stock volatility is 30%, the risk free rate is 7%. The correlation between the former Bank Y and the rest of C-1 is assumed to be zero.

** Complex option could be exercised into a 50% interest in the former Bank Y (characterized as C-1's Conn. and Mass. Banking operations).

Background

In addition, the net embedded option value for Firm X was dramatically increased from \$141 million to \$278 million when C-1 acquired another bank--Bank Z (Because Bank Z was designated to be a part of C-1's CT and MA banking operations to which the complex option granted Firm X the right to convert to either C-1 or to its CT and MA banking operations)

- After C-1 acquired Bank Z, securities law and banking regulations made it necessary for C-1 to buy back firm X's stake in the former Bank Y. This had to be accomplished as a precondition of merging Bank Z's operations with those of C-1
- Once C-1 was required to buy back the preferred shares granted to Firm X, the preferred shares are transformed from "stock futures" to "stock options". The value of these instruments was thus enhanced from \$222 million to \$359 million (\$283 million + \$77 million)

6.5 million warrants	+	Face value of Preferred	+	Stock option value	+	Complex option of 50% of Bank Y*	= \$561 million*
\$29 million		\$283 million		\$77 million		\$173 million	
						<u>Cost to Firm X = \$283 million</u>	
						Net option value = \$278 million	

The fact that Firm X is benefitted by Bank Z's acquisition may be a major reason why C-1's share price decreased after the acquisition's announcement.

Background

C-1's performance from 1989 to 1994.

- **Asset size increased from \$32 billion to \$80 billion – 150% improvement**
- **Earnings increased from \$371 million to \$632 million – 65% improvement**
- **Market capitalization nearly doubled from \$2.89 billion to \$5.72 billion**

However, C-1's total return for three years post Firm X financing was 47% compared to its peer group of 81%

The original \$283 million of Firm X's preferred stake in C-1 had now reached an estimated value of \$1 billion plus C-1 had to payoff Firm X – nearly 20% of C-1's value at that time

Many bank analysts attributed C-1's ultimate sale to Bank T on 10/27/2003 to C-1's having stumbled in its deal with Firm X.

Background

This explains that the conventional measures of financial performance rarely explain share price performance very well. But there is another even more insidious intervention that obstructs conventional financial metrics from explaining share price performance and is almost impossible to detect—Contingent Claims (CC).

- **Contingent claims (CC) are any security or agreement whose value depends on another security (or underlying) or some benchmark, such as a particular interest rate or value of a financial index at a specified time.**
- **Types of CC**
 - **Conventional CC: Call and put options, credit derivatives, almost any type of derivative**
 - **Unconventional CC: Employment contracts, supply contracts, Rights (of virtually any kind), Director and Officer suits, Real Options, commitments embedded in financial agreements**

Detection, risk management and valuation of CC may be one of the most complex forms of financial forensic analysis in the determination of D&O (Director And Officer) damage suits. This form of analysis is known as Contingent Claim Analysis (CCA)

Case History: C-2

The key question here is why C-1's management did not charge Firm X for the options (i.e., conversion privileges)? Before you think that C-1's oversight is a unique or one-off situation, consider the case history of C-2 Insurance.

- **C-2 was a very respected old line “A” rated mutual insurance company that elected to go public in 1998**
- **Predyct was retained by AM Best to assess its “A” rating of C-2's IPO structure in year January 1999.**
- **We advised AM Best that C-2's IPO structure had doomed C-2 and its IPO investors from the day it went public by creating an IPO structure that diluted C-2 of in excess of \$700 million in shareholder value—nearly half of C-2's book value.**
- **This assessment proved correct: four years later private equity investors brought a suit against C-2's management team for 1) operating non-performance, 2) intent to sell C-2 for 75% of book value (which it said was highly under valued), 3) and self enrichment for self directed bonuses upon the company sale.**
- **Predyct's analysis revealed (before and after the IPO) that C-2's failure was not due to management's operating” non-performance but due to its allowance of a highly dilutive IPO structure.**

The parties to this transaction are:

- **Insurance company C-2. A very old and respected “A” rated mutual insurance company**
- **Firm J: An investment bank chosen by C-2 to take it public**
- **AM Best: The leading domestic rating agency for the insurance industry**

Background

C-2 was more leveraged than its peers. However, based on the first three quarters of 1998 results, C-2 is as profitable as its peers even after adjusting for its capital.

