Original Article

How to 'mark-to-market' when there is no market

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ABSTRACT At the center of the global financial crisis of 2007–2008 was the collapse of American International Group, brought on by extensive unhedged positions in derivatives, such as credit default swaps, and possibly exacerbated by mark-to-market accounting rules. Even though these rules generally produce the most realistic valuations of derivatives, a heated debate broke out over their application in a dislocated market. The foremost concern was that forcing financial institutions to mark down assets to their current market prices actually causes further declines. Regulators largely dismissed such concerns, but acknowledged that the existing standards could use additional clarification and modification. Many scholarly studies have since concurred that the rules should not be replaced, but suggest that additional measures should be taken to avoid their potential procyclical effects.

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INTRODUCTION

And it came to pass at the end of two full years, that Pharaoh dreamed: and, behold, he stood by the river. And, behold, there came up out of the river seven well favoured kine and fatfleshed; and they fed in a meadow. And, behold, seven other kine came up after them out of the river, ill favoured and leanfleshed; and stood by the other kine upon the brink of the river. And the ill favoured and leanfleshed kine did eat

up the seven well favoured and fat kine. So Pharaoh awoke.¹

Way back in 1994, the US General Accounting Office (GAO) issued a visionary report entitled 'Financial Derivatives: Actions Needed to Protect the Financial System', warning that derivatives activities were rapidly expanding and increasingly affected by the globalization of commerce and financial markets. 'This combination of global involvement, concentration, and linkages means that the

sudden failure or abrupt withdrawal from trading of any of these large dealers could cause liquidity problems in the markets and could also pose risks to the others, including federally insured banks and the financial system as a whole'. The GAO found that no comprehensive industry or federal regulatory requirements existed to ensure that US over-the-counter (OTC) derivatives dealers followed good risk management practices. Moreover, the accounting standards for derivatives were incomplete, inconsistent and had not kept pace with business practices, increasing the likelihood that financial reports would not fairly represent the substance and risk of these complex activities. Anticipating that the government would likely intervene to keep the financial system functioning in cases of severe financial distress, the report foretold that 'in some cases intervention has and could result in industry loans or a financial bailout paid for by taxpayers'.²

Joseph had recognized that Pharaoh's dreams not only alluded to the coming famine, but also revealed how to thwart potential disaster by preparing in advance. Despite all the warnings and recommendations, though, the government's failure over many years to take the robust actions needed to protect the financial system culminated with the global financial crisis of 2007–2008. Some supposedly 'procyclical' rules and regulations have even been blamed for perpetuating and intensifying the recent market downturn. One that has come under particularly harsh attack, this article explores the debatable extent to which the mark-to-market (MTM) accounting method used to value credit default swaps (CDSs) and other derivatives may have accelerated the downfall of financial institutions such as American International Group (AIG), and reflects on how regulators and scholars have reacted to this controversy.

THE CRISIS

Against an ominous backdrop of several major financial institutions imploding during the financial crisis, this section first chronicles the events leading up to the particular liquidity crisis at AIG and the ensuing government bailout, then describes CDSs and how they caused much of the turmoil at AIG, and finally looks at the MTM accounting rules that some have blamed for deepening AIG's troubles.

American International Group

American International Group, Inc., an American insurance corporation listed on the Dow Jones Industrial Average from 2004 to 2008, was one of the largest public companies in the world. By the end of 2007, AIG had assets of approximately US\$1 trillion, \$110 billion in annual revenues, 74 million customers, and 116 000 employees in 130 countries and jurisdictions. Nevertheless, less than a year later, AIG found itself on the brink of failure and in need of emergency government assistance. AIG Financial Products, a subsidiary of AIG engaging in a variety of financial transactions, had sold CDSs to other financial institutions to protect against the default of certain securities. As the US residential mortgage market deteriorated, the valuation of these securities declined severely. AIG reported \$26.2 billion in unrealized losses from CDSs by the second quarter of 2008 and had to post \$16.5 billion in collateral on its CDS portfolio. In September 2008, credit rating agencies further downgraded AIG because of reduced flexibility in meeting additional collateral needs and concerns over increasing residential mortgage-related losses. This triggered additional collateral calls and cash requirements in excess of

