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Do accounting measurement regimes matter? A discussion of mark-to-market accounting and liquidity pricing ☆

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Abstract

Using a model with banking and insurance sectors, Allen and Carletti show that marking-to-market interacts with liquidity pricing to exacerbate the likelihood of financial contagion between the two sectors. In this discussion, I lay out the main ingredients of their model and explain how they interact with liquidity pricing to generate financial contagion. I then discuss some limitations of their model and propose an interesting extension.

JEL classification: D52; G12; G21; G22; M41

Keywords: Mark-to-market; Historical cost; Liquidity pricing; Accounting measurement; Financial contagion

1. Introduction

Accounting is sometimes seen as a veil—as a mere detail of measurement—leaving the economic fundamentals unaffected. The validity of such a view would be overwhelming in the context of completely frictionless competitive markets. Accounting would be irrelevant in such a world, since market prices are fully observable and common knowledge among all. Or, to put it another way, accounting is relevant only because we live in an *imperfect* world where transaction prices may not correspond to the hypothetical market prices that would prevail in frictionless competitive markets. Therefore, the nature and consequences of the imperfections are key to the debate about mark-to-market versus historical cost accounting.

Proponents of marking-to-market argue that the market price of an asset or liability reflects the amount at which that asset or liability could be bought or sold in a current transaction between willing parties. Therefore, a measurement system based on market values would lead to better insights into the risk profile of firms than a historical cost-based measurement system so that investors could exercise better market discipline and

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corrective action on firm's decisions. Such an argument would be compelling in the context of completely frictionless competitive markets. However, when there are imperfections in the economy, then the superiority of a mark-to-market regime is not so obvious. To understand this, let me draw an analogy using the theory of second best from welfare economics. When there is more than one imperfection in a competitive economy, simply removing one of these imperfections need not be welfare-improving. It is possible that the removal of one of the imperfections magnifies the negative effects of the other imperfections to the detriment of overall welfare. The paper by Allen and Carletti (henceforth AC) (2007) is an important paper that nicely makes the following point—simply moving from a historical cost regime to a mark-to-market regime without addressing the other imperfections in the financial system need not guarantee a welfare improvement.

AC study a financial system consisting of a banking and an insurance sector—environments clearly prone to market imperfections such as illiquid and incomplete markets. They show that mark-to-market accounting need not be welfare-improving because it creates contagion between the banking and insurance sectors. Under historical cost accounting there is no contagion. The key friction operating in AC's environment that leads to contagion in the financial system is called *liquidity pricing*. I will discuss later how liquidity pricing plays a key role in their paper and interacts with mark-to-market accounting to produce financial contagion. In times of financial crises, when there is likely to be a liquidity shortage, the interaction among institutions and markets can lead to situations when prices no longer reflect fundamentals but rather the amount of cash (liquidity) available to buyers in the market. Intuitively, whenever there is a shortage of liquidity with incomplete markets, prices of assets should fall low enough in order to provide incentives for investors to hold liquidity so that they can buy the asset. The long term capital management episode in Fall 1998 is a painful reminder of the phenomenon of liquidity pricing. The New York fed arranged a private bailout of the hedge fund and it justified its actions by arguing that if the fund had been liquidated, many prices in illiquid markets would have fallen and this would have caused further liquidations, and so on, in a downward spiral. The subprime mortgage liquidity crisis of Summer 2007 is another vivid illustration of liquidity pricing. The prices of many illiquid loans plummeted as the amount of liquidity in the market dried up. Unfortunately, in an attempt to reduce their exposure to these loan portfolios, many banks unloaded these assets and such sales led to a further fall in the prices of these loans.

Given the phenomenon of liquidity pricing, it is perhaps not surprising that the opposition to marking-to-market has been led mainly by the banking and insurance institutions. For both types of financial institutions, a large proportion of their balance sheets consists precisely of illiquid claims such as long term loans, privately placed notes, and structured derivative products. These claims are not standardized and do not trade in deep and liquid markets. Instead, they are typical of many types of assets that trade primarily through over-the-counter markets where prices are determined by the amount of liquidity available in the market. In fact, measurement issues have a far reaching influence on the behavior of financial institutions and determine to a large extent the efficiency of the price mechanism in guiding real decisions. In spite of the practical importance of the above issue, AC's study is among one of the few theoretical papers that have investigated the impact of measurement issues on financial institutions. The paper "Marking-to-Market: Panacea or Pandora's Box?" by Plantin et al. (2008) is another notable exception.