	\$1,529M	\$2,171M
Protection	\$1230	\$1,100 Closed Block
		\$750
Accumulation	\$204	\$226
Others	\$95	\$95
	C-2's Book Equity	Required Book Equity*

This suggests that C-2's management team, contrary to the claims of the subsequent lawsuit, had a superior operating performance to its peer group prior to the IPO, yet it was trading at only 56% of its peer group average one year after its IPO. What did investors see?

	Peers' ROE	C-2 ROE	C-2 Ins Risk Adj** ROE
Protection	7.4%	12.4%	8.2%
Accumulation	10.0%	28.4%	25.7%

Note: All financial data are from C-2's 10Q of 1998

* GAAP equity required to maintain the same leverage as that of its peers

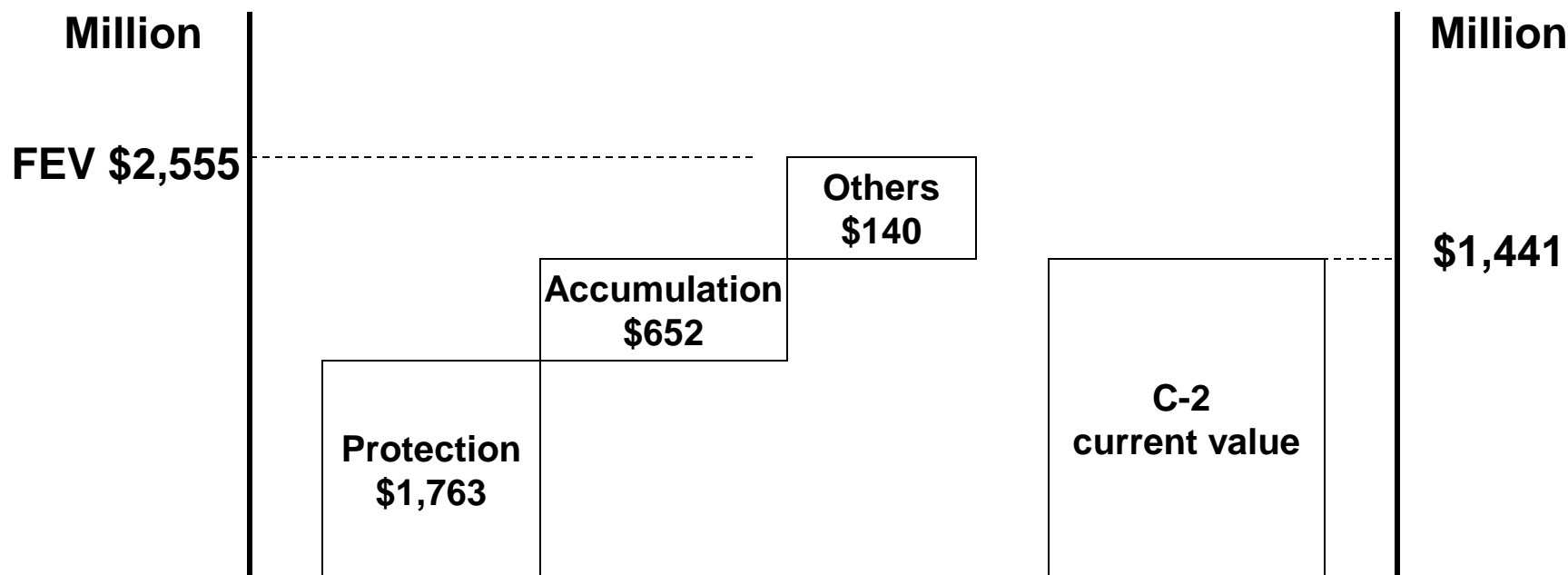
** ROE if C-2 has the same capital ratio as its peers, based on GAAP

Background

C-2 Insurance valuation overview

Full Economic Value: \$2,555M

Current Market Value: \$1,441M



Full Economic Value (FEV) represents the value that C-2 would have if it performed at a level equal to the average of its peers.

