Introduction

The 2007–8 financial crisis: Lessons from corporate finance

The biggest financial crisis since the Great Depression took place exactly 50 years after the publication of the Modigliani and Miller (M&M) irrelevance propositions. The timing is ironic because the 2008 financial crisis shows decisively that capital structure matters and that the frictions assumed away by M&M are of first order importance. This is not to minimize Modigliani and Miller’s (1958) seminal contribution, but rather to reject its pervasive misuse in finance and economics. Just as the Coase (1960) theorem—initially conceived as a rhetorical argument to show that transaction costs matter—was used by some to claim that property rights were irrelevant, the M&M theorem has been used for many years (and is still used) to deny the importance of corporate financing.

Merton Miller and Franco Modigliani founded modern corporate finance by identifying the necessary assumptions through which capital structure would prove irrelevant. But in many areas of economics, these assumptions, which were meant as an extreme benchmark, were taken to be realistic. Consider, for instance, the evolution of the standard macroeconomic models routinely used for teaching and policy discussions. Such models as the IS/LM model; its replacement, the aggregate demand/aggregate supply model; its successor, the real business cycle model; and the current standard, the New Keynesian dynamic stochastic general equilibrium model, share one feature in particular: the total absence of a financial system. These models all posit the existence of money as one asset and an amorphous composite asset, typically labeled “bonds,” as another. This distinction can be justified by an appeal to a set of M&M-like assumptions that obviate differences between not only corporate bonds and government bonds but also bonds and other forms of short-term debt such as commercial paper—as well as among longer-maturity securities such as equity. Typically, the starting (and ending) point for generations of economists learning about the aggregate economy was to abstract away from finance. Before the crisis, macroeconomics had ignored financial frictions because many in the profession were willing to treat the M&M propositions as a reasonable approximation of reality.

The situation is only slightly better within the community of financial economists. Corporate finance scholars have increased in number and importance in the last 30 years, but the field is still dominated by asset pricing scholars, who often regard the M&M assumptions as close to true. This presumption is reflected in our teaching. While the impact of taxes on capital structure is given its due, other frictions are discussed but rarely incorporated into valuation calculations. For example, the procedure for leveraging and unleveraging beta accounts for the value of the debt tax shield but ignores the cost of financial distress. Similarly, the adjusted present value method purports to incorporate the cost of financial distress, but in practice those costs are generally ignored.

From its onset, the 2008 financial crisis has highlighted the importance of deviations from the M&M assumptions, i.e., the importance of corporate finance. Indeed, we view the papers in this volume as contributions toward exploring specific deviations from the M&M assumptions. What follows is our brief tour of the papers.

As a starting point, note that the massive securitization process that took place over the 5 years before the crisis can be seen as a gigantic natural test of the M&M proposition that no money can be made (or lost) by simply repackaging existing securities. It is hard to imagine a cleaner test of M&M than the formation of collateralized debt obligations, where several trillion dollars’ worth of mortgages were pooled and resold in different tranches. Corporate finance scholars tried to explain this churning and pooling of securities as a way to reduce the lemons discount associated with the asymmetry of information about underlying asset values (see, e.g., DeMarzo, 2005).

Yet the crisis showed the invalidity of the most important assumption that the value of the underlying cash flows is invariant to their repackaging. Piskorski, Seru, and Vig show that securitization affects the probability of foreclosure and thereby affects the stream of cash flows from the underlying securities. If this phenomenon occurs even in the extremely benign case when all the cash flows are fixed, what happens when different capital structure arrangements modify control rights over real companies and not just their securities? Piskorski et al.’s paper is also important because it highlights the fact that once the downturn occurred, securitization begat foreclosures that
led to losses far greater than would be expected in an M&M world of frictionless transfers of control of an asset.