To study the perverse effects of illiquidity on financial institutions, Plantin et al. developed a model that compares the real effects of a historical cost versus a mark-to-market measurement regime. The fundamental trade-off in their paper can be described as follows. The historical cost regime relies on past transaction prices resulting in accounting values that are insensitive to current price signals. This lack of sensitivity to price signals induces inefficient sales because the measurement regime does not reflect the appreciated value of the measured assets. Marking-to-market overcomes this price insensitivity by extracting the information conveyed by current price signals, but in trying to extract information about market prices, marking-to-market potentially adds *endogenous volatility* to prices. Plantin et al. show that marking-to-market is superior to historical cost accounting for claims that are relatively short–lived, liquid, and junior in nature. Conversely, historical cost is superior to marking-to-market for claims that are relatively long-lived, illiquid, and senior in nature.

The rest of my discussion is organized as follows. In Section 2, I describe the major components of the financial system that AC model. I then describe and illustrate the phenomenon of liquidity pricing that is a key element of AC's environment. Next, I explain the key ingredients that the authors use in their analysis in order

to generate contagion between the banking and the insurance sectors. Finally, I show how accounting measurement can interact with liquidity pricing to exacerbate contagion between the banking and the insurance sectors. In Section 3, I comment on the contributions and limitations of AC's model. In Section 4, I propose an extension of AC's model that can be used to study an interesting trade-off between the historical cost and mark-to-market measurement regimes. Section 5 concludes.

2. The financial system

AC model a financial system consisting of two sectors—a banking sector and an insurance sector. Each sector consists of a large number of competitive firms with nonoverlapping lines. There are three dates—0, 1, and 2 and a single good in the economy.

2.1. The banking sector

Banks have access to three different technologies: a short asset, a long asset, and a risky loan. The short asset is a storage technology: 1 unit invested at date 0 produces 1 unit at date 1. The long asset is represented by a constant returns to scale technology that takes two periods to mature: 1 unit invested at date 0 produces a nonstochastic return $R>1$ units at date 2. If there were a market for the long asset at date 1 so that it could be liquidated at a price P, then the long asset would always dominate the short asset as long as $P\geqslant 1$. On the other hand, if $P<1$, then the short and long asset capture the trade-off between liquidity and return. Finally, banks have access to a risky long term technology. At date 0, these banks make risky long term loans to firms. These loans are risky because firms can pay back $B>1$ units at date 2 only if their financial condition is good. If their financial condition is bad, firms default on these loans. To invest in these alternative technologies, banks raise funds from depositors and investors. There are a large number of risk neutral investors in the market who have a large endowment at date 0 and none at dates 1 and 2. These investors can potentially provide capital to both banking and insurance sectors at date 0. They are indifferent between date 1 and date 2 consumption and have nonnegative consumption. To ensure that the investors provide capital to the banking or insurance sectors, AC assume that these investors have an opportunity cost of $\rho>R>1$ so that they will never invest directly in the short or long asset. I will discuss later how the assumption that the investors' opportunity cost of capital $\rho>1$ plays a key role in explaining how AC get liquidity pricing in their model. Banks also have access to depositor funds. The depositors have 1 unit of the good at date 0 and none at dates 1 and 2. The depositors have Diamond–Dybvig preferences: in other words, while the overall proportion of early versus late consumers is common knowledge, at date 0 each depositor is uncertain of her preferences. If the depositor is an early consumer, she will only value the good at date 1. If the depositor is a late consumer, she will only value the good at date 2. Thus, uncertainty about preferences generates a preference for liquidity and a role for the banks as providers of liquidity insurance. Competition among the banks ensures that the objective function of each bank is to choose how much to invest in the short asset, long asset, and risky loans in order to maximize the expected utility of its depositors.