\$20 billion and AIG suddenly faced an acute liquidity crisis.³

The Federal Reserve Bank of New York was immediately authorized to create a credit-liquidity facility from which AIG could draw up to \$85 billion. The credit facility carried a rate of LIBOR plus 8.5 per cent and entitled the US Treasury to a 79.9 per cent stake in AIG through preferred stock. AIG's board of directors promptly approved the loan transaction and drew down \$28 billion of the credit facility. The government established an additional \$37.8 billion credit facility in October 2008 and shortly thereafter granted AIG a lower interest rate and three extra years to pay back the loans.⁴ The rescue package soon swelled to \$150 billion, including \$60 billion in loans, a \$40 billion capital investment under the Emergency Economic Stabilization Act's Troubled Asset Relief Program,⁵ and about \$50 billion to buy mortgage-linked assets owned by AIG or guaranteed by the insurer through CDSs.⁶

Although the government's equity injection significantly relieved AIG's liquidity pressures, the world economy in general and the financial industry in particular continued to falter as asset valuations continued to decline, causing AIG heavy losses through the end of the year. In March 2009, AIG reported a fourth quarter loss of \$61.7 billion – the largest quarterly loss in corporate history – topping off five consecutive quarters of losses totaling well over \$100 billion.⁷ The announcement impacted trading around the world as the Dow Jones Industrial Average fell below 7000 points to a 12-year low. The news of the loss came the day after the government provided a new 5-year equity capital facility, which would allow AIG to raise an additional \$30 billion on top of the original \$150 billion. The Treasury Department and Federal Reserve

cautioned that the demise of AIG and potentially disastrous losses to the US and global economies posed a systemic risk, and they would therefore not allow AIG to fail.⁸

Credit Default Swaps

Before the sweeping regulatory reform of swaps markets mandated by the Dodd–Frank Wall Street Reform and Consumer Protection Act signed into law in July 2010,⁹ CDSs were privately negotiated and traded OTC derivative contracts between two counterparties relating to an underlying credit asset, such as a loan or bond. The buyer of protection agreed to pay premiums to a seller of protection over a set period of time and, in return, the seller agreed to pay the buyer an amount of loss created by a 'credit event' – typically bankruptcy, restructuring or default. Although CDSs are similar to insurance in that the buyer pays a premium and receives a sum of money if a specified event occurs, there are some important differences. First, the buyer of protection in a CDS is not required to own the named borrower's debt or be otherwise exposed to the borrower's default. To purchase insurance, on the other hand, the insured is generally expected to have an insurable interest. In addition, insurance companies are regulated by the government with reserve requirements, statutory limits and routine examinations to ensure that there is sufficient capital to cover potential claims, whereas CDSs were private bets in which the seller was not legally required to maintain any reserves to pay off buyers.¹⁰

As with other financial derivatives, investors can use CDSs for hedging and speculation. Corporate bondholders often hedge against the risk of default by entering into a CDS as the

buyer of protection so that if the underlying bond defaults the proceeds from the CDS will offset the losses. This may be preferable to just selling the bond if the holder wants to reduce exposure and not eliminate it, eliminate exposure for a certain period of time or avoid taking a tax hit.¹¹ CDSs also enable investors to speculate on changes in spreads of single entities or market indices. An investor with a positive view of a company's credit can sell protection and collect the periodic payments rather than accumulating the company's bonds, while an investor with a negative view of a company can buy protection for a relatively small periodic fee and collect a large sum if the company defaults on its bonds or has some other credit event. Or, an investor might believe that an entity's CDS spreads are either too high or too low relative to its bond yields and attempt to profit by entering into certain CDS transactions. A CDS can also be used to attain maturity exposures that are otherwise unavailable, access credit risk when the supply of bonds is limited, or invest in foreign credit assets without currency risk.¹²

