
UNDERSTANDING THE FINANCIAL CRISIS: THE UNINTENDED CONSEQUENCES OF MARK-TO- MARKET ACCOUNTING

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ABSTRACT

This opinion piece addresses the unintended consequences induced on the financial system due to the adoption and November 15, 2007 implementation of FAS #157 “Fair Value Measurement” more commonly known as the mark-to-market reporting standard. Using basic accounting and valuation concepts, the incentives of the financial institution are explored and the need for regulation via capital requirements is demonstrated. The mark-to-market concept is presented in a manner that is more understandable to the general reader, but also provides insight into one reason why even strong financial institutions have faced liquidity and solvency issues in recent months.

HOW MARK-TO-MARKET AND CAPITAL REQUIREMENTS FUELED THE FIRE

The reasons behind the recent troubles in global financial institutions are many, but they all stem from perfectly rational reactions to the incentives of the economic and regulatory system. One regulatory change in particular, FAS #157 “Fair Value Measurement”, commonly understood as the requirement to mark certain financial instruments to market price, has been widely blamed as one catalyst in the recent financial crisis. In fact, former FDIC Chair William Issac recently stated “The SEC has destroyed \$500 Billion of bank capital by its senseless marking to market of these assets for which there is no marking to market, and that has destroyed \$5 trillion of bank lending.”¹ In order to better understand some of the issues faced by financial institutions such as Washington Mutual, Fannie Mae, AIG and Lehman, it is helpful to go back to basics.

To begin, let’s discuss some accounting and performance concepts. The balance sheet identity says that Assets = Liabilities + Owner’s Equity ($A=L+OE$). A typical financial institution balance sheet takes the following broad form, see Figure 1:

¹ Former FDIC Chair Blames SEC for Credit Crunch, CNBC.com, October 9, 2008.

FIGURE 1: A SIMPLIFIED FINANCIAL INSTITUTION BALANCE SHEET

Assets	Liabilities
Long-term Assets (Loans, Mortgages, Bonds, Stocks)	Short-term Liabilities (Deposits, CDs, Commercial Paper) Long-Term Bonds
	<u>Owners Equity</u> Capital

The basic business of a financial institution is simple: borrow low, lend/invest high. The difference between the cost of borrowing and the returns from lending less expenses is the fundamental source of profits. If the financial institution (FI) is particularly good at borrowing low and lending high, their incentive is to do as much of this as possible in order to drive net income, and thus return on equity, ever higher. In other words, FIs have every incentive to increase leverage (debt relative to equity) to higher and higher levels. Bank regulators and market participants recognize this incentive and check it by requiring the FI to put its own skin in the game. Thus, FIs must maintain certain capital ratios (capital as a percentage of assets or liabilities) and hold cash reserves in order to be considered sound and solvent. Capital requirements have always been an important part of both the market and regulatory monitoring of financial institution health. The Bank for International Settlements specifies capital requirements as the “First Pillar” of bank health and reiterated in the 2004 Basle II accord that banks should maintain a minimum capital of at least 8% of risk adjusted assets. The U.S. Federal Reserve further strengthens the Basle II requirements by imposing additional capital requirements related to leverage.²

Recently, new regulations were put in place requiring many FIs to value the assets on their balance sheets at market values – a price at which they could sell the asset immediately – known as mark-to-market pricing. FAS #157, “Fair Value Measurement”, implemented for financial institutions with fiscal years beginning after November, 2007, was well intended and completely logical. The idea was to prevent certain firms from “hiding” the true value of financial assets in a post Enron, increasingly complex marketplace. However, combined with capital requirements and adverse market conditions, mark-to-market pricing requirements resulted in unintended consequences.

Imagine that you own a rental property purchased for \$100,000. You have owned it for several years, have no intention of selling it and have a long-term tenant with an excellent payment history. After expenses, you clear 10% cash flow on this investment. Like any other real estate investment you put 10% equity (capital) or \$10,000 down and borrowed 90% or \$90,000 of the value. You are now a financial institution with 10:1 leverage and no cash reserve. Now suppose the bank makes the terms of your loan

² Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework, The Bank for International Settlements, June, 2004, <http://www.bis.org/publ/bcbs107.htm>.

subject to marking the asset to market and requires you to maintain balance sheet capital of 10%. At steady or rising prices you are fine. By the balance sheet identity $A=L+OE$ and if A goes up, and L is steady, OE must increase. But there is a downside. A house three doors down goes into foreclosure and sells for \$80,000. The bank requires you to mark your asset down to \$80,000. Again, $A=L+OE$, but this time the asset value falls. Since you still owe \$90,000, liabilities are unchanged and in order to make your balance sheet balance, your capital account falls to -10,000. You are technically insolvent (See Figure 2, rows a and b).

FIGURE 2: ASSETS = LIABILITIES + CAPITAL

	Assets (House)	=	Liabilities (Mortgage)	+	Capital
a) Original Purchase	\$100,000	=	\$90,000	+	\$10,000
b) Mark-to-Market	\$ 80,000	=	\$90,000	+	-\$10,000
c) Raise Capital	House \$80,000 Cash \$18,000	=	\$90,000	+	\$ 8,000

The bank requires you to raise \$18,000 in capital to make up the -10,000 deficit and meet the 10% or \$8,000 capital requirement at the new asset value (Figure 2, panel c). If not, they will call the loan. You have two choices, raise capital and hence cash reserves or if you are unable, sell the asset into an already depressed market and pay off the loan. If other rental property owners are also facing mark-to-market driven capital shortages due to weakening housing prices, one can see how this process can become circular and disastrous – depressed prices lead to capital calls, which lead to asset sales, which depress prices further and so on. Note that absolutely nothing has fundamentally changed in the long term value of the asset as far as you are concerned. Your tenant is still paying, you are covering expenses, you are cash flow positive, you are making a profit, and you had no intention to sell the property.

Although this is a simplistic example, this concept demonstrates one of the problems faced by many of the nation's financial institutions in recent months. A myriad of factors led to the expansion of mortgage credit to increasingly risky borrowers. As long as housing prices were rising the financial institutions holding these loans and mortgage backed securities had strong balance sheets and sufficient capital reserves. However, when prices stopped rising and risky borrowers began to default, the cycle began for financial institutions that were forced to mark down even strong performing, high credit mortgages and mortgage backed securities. To be sure, bank balance sheets have become incredibly complex and there are many good reasons behind mark-to-market accounting rules, but the confluence of market forces, new financial reporting standards, and the natural structure of the financial system resulted in added fuel to the fire.