2.2. The insurance sector

The insurance sector insures another set of firms that have damageable assets. Each firm has an endowment of 1 unit at date 0 and owns a machine that produces $A>1$ units of a good at date 2. However, depending on the state of nature, these machines may be damaged at date 1. If the state of nature is good, 50% of the machines are damaged with a certain probability, however if the state of nature is bad, all the machines are damaged with a certain probability. If these machines are not repaired, they produce nothing at date 2. Thus, at date 0, firms can decide to buy insurance against the probability of incurring a damage at date 1 in exchange for a premium at date 0. If repaired, the machines produce A units. In order to pay for the firms' damages at date 1, the insurance companies collect the premiums and invest them in either the short or long asset described above. The insurance sector could offer *partial insurance* by only insuring the firms in the good state of nature or *full insurance* by insuring the firms in both the good and bad states of nature. If partial insurance is offered, the insurance companies liquidate their holdings in the bad state of nature because they cannot

satisfy all the claims. AC assume that insurance companies also operate in competitive markets and thus maximize the expected utility of the risk-averse owners of the firms.

2.3. Optimal banking and insurance portfolios

Given the need to provide liquidity insurance to their depositors, who may be either early or late consumers, AC show that banks would optimally invest in the short asset, the long asset, and the risky loans. Furthermore, even though capital is costly ($\rho > R$) for efficient risk-sharing, banks would still raise external capital from the risk-neutral investors in order to smooth out the consumption of the risk-averse depositors.

Unlike banks, insurance companies may not necessarily invest in the long asset because of their short term liquidity needs. In fact, if there is no market for the long asset at date 1 so that the liquidation price of the long asset $P = 0$, then insurance companies would only invest the premiums collected in the short asset. Furthermore, given the capital is costly ($\rho > R$) and given their short term liquidity needs, insurance companies would not raise external capital from the investors. Fig. 1 illustrates the financial system with its two sectors operating in autarky.

2.4. Liquidity pricing

One of the important frictions operating in AC's environment is the phenomenon of liquidity pricing. Liquidity pricing captures the idea that, in times of financial distress when there is likely to be a liquidity shortage, prices may no longer depend on fundamentals but rather on the amount of liquidity available in the market. Liquidity pricing then implies that the price of an asset is the ratio of the amount of cash seeking to purchase that asset to the available supply of the asset. This is a variation of the Shapley and Shubik (1977) model of trade between commodities in which the price of one good in terms of another is the ratio of the quantities offered in exchange. Allen and Gale (2004) and Diamond and Rajan (2005) have recently popularized this approach to price determination in financial markets for the study of market liquidity.

Formally, liquidity pricing implies that the price P of an asset that generates a stochastic future return $\widetilde{R}$ can be written as

$$P = \min\left(\frac{\gamma}{l}, E(\widetilde{R})\right),$$

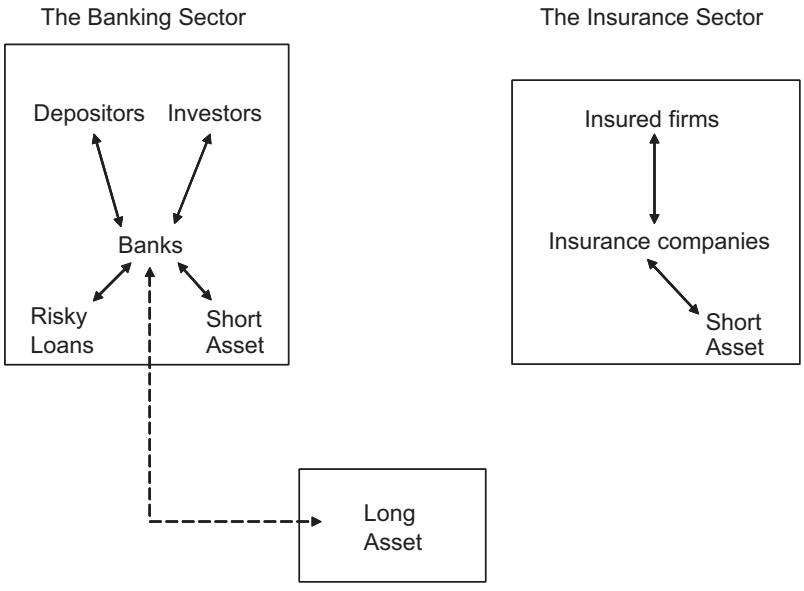

Fig. 1. The financial system: autarky.