As CDSs were traded over the counter rather than on an exchange, both the buyer and seller entering into a privately negotiated CDS took on substantial risk. To minimize the risk of default, parties to a CDS typically posted collateral, which was then adjusted as the market value of their positions changed. This in turn gave rise to liquidity risk, as there could be margin calls requiring the posting of additional collateral. In addition, contracts often got traded so much that it was hard to know who stood at the other end of a transaction and whether that party had the financial strength to abide by the contract's provisions.¹³ Finally, aside from these counterparty risks, there was also systemic risk – the concern that systemically important

institutions may suffer devastating losses on large unhedged CDS positions. Given the massive unregulated CDS market at the time, the failure of one important institution could destabilize the entire financial system by inflicting substantial losses on many trading partners simultaneously. Many feared that AIG's inability to pay out on CDSs would lead to the unraveling of complex interlinked chains of CDS transactions between financial institutions and create a 'domino effect' of losses.¹⁴

Mark-to-market

'MTM', as applied to fair value accounting, is a way to measure assets and liabilities on a company's financial statements by assigning a value to a position held in a financial instrument on the basis of its current fair market price. MTM has been increasing steadily in recent years as a part of US Generally Accepted Accounting Principles (GAAP) in response to investor demand for relevant and timely financial statements that aid in making better informed decisions. MTM first developed among traders on futures exchanges who would deposit money with the exchange as margin to protect the exchange against loss, and at the end of every trading day would mark the contract to its current fair market value. OTC derivatives, however, are contracts between buyers and sellers that are not traded on exchanges. Their market prices are not established by any active, regulated market trading and are thus not objectively determined or readily available. During their early development, OTC derivatives were therefore not marked to market frequently, but evaluated on a quarterly or annual basis when gains or losses would be determined and payments exchanged.¹⁵

The Financial Accounting Standards Board (FASB) promulgated some key statements on fair value accounting for financial instruments over the past 20 years.¹⁶ Statement of Financial Accounting Standards (FAS) 107 issued in 1991 extended disclosures for financial instruments by requiring all entities to disclose the fair value of these assets and liabilities whether or not recognized on the balance sheet.¹⁷ FAS 115 issued in 1993 classified investments in equity securities that have readily determinable fair values and investments in debt securities into three categories – held-to-maturity, trading and available-for-sale.¹⁸ FAS 133 issued in 1998 required that all derivatives be recognized as either assets or liabilities on the balance sheet and measured at fair value, and that a derivative may be specifically designated as a fair value hedge, cash flow hedge or hedge of a foreign currency exposure.¹⁹ FAS 157 issued in 2006 defined fair value, established a framework for measuring fair value, and expanded disclosures about fair value measurements. Fair value was defined as ‘The price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date’. In determining fair value on the basis of the assumptions that market participants would use in pricing an asset or liability, FAS 157 established a hierarchy that distinguishes between assumptions based on market data obtained from independent sources (observable inputs) and the reporting entity’s own assumptions based on the best information available in the circumstances (unobservable inputs).²⁰

The FASB thus acknowledged that there may be times when assets trade relatively infrequently and few buyers demand such products, but problems have nonetheless emerged when market-based measurements do

not reflect true values. The inclusion of unobservable inputs in FAS 157 was ostensibly intended to allow for situations in which there is little, if any, market activity for a financial instrument at the measurement date. However, when liquidity is very low and investors are fearful, the exit price of an asset may drop well below the anticipated value of its future cash flows even when using unobservable inputs. In the recent crisis, financial institutions had to reduce the value of assets to reflect current prices, which had declined severely as mortgage defaults escalated and credit markets dried up. Huge losses reported by financial institutions such as AIG sparked a fierce debate over the implementation of FAS 157 in dislocated markets.²¹

THE BLAME GAME

Although MTM undoubtedly helps investors by gauging the value of financial instruments at a point in time rather than just their historical cost, this section contrasts the opposing views on whether it also deserves some of the blame for the plummeting asset prices during the financial crisis.