Background

While many factors may contribute to the difference between C-2's full economic value and its current value, a few stand out.

As a part of C-2's recapitalization:

- **C-2 gave its investment banker (Firm J) an option worth \$80 million for only \$10 million**
- **A closed block was required by regulators that will cost C-2's shareholders around \$331 million***
- **C-2's required return (cost of capital) is much higher than its peers due to its capital inadequacy. This cost C-2's shareholders around \$300 million.**

*A closed block is a group of C-2's assets that have to be set aside (ring fenced) for the exclusive protection of policyholders who held policies in C-2 prior the time of the IPO.

Background

C-2 provided Firm J with an option worth \$80 million

- **C-2 issued a 15 year \$115 million 9% surplus note to Firm J**
- **In connection with this offering, C-2 also sold to Firm J the warrants to buy 7.7% of C-2's common stock at a strike price of \$25**
- **Assume an annual volatility of C-2's common stock of 30% and a risk free of 6.5%, the value of these warrants is \$80 million.**

Firm J assisted C-2 in going public by providing this capital, but at what cost?

Background

The closed block will cost C-2's shareholders around \$331 million

- **C-2 has established a closed Block with \$6 billion in assets and \$7.2 billion in liabilities**
- **C-2's shareholders are subject to a capital call by the Closed Block policyholders if the assets of the closed block are insufficient to satisfy claims by the old policyholders**
- **If the assets in the Closed Block are more than adequate to satisfy the liabilities, the residual goes to the Closed Block policyholders**
- **C-2's shareholders are effectively granting a call option to the Closed Block policyholders**
- **Due to the Close Block, C-2's value is reduced by \$331 million, which is the implicit value of this call option**

Background

C-2's required return is much higher than its peers due to its capital inadequacy.

- **C-2 would need \$2,171 million of book capital to be as leveraged as its peers. At the time of its IPO, C-2 had \$1,529 million of capital**
- **This estimation has not taken the Closed Block liabilities into account**
- **Given that C-2's stock is trading below book value, raising more equity capital would be expensive and diluting.**
- **We estimate that C-2's capital inadequacy destroys about \$300 million of its shareholder value***

* *Lower capital raises the firm's Ke and puts downward pressure on its market value*