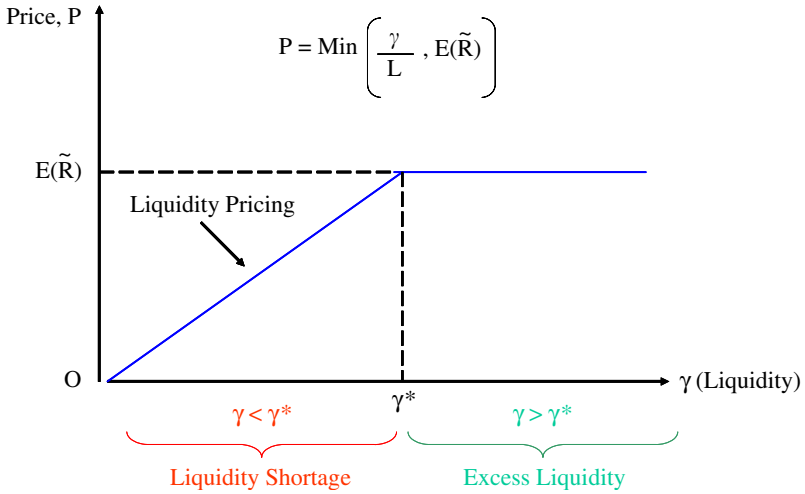

Fig. 2. Liquidity pricing.

where γ denotes the amount of liquidity available in the market, l denotes the supply of the asset, and $E(\cdot)$ is the expectations operator. Fig. 2 illustrates liquidity pricing. When there is excess liquidity ($\gamma > \gamma^*$), then the usual risk-neutral pricing rule applies so that price only depends on fundamentals, $E(\tilde{R})$. However, when there is a liquidity shortage ($\gamma < \gamma^*$), then there is liquidity pricing because price only depends on the amount of liquidity γ available. Liquidity pricing, in turn, implies that the lower the amount of available liquidity γ, the lower the price P of the asset.

To see how liquidity pricing arises in AC's environment, recall that the suppliers of liquidity are the risk-neutral investors who have an opportunity cost of capital $\rho > R > 1$. Consequently, in order to provide incentives to these investors to hold liquidity so that they can buy the long asset at date 1, the price P of the long asset must fall low enough so that investors earn at least ρ. In fact, P has to fall below the return R of the long asset, otherwise the short asset would dominate the long asset—but a $P < R$, in turn, implies liquidity pricing.

3. Ingredients for contagion

To allow for the possibility of contagion in the financial system, AC introduce the following three ingredients:

(1) *Systemic risk*. Insurance companies may offer either partial insurance or full insurance. On the one hand, offering full insurance might be too costly because of the opportunity cost of keeping excess liquidity at date 1 by investing in the short asset which returns 1 unit rather than the long asset which returns $R > 1$ units. On the other hand, partial insurance implies that insurance companies might go bankrupt in those states of nature in which the amount of claims exceed their assets. Hence, there is systemic risk in the insurance sector. To allow for the possibility of systemic risk, AC focus on an environment where partial insurance is indeed optimal. However, note that such systemic risk is benign from a social welfare perspective.
Fig. 1 illustrates that there is, so far, no connection between the banking sector and the insurance sector so that systemic risk in the insurance sector cannot propagate to the banking sector unless, as I discuss next, there is a linkage between the two sectors.

(2) *Linkage between banking and insurance*. One way to create a linkage in the financial system is for both sectors to hold a common asset, i.e., the long asset. Unfortunately, as discussed earlier, if there is no market for the long asset at date 1, then it is clearly not optimal for the insurance companies to hold the long asset because of their short term liquidity needs. However, even with a market for the long asset at

date 1, insurance companies would not necessarily hold the long asset at date 0 because liquidity pricing could imply that the liquidation value P of the asset could be less than 1, the return of the short asset. To induce the insurance companies to hold the long asset, AC then allow for risk sharing between the banking and insurance sectors via a credit risk transfer. Risk sharing is feasible because the risks faced by the banking sector (from their risky loans going sour) and the insurance sector (from facing excessive claims from damaged machines) are independent. Risk sharing via a credit risk transfer takes the form of a payment from the insurance companies to the banks when the insurance companies claims are low but banks' loans do not pay off, and a payment from the banks to the insurance companies when banks' loans pay off but insurance claims are high. Clearly, the credit risk transfer allocation is Pareto superior to the autarky allocation (in which there are no transfers between the sectors). Furthermore, AC show that introducing a credit risk transfer arrangement between banking and insurance sectors may now induce insurance companies to invest in the long asset rather than the short asset. Thus, the banking and insurance sectors can now be linked to each other via the long asset as shown in Fig. 3.