Attack on MTM

MTM has commonly been criticized on two primary grounds. The first is that the application of fair value accounting does not always result in the most realistic valuations of financial instruments. In that respect, the Securities and Exchange Commission (SEC), FASB and other proponents of MTM have persuasively argued that, from among the other alternatives, it is the best measure of actual value. The second and more compelling criticism, though, is that even if MTM results

in the best measure of actual value, it should not be used because it contributes to undesirable procyclical swings in the economy. MTM is procyclical in that when one firm marks its prices up or down others must do the same, pushing asset prices higher in up markets and lower in down markets.²² Moreover, when the market is distressed, asset price declines force leveraged entities to sell assets to raise capital and these sales depress prices further, forcing more sales. Rather than just recording asset prices, MTM winds up fueling a 'downward spiral':

Marking-to-market ... has very real effects because regulatory capital and capital for rating agency purposes is based on GAAP In the current situation, partly as a result of GAAP capital declines, banks are selling assets or are attempting to sell assets – billions of dollars of assets – to 'clean up their balance sheets,' raising cash and delevering. This pushes down prices, and another round of marking down occurs, and so on. This downward spiral of prices – marking down, selling, marking down again – is a problem when there is no other side of the market....²³

Critics argue that MTM is therefore too weak to prevent the trading activities that cause market downturns, but too rigid to allow companies to survive those downturns. Not only have the MTM accounting rules intended to increase transparency failed to address the real problems of risky OTC derivatives, loose monetary policy, unregulated credit rating agencies and precariously leveraged investment firms, but they also actually exacerbate financial crises because they lack sufficient flexibility in the

event of a credit crisis. When trading in a given asset drops below a given level – even if trading decreases as a result of low market liquidity – the exit price for that asset must nevertheless be disclosed in the financial statements. However, when the market for an asset is distressed and inactive, its exit price could decline to zero regardless of the anticipated value of its future cash flows. During the recent crisis, write-offs from mortgage-backed securities triggered many lenders' margin calls, forcing them needlessly to liquidate other assets below their actual value. Widespread liquidation flooded the market with these securities, decreasing their value and leading to massive write-offs, financial firm bankruptcies and a rush to sell throughout financial markets.²⁴

As AIG's descent was underway in March 2007, then CEO Martin Sullivan campaigned to relax the MTM accounting rules that had already forced the company to take \$11.1 billion in write-downs on debt securities. According to Sullivan, AIG was 'in a position of financial strength [and] can hold those assets to maturity, so why have the challenge of marking them to market in an illiquid market'. He urged that 'maybe there's a short-term interpretation or amendment that can be considered in the uncharted waters we're in'. Christopher Whalen, a managing director at Institutional Risk Analytics, similarly called for amending the MTM rules insisting that they unfairly forced firms to write down assets below their real worth. 'What we're doing with this rule, as it stands today', he warned 'is we're causing panic'.²⁵

Defense of MTM

Proponents of MTM have countered that these accounting rules ultimately generate the most

realistic valuations of financial instruments and are neither as inflexible nor as significant as suggested. Contrary to MTM's detractors, the rules do not rigidly require firms to mark to market all or most financial instruments. For example, fair value accounting is not required for securities or unimpaired loans that will be held to maturity. Fair value accounting also does not necessarily require marking to market; the accounting rules provide considerable flexibility in determining fair value. Furthermore, the rules did not, as alleged, force firms to sell assets as a result of MTM declines. As these accounting rules merely affect how asset values are reported in financial statements, unless regulations directly incorporate values from these financial statements, the numbers have only the power that market participants give them.²⁶