Background

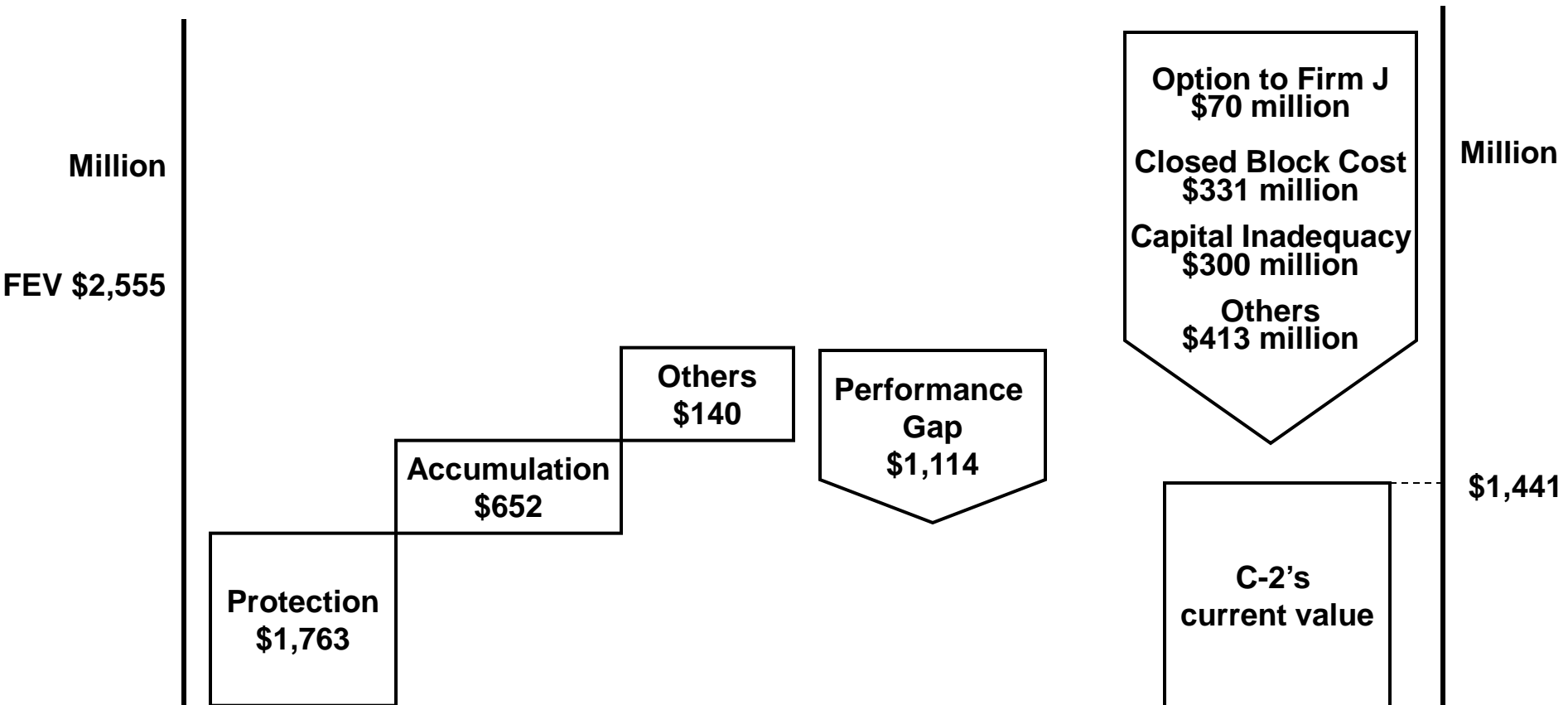
In 1999, Predyct Analytics concluded that it would be very difficult for C-2 to create any shareholder value going forward due to:

- **Future dilution that would result from \$80 million in future value being given to Firm J**
- **The value of the closed block (which may have been unavoidable) that resulted in:**
 - **C-2'S under-capitalization which drove up its cost of capital (K_e) and caused ratings pressure**
- **C-2 was left with no capital to invest in the future growth of its operations**

Background

C-2 Performance Gap

$$\text{Full Economic Value: } \$2,555\text{M} = \text{Current Market Value: } \$1,441\text{M} + \text{Performance Gap: } \$1,114\text{M}$$



Background

C-2's Share Price Performance Relative To Its Peers Between 12/98 and 2/04

Company Name	Type	Ticker	Dec-98	Feb-04		Price Change	% Change
The C-2 Group Inc		C-2	\$29.00	\$30.85	Up	\$1.85	6.3%
Kansas City Life Insurance Co	Protection	KCLI	\$34.07	\$43.55	Up	\$9.48	27.8%
National Western Life Insurance Co	Protection	NWLIA	\$117.50	\$151.46	Up	\$33.96	28.9%
Nationwide Financial Services Inc	Accumulation	NFS	\$47.74	\$38.56	Down	-\$9.18	19.2%
The Hartford Financial Services Group Inc	Accumulation	HIG	\$48.63	\$66.18	Up	\$17.55	36.1%
Protective Life Corp	Accumulation	PL	\$36.08	\$37.18	Up	\$1.10	3.0%
Torchmark Corp	Accumulation	TMK	\$32.95	\$51.57	Up	\$18.62	56.5%

Average Change for Protection \$11.52

Average Change for Accumulation 19.1%

Average Change for All 20%

C-2 was 5th of 7 peers in terms of price appreciation with an increase of 6.3% compared to an average of 20%

Background

The question arises in these two cases (C-1 and C-2): Why didn't the parties involved in this transaction:

- **company management and board**
- **companies issuing the Fairness Opinions**
- **rating agencies**
- **Investors**

Assess the real costs of these transactions?

Background

In these situations there are several reasons why corporate decision makers unknowingly become patsies.