(3) *Measurement regime*. Finally, in order for systemic risk to propagate from the insurance sector to the banking sector, the interaction between liquidity pricing and the accounting measurement regime is critical. The main result of the paper is that mark-to-market accounting interacts with liquidity pricing to generate contagion in the financial system: the systemic risk from the insurance sector propagates to the banking sector causing the banks to also fail. However, under historical cost accounting, contagion does not occur. The accounting measurement regime is important because banks face a date 1 solvency requirement—the value of their assets at date 1 must exceed the value of their date 1 liabilities. The date 1 value of a bank's long asset depends on the measurement regime in place. If the solvency requirement is not met, regulators declare the banks insolvent and they are shut down.

Let x, y, and z, respectively, denote the amount that a bank would invest in the short asset, long asset, and risky loan.

Under historical cost accounting, because the price of the long asset is measured by its *original cost* (i.e., *one*) the solvency requirement takes the form:

$$x + y + z \geqslant c_1, \tag{1}$$

where c_1 is the date 1 consumption of the early consumers.

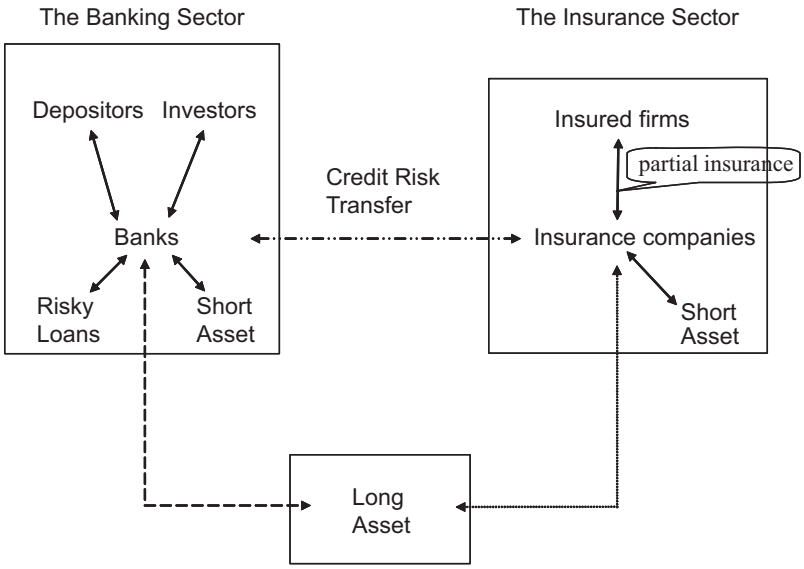

Fig. 3. The financial system.

Under mark-to-market accounting, the date 1 value of the long asset is measured by P, its *date* 1 *market price*, so that the solvency requirement takes the form:

$$x + Py + z \geqslant c_1. \tag{2}$$

3.1. Accounting measurement and contagion

To understand why accounting measurement plays an important role in propagating systemic risk, consider insurance firms who go bankrupt at date 1 so that their long assets must be liquidated and the cash proceeds distributed to their owners. Then suppliers of liquidity, i.e., the investors, need to buy those assets at date 1. However, for them to do so, the long asset has to return at least 1 unit, otherwise, the short asset would dominate the long asset and nobody would hold the long asset from date 1 to date 2. Consequently, the price P of the long asset must fall below R. But a falling P implies that the value of a bank's asset under mark-to-market also falls so that the solvency constraint given by inequality (2) is eventually violated. This, in turn, implies that banks become insolvent and liquidate their long term asset so that the supply of the long asset goes up. A larger supply of the long asset leads to a further fall in the price P of the long asset and so on. In other words, systemic risk in the insurance sector leads to contagion via the accounting measurement regime and the effect of liquidity pricing is *amplified* by mark-to-market accounting. Unfortunately, banks are liquidated at date 1 *even though* they can meet all their commitments at date 2.

Under the historical cost regime, note that systemic risk from the insurance sector does not spill over to the banking sector because, even though the market price P of the long asset drops, the value of a bank's assets does not depend on P. Therefore, the banks do not liquidate but continue until date 2. This continuation is desirable because they can meet all their date 2 commitments to their depositors. Thus, a historical cost measurement regime is Pareto superior to a mark-to-market regime.