Supporters of MTM discern that AIG's demise may have been related to MTM, but not necessarily the accounting rules. Rather, it was the standard financial trading practice of requiring firms to post collateral on an MTM basis that brought AIG to the brink. AIG wrote protection on \$57 billion of subprime mortgage-backed securities and the market value of these assets moved drastically against AIG. As is standard practice for such contracts, the counterparties demanded collateral to back up AIG's obligations to them. These margin calls were brought on by the market value of positions and credit risk mitigation provisions in their bilateral derivative contracts, not the FASB's accounting rules. Granted, AIG was required to post \$15 billion in additional capital pursuant to its trading agreements after a credit rating downgrade, and credit rating agencies likely incorporated AIG's GAAP-based financial statements into their analyses. But as credit rating

agencies consistently maintain, a credit rating is an opinion or predictive judgment not confined to any particular set of ratios or numbers, and thus they were not prevented from determining that AIG's credit had not actually deteriorated to the point where a downgrade was warranted.²⁷

The FASB thus strongly contested MTM's alleged role in AIG's troubles. Donald Young, a FASB board member, maintained that MTM is actually 'most valuable' during tough markets because it tells investors that assets are really under stress. He quipped that 'It sure seems like everyone hates MTM when the market is going down ... you hear no complaints when the market's going up'. Gerard Carney, a spokesman for the FASB, bluntly commented that 'FASB's accounting standards, fair value included, didn't make the fat guy fat ... they just made him step on the scale to see how much he weighs'.²⁵

THE AFTERMATH

With the dust still settling from the financial crisis and a host of regulatory dilemmas left in its wake, this section recounts how the SEC and FASB have reexamined and plan on going forward with MTM as compared to the conclusions arrived at by independent scholarly analyses.

Regulators' releases and reforms

As the MTM controversy intensified in September 2008, the SEC and FASB issued a joint press release clarifying the application of FAS 157 in dislocated markets. The release first provided that when an active market for a security does not exist, management estimates that incorporate current market participant expectations of future cash flows and include

appropriate risk premiums are acceptable. Second, broker quotes may be an input when measuring fair value, but are not necessarily determinative when an active market does not exist for the security. Third, the results of disorderly transactions are not determinative when measuring fair value, as the concept of fair value assumes an orderly transaction between market participants. Fourth, transactions in inactive markets may be inputs when measuring fair value, but would likely not be determinative. Finally, the greater the decline in value, the greater the period of time until anticipated recovery, and the longer the period of time that a decline has existed, the greater the level of evidence generally needed to conclude that an other-than-temporary decline has not occurred.²⁸

The Emergency Economic Stabilization Act signed into law in October 2008 contained two significant provisions concerning MTM. First, it gave the SEC the authority to suspend FAS 157 for any issuer or class or category of transaction if deemed necessary or appropriate in the public interest and consistent with the protection of investors. Second, it directed the SEC to conduct a study of FAS 157 to be submitted to Congress addressing the effects of fair value accounting standards on financial institutions' balance sheets; the impact of fair value accounting on bank failures in 2008; the impact of fair value accounting on the quality of financial information available to investors; the process used by the FASB in developing accounting standards; alternatives to fair value accounting standards; and the advisability and feasibility of modifications to fair value accounting standards.⁵ The SEC delivered this report to Congress in December 2008, finding that fair value accounting increases transparency

and facilitates investment decision-making and that it did not appear to play a meaningful role in the bank failures of 2008. The report concluded that fair value accounting standards should not be suspended, but imparted eight recommendations to improve their application, including additional guidance for determining fair value in inactive markets.²⁹