- **The options given away were not traded so there was imperfect knowledge about their value**
- **No immediate balance sheet or P&L (Profit & Loss) impact since the options were not traded**
- **No mark-to-market MTM (mark-to-market) requirements at that time for Class II assets (These instruments would be Class II)**
- **No Fair Value accounting at that time**
- **Blame for non performance is very difficult to trace or identify with non-trading options that do not have MTM requirements**
- **Privately placed and/or negotiated contracts or financial offerings are typically not handled by option specialists**

Financial decision makers have not generally put a value on non-trading options or made the connection between these instruments and their companies shareholder value.

Background

There should not be too much confusion about how stock options can dilute shareholder value when the options are traded on companies' surplus (however inadvertently) by management.

- **Options traded on regulated exchanges are generally priced efficiently by markets and do not affect corporation value – only affects the value of the option traders**

- **Options can dilute firm value when:**
 - **Privately negotiated in private placements between the company and its counterparties – such as C-1 and C-2**
 - **Hidden in corporate agreements**
 - **Granted as executive pay disproportionately to performance**

Dilution of corporate value will not occur if the options are priced and risk managed appropriately

Background

Decision makers don't always make the connection between their company's shareholder value and options that don't appear to impact cash flow .

- Options (CC of any type) bought, sold or given away by company decisions makers (traded or not) represent a potential source of future dilution and impact to company value.

C-1 Bank 1991		C-1 Bank 1996	
Assets	Liabilities	Assets	Liabilities
\$32 billion	\$29 billion	\$80 billion	\$74 billion
	\$ 3 billion*MV		\$ 6 billion*MV
\$32 billion	\$32 billion	\$80 billion	\$80 billion

102 million shares** @ 59/share = \$6B

Less \$1 billion payout to FirmX

New share price = \$48/share

C-1's market value of \$6 billion was before the dilution created by the free options given to Firm X

* 96 million shares at \$30 per share

** C-1 provided Firm X with warrants for 6 million shares

Background

The previous two examples focused on non-traded optioned instruments where a financial instrument was serving as the underlying asset. Now we transition to an option where there is a contract serving as the underlying rather than a financial instrument.