4. Comments

AC identify an interesting and novel endogenous cost of marking-to-market: whenever a crack appears in some part of a financial system, a mark-to-market measurement regime may serve as an important catalyst in propagating this crack to other parts of the system. Such propagation, in turn, may lead to financial contagion which is detrimental to welfare. Put differently, marking-to-market has financial stability implications because it may amplify the nefarious effects of liquidity pricing.

I believe this paper has broader implications for the general economy. Recently, thanks to years of low interest rates, investors with plenty of cash in hand have flocked to illiquid investments in search of outsize returns, often with the help of borrowed money. The greater flow of funds into the riskier asset classes has further contributed to the compression of yield spreads, inducing migration yet further down the risk spectrum. When combined with other recent trends in financial markets, such as financial innovation and greater stress on short term incentives, the implication of AC's paper is that marking-to-market of illiquid assets and liabilities may play an important role in the propagation of market dynamics that lead to the search for yield. Therefore, accounting measurement issues are important not just to accountants and auditors. These issues also deserve attention from central bankers and other policy makers as a cornerstone of the policy toward financial stability.

However, I feel that the analysis in the paper is somewhat one-sided; there is no economic trade-off between mark-to-market accounting and historical cost accounting. The paper identifies an inefficiency associated with mark-to-market accounting because it generates contagion in the financial system. However, there are no inefficiencies associated with historical cost accounting. Consequently, the expected utility of depositors and insurance policyholders under mark-to-market accounting is always lower than the expected utility of the same stakeholders under historical cost accounting. In that sense, the historical cost regime unambiguously dominates the mark-to-market regime. In practice, there are surely some potential benefits to mark-to-market accounting. Similarly, there are clearly some costs to historical cost accounting that are not captured in the model. The lack of economic trade-off by no means diminishes the contribution of the paper. In fact, to the extent that the many benefits of mark-to-market accounting have already been well documented, AC's paper can be viewed as somewhat redressing the balance against the arguments for marking-to-market. Next, I discuss some specific limitations of the model and then I propose a possible extension of their model.

4.1. Solvency constraints

The solvency constraints in the model are *exogenously* imposed on the banks at date 1. In other words, when solving for the optimal contracts to offer to their depositors at date 0, banks in AC's environment do not incorporate those constraints in their optimization problems. One interpretation of this is to assume that these solvency constraints were *unanticipated* from the perspective of date 0. In other words, there is a new regulatory requirement *ex post* requiring banks to be solvent at date 1 but such a regulatory requirement was not anticipated *ex ante*. However, this interpretation is rather unsatisfactory given that solvency constraints and prudential ratios are part of the regulatory landscape of banks.

I believe incorporating these solvency constraints in banks' optimization problems would actually enrich AC's analysis and allow them to shed light on the *real effects* of accounting measurement regimes. In fact, one of the arguments often made by the banking sector is that marking-to-market would induce banks to shift their optimal portfolios toward shorter term loans and more liquid assets. However, such a shift in banks' portfolios would be socially inefficient because it would hamper banks' liquidity transformation roles of lending long and borrowing short. Clearly, banks would have an incentive to change the composition of their portfolios in AC's environment in order to alleviate the interaction between liquidity pricing and mark-to-market accounting. Therefore, incorporating these solvency constraints in the banks' optimization problems could provide answers to the following interesting questions:

1. Would banks shift their optimal portfolios toward holding more short and liquid assets versus long and illiquid assets under mark-to-market accounting relative to historical cost accounting?
2. How would risk-sharing between the banking and insurance sectors be affected by the above changes in the banks' portfolios?
3. Given the real effects described in (1) and (2), is depositors' expected utility under historical cost accounting then still higher than their expected utility under mark-to-market accounting?

4.2. A possible extension of AC's model

Stepping back from the model for a moment, even if these solvency constraints were incorporated in banks' optimization problems, they are suboptimal and should have never been imposed in the first place. This is because these constraints unambiguously reduce welfare by prematurely shutting down the banks when these banks should be allowed to continue! In AC's environment, banks should always be allowed to continue because they can surely meet all their commitments at date 2. Put differently, the first-best solution in AC's environment is for the regulators to never intervene and always allow the banks to continue until date 2.