Following up on these earlier releases and reports, the FASB issued official pronouncements first easing but then proposing to expand the MTM rules. In April 2009, the FASB published three Staff Positions – one providing additional guidance for estimating fair value in accordance with FAS 157 and notably allowing for 'significant judgment' in valuing illiquid securities;³⁰ another dealing with the presentation and disclosure of other-than-temporary impairments of debt securities;³¹ and the third requiring fair value disclosures for interim reporting periods.³² After much debate and fanfare, the FASB in May 2010 released for public comment its proposed accounting standards for financial instruments as well as derivatives and hedging.³³ Most significantly, these proposals would require financial institutions to record virtually all financial instruments at fair value on their financial statements. This would radically change existing financial reporting for lending and depository institutions and has been vociferously condemned by the affected institutions.³⁴

Scholars' studies and suggestions

Although the MTM debate continues to garner a multitude of views across the spectrum notwithstanding the steps the regulators have taken, a centrist position appears to be gaining support. At one end are some prominent

members of the banking and finance community, such as former Federal Deposit Insurance Corporation chairman William Isaac, who still adamantly blame MTM for causing the financial crisis.³⁵ At the other end are studies that have proclaimed MTM a false villain,³⁶ merely serving as the unwitting messenger delivering the effects of the crisis.³⁷ Somewhere in between, though, are scores of scholars persuaded that MTM was not a primary cause of the financial crisis but accepting that it may have contributed to some degree. As one comprehensive study eloquently put it, MTM 'is neither responsible for the crisis nor is it merely a measurement system that reports asset values without having economic effects of its own'.²⁶ These studies concede that fair value accounting is not perfect, but maintain there are no clearly better alternatives.³⁸ Hence, rather than displacing the MTM rules entirely or just leaving them be, they have suggested a variety of improvements.

An obvious solution would involve limiting the scope and impact of MTM. Contrary to the FASB's proposals, fair value accounting does not necessarily have to be applied without distinction to all financial institutions. Commercial banks, for instance, could be allowed to value their assets based on their discounted cash flows, thereby focusing on their stability and not on their earnings potential. Although there is some value in uniformity and comparability among the financial reports of financial institutions, what investors want to know about banks may just not be as important for their success and the economies that depend on them as what depositors, lenders and counterparties need to know.³⁹ Alternatively, some advocate using the accounting to maximize transparency, but to adjust capital

requirement rules to guarantee financial stability.⁴⁰ If accounting and capital requirements were substantially unlinked, banks could fully disclose the results under fair value accounting but not reduce their capital for regulatory purposes by the fully disclosed amounts, thereby providing investors with disclosure about current market prices while reducing the volatility of banks' regulatory capital.⁴¹

Another popular approach calls for blending or supplementing fair value accounting with alternative methods either in the financial statements or through enhanced disclosures. When model-based valuations based on plausible assumptions differ significantly from market-based valuations, both types of valuations, as well as traditional historical cost valuations, should be considered.⁴² Perhaps financial institutions could be required to disclose material information regarding the fair-value calculations of all assets and liabilities in the financial statements, but they could also provide in the notes to the financial statements other valuation methods that management perceives as more reflective of their true value, or vice versa.⁴³ If regulators are trying to give the maximum amount of information to the marketplace, financial institutions should supply the valuation of financial instruments on the basis of market value along with alternative methods and then interested parties, assuming a minimum level of sophistication, can apply their own judgment.⁴⁴

CONCLUSION

Reaching unanimity in the MTM controversy is doubtful, but the discourse is gradually settling on a middle ground. Emerging from this jumbled debate is a growing conviction that MTM was most likely not a primary cause of the

financial crisis and it remains an indispensable means of valuing financial instruments, but the existing rules might have contributed to the crisis to some extent and certainly have room for improvement. The challenge ahead lies in identifying MTM's procyclical elements and resolving how to clarify, adjust and possibly loosen these otherwise constructive accounting rules. In so doing, regulators should be mindful of their greater responsibility of taking actions needed to protect the financial system and ensuring that the years of plenty are not swallowed up by years of famine.

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