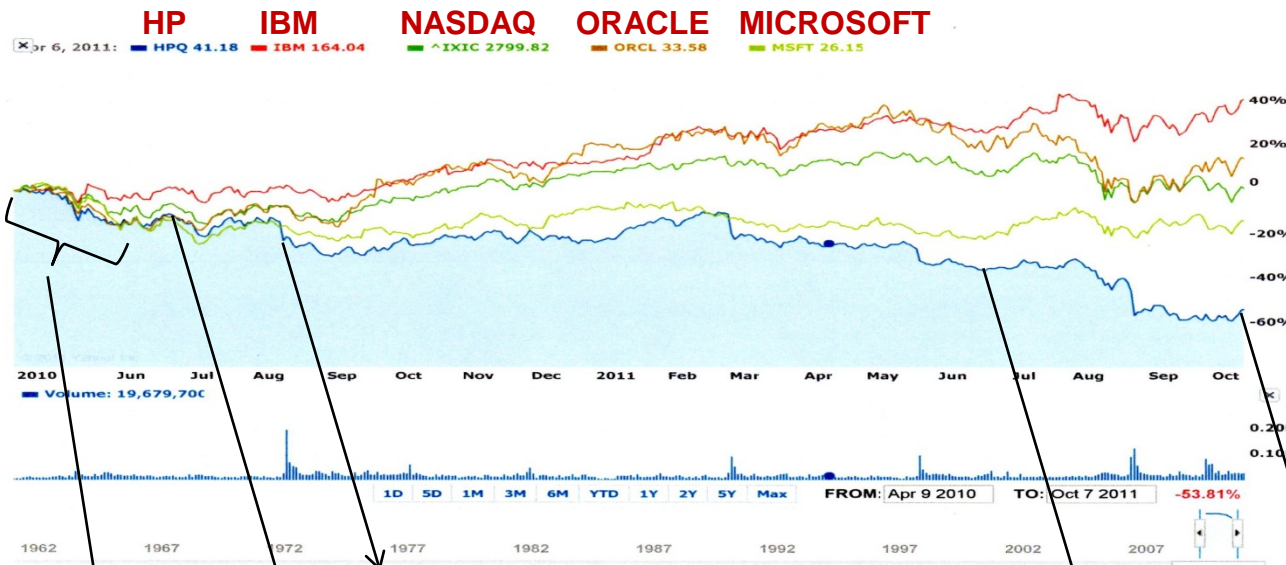
Case 3 – Hewlett Packard

- **On August 8, 2010 HP announced that it had fired its CEO, Mark Hurd. On that day HP lost \$10 billion in market value**
- **Upon hearing that HP had not secured a non-compete agreement as part of Hurd's employment contract, securities analysts and investors expressed grave concern that Hurd could now go to work for an HP competitor conveying all of HP's most sensitive secrets and Intellectual Property (IP)**

Concurrently, there were rumors that Hurd was being offered the role of president at Oracle - HP's most voracious competitor

Background

While Predyct has not conducted a full valuation of HP, one observes from these total return figures that HP had matched the performance of its competitors prior to Hurd's firing but fell precipitously behind immediately after.



Total Return			
Company	6/29/06 3/29/10	6/29/10 6/29/11	6/29/10 10/25/11
HP	68%	16.9%	-20%
IBM	68%	120%	140%
ORCL	68%	120%	120%
NASD	10%	30%	20%
MSFT	30%	26%	27%

Internal discussion about need to launch investigation of Hurd

Firing of Hurd announced by HP 8/7/2010

6/29/2011

10/25/2011

June 29, 2010: Official internal investigation of Hurd launched

HP's failure to obtain a non compete agreement from Hurd could well explain a loss of up to \$20 billion

Background

Employment contracts have all the analogue features of a standard option contract. If we can value the option features in the employment contract than we can also place a value on HP's failure to obtain a non-compete agreement from Hurd.

Option Analogues	Stock Option	Employment contract
Volatility	Volatility of stock price	Volatility of the value of the employment contract
Strike Price	The price at which the option can be exercised	The metric that allows the employee to receive a bonus
Time to Maturity	Time at which the option expires	Maturity of the employment contract
Riskless Rate of Interest	Discount rate applied to the option	Discount rate applied to the employment contract
Underlying	Value of the financial instrument	Value of the employment contract

Background

Options traded on the Chicago Board of Options Exchange (CBOE) are subject to very strict regulations that protect both the buyers and sellers. Non financial contractual-like options (such as employment contracts) are unregulated and the rule is Caveat Emptor.

- **An employment contract without a non-compete clause is equivalent to a traded option on the CBOE not being provided with any one of the following features:**
 - **Counterparty credit protection**
 - **Liquidity rules for optioned stocks**
 - **Down-trick rules, etc.**

The absence of any one of these protections would dramatically increase the price of a standard option

Option specialists are required to be able to identify option features embedded in non financial contracts. If financial specialists (C-1 and C-2) cannot identify option features attached to actual financial instruments what is the chance that non financial specialists can identify option features in non financial contracts?

Background

Let's review what we have covered up to this point.

- **A Contingent Claim (CC) is the value of any claim that is dependant on the value of another security or asset in a future event.**
- **Contingent Claim Analysis (CCA) is the financial science of identifying, pricing, and risk managing contingent claims that often go unnoticed by even sophisticated financial professionals.**
- **CC are most widely known as financial options . But most financial options are traded on the CBOE where there are highly defined regulations or on the OTC where option specialists knowingly ply their trade and expertise in an unregulated market.**
- **Unlike financial options on the CBOE or OTC, CC also apply to all of the contingent claims that show up in non standard agreements of all kinds.**
- **CC can attach to tangible assets (TA) and intangible assets (IA), financial instruments or even to synthetic contracts such as employment contracts, or to any agreement that assigns rights or penalties based on contingent events.**
- **CC may be completely invisible to firms' balance sheets particularly when attached to synthetic assets.**
- **Like stealth, CC can dilute the wealth of a company without the cause ever being detected.**