Of course, one possible interpretation of these suboptimal constraints would be to view the banking regulators as myopic agents who only care about the health of the banks at date 1. However, this interpretation is not entirely pleasing because these regulators must not only have short term horizons but they must also suffer from some kind of irrationality. The banking regulators know for certain that if allowed to continue at date 1 these banks would never fail at date 2, nonetheless, they still shut down the banks at date 1! Given that solvency constraints do seem to play a useful role in practice, I next propose a modification of AC's model. I believe this modification not only explains why solvency constraints play a natural role in practice, but as I discuss below, it may also allow us to study an interesting economic trade-off between marking-to-market accounting and historical cost accounting that would enrich the analysis in the paper.

In AC's environment, continuation of the banks' operations to date 2 strictly Pareto dominates liquidating the banks at date 1. Does there exist an environment where this need not be the case? Suppose banks can invest in either the short asset or the long asset. The long asset, respectively, returns R_1 and R_2 at dates 1 and 2 and these returns are positively correlated. However, from the perspective of date 0, the returns of the long asset are uncertain so that $\widetilde{R}_1$ and $\widetilde{R}_2$ are stochastic. If fundamentals turn sour at date 1, the positive correlation between $\widetilde{R}_1$ and $\widetilde{R}_2$ implies that fundamentals are also likely to be bad at date 2. In such an environment, solvency constraints play an important role in providing an early warning to regulators that banks may be in trouble and therefore may not be able to meet all their commitments at date 2. In other words, it is now

optimal for the regulators to liquidate the banks at date 1 before the banks' assets lose most of their values at date 2. The U.S. Savings and Loan (S&L) episode in the 1980s is a natural case in point. The crisis stemmed in part from the fact that variable interest rates on the short term demand deposits rose above the fixed rates on the long term mortgage assets held by the S&Ls. Historical cost accounting masked the problem by allowing losses to show up gradually through negative net interest income, but by the time regulators intervened, it was already too late. However, a mark-to-market approach would arguably have highlighted the problem much earlier, as captured by the solvency constraint, and would have allowed regulators to intervene at a much lower fiscal cost.

Incorporating the proposed modification to AC's model, the trade-off between historical cost accounting and mark-to-market accounting would then be as follows:

- Under historical cost accounting, even though fundamentals are sour, the solvency requirements rely on past prices and therefore may incorrectly allow the banks to continue until date 2 when the banks should be liquidated at date 1. By the time regulators intervene at date 2, it is too late. The size of the banks' assets may have considerably shrunk and everyone is worse off. Thus, under historical cost accounting, there is *inefficient continuation* of the banks at date 1.
- Under mark-to-market accounting, the solvency requirements at date 1 rely on current price signals and are therefore informative about the value of the banks' assets at date 2, allowing regulators to efficiently shut down the banks early before losses escalate. However, as AC show, in the presence of liquidity pricing, *contagion* is a necessary evil.

The implication of the preceding trade-off is that mark-to-market accounting would dominate historical cost accounting if, and only if, the welfare losses from contagion are relatively small compared to the welfare losses from inefficient continuation under historical cost accounting. In particular, all else equal, the more illiquid the assets of the bank and therefore the more severe the liquidity pricing effect, the more likely it is that historical cost accounting would dominate mark-to-market accounting. Conversely, all else equal, the higher the correlation between the date 1 and date 2 returns of the long asset, the more informative the solvency constraints and the more likely it is that mark-to-market accounting would dominate historical cost accounting.

I am not claiming that the proposed modification would be straightforward to incorporate analytically. However, I do believe it is an interesting trade-off that nicely meshes the endogenous cost of mark-to-market accounting that AC identify with the opacity of historical cost accounting that was so painfully evident in the S&L crisis of the 1980s and the subprime mortgage crisis of Summer 2007.

5. Conclusion

Debates on accounting measurement issues have generated considerable controversy and as standard-setters argue for more transparency in the future via fair value accounting, these debates are likely to gather even more steam. AC model a financial system and identify an endogenous cost of marking-to-market the illiquid assets: marking-to-market exacerbates the likelihood of financial contagion. Far from being an obscure and arcane debate about measurement, AC model an environment in which accounting measurement issues take on a huge significance for the stability of the financial system. Thus, in their advocacy for greater transparency, accountants and auditors may be rightly pursuing the interests of investors. But, the implication of AC's model is that policymakers have to worry about wider issues such as the stability of a financial system.

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