Shleifer and Vishny analyze the effect of M&M violations on banking. Their model starts from the assumption that banks can sometimes make money by repackaging securities, i.e., they can sell loans at more than the cost of generating them (an M&M violation). When such an opportunity arises, banks tend to use their scarce equity capital (another M&M violation) to maximize the profits from this activity. In so doing, however, they restrict their flexibility to buy assets in the future. Even if they anticipate that assets might become underpriced, they do not maintain sufficient capital to be able to purchase those assets. This phenomenon can explain why the value of subprime loans dropped so severely during the crisis: the investors with the expertise to buy them were capital constrained.

These frictions can also explain why the effect of the subprime crisis spread from the ABX indexes of subprime CDO prices to the Treasury bond and stock markets, as shown by Longstaff’s paper. This contagion effect is consistent with the important macroeconomic effects of a banking sector that is impaired by large losses.

Avoiding these consequences has been the main focus of public intervention from the beginning of the crisis. The debate over the best policy approach to reach this goal has essentially been a debate over the M&M assumptions and their most important violations. For instance, the choice between purchasing bank assets or injecting equity into banks, the design of a resolution regime for financial institutions, and rules for capital requirements all boil down to fundamental questions about the importance of various frictions assumed away by M&M. Ignorance of the M&M assumptions and their implications has proved to be a handicap in these discussions. Interest in these matters is sufficiently high that the editorial pages of major newspapers have been filled with technical opinion pieces about how various plans could be implemented.

Hoshi and Kashyap present an account of this debate, comparing and contrasting it with a similar one that took place during Japan’s 1990s banking crisis. The Japanese experience is an example of the social costs of the wrong capital structure. By failing to properly recapitalize banks, the Japanese government contributed to the lack of growth during Japan’s lost decade. The similarities with the US experience are eerie.

The most direct test of capital structure irrelevance during the crisis is provided by Veronesi and Zingales. In a pure M&M world, when Secretary Paulson announced the equity infusion and the debt guarantee for large banks in October 2008, the total market value of these banks should have increased by the value of the transfer they were receiving from taxpayers. In fact, Veronesi and Zingales show that the combined market value of the 10 largest banks increased by between $86 billion and $109 billion more than the value of the transfer. This gain is direct evidence of the failure of the M&M assumptions. Exploiting the difference in the probability of bankruptcy of these major institutions, Veronesi and Zingales estimate the cost that these banks would have incurred in bankruptcy to be 22% of the value of assets—hardly an irrelevant friction.

The reason why we ultimately care about deviations from the M&M paradigm is that if capital structure affects investment, then the growth of the economy can be distorted—with potentially large welfare effects. Three papers in this volume assess the importance of the effect on investment. By surveying 1,050 CFOs, Campello, Graham, and Harvey find that more than half the respondents canceled or postponed their planned investments as a result of financial constraints during the crisis. More interesting are their findings when they match firms on the basis of size, ownership, credit rating, profitability, dividend payout status, growth prospects, and industry. Accounting for all these factors, they compare firms that do and do not report difficulty in securing financing. The constrained firms report significantly larger planned percentage cuts relative to their peers in technology spending, capital expenditure, and employment.

Duchin, Ozbas, and Sensoy complement this analysis by looking at corporate investment during the crisis as a function of corporate liquidity before the crisis. Their finding of a positive correlation, which weakens in the third quarter of 2008 when the demand-side effects of the crisis became apparent, is supportive of the importance of a firm’s financial position for its investment policy.

The effect of capital structure on banks’ financing decisions is further illustrated by Iwashina and Scharfstein. In the immediate aftermath of the crisis, bank financing went up—but it did so because firms were drawing down lines of credit that they were afraid might not be available in the future. This is best demonstrated by a “natural” experiment comparing banks that participated in loan syndicates with Lehman to those that did not co-syndicate with Lehman. Banks that were jointly extending credit with Lehman saw unusually large drawdowns after Lehman failed, as customers raced to tap loan commitments that they feared would not be renewed. The banks with the largest Lehman exposure subsequently cut their lending the most, as might be expected if these banks were capital constrained.

That M&M violations are of first order importance does not imply that the M&M propositions are not useful tools of analysis. The enduring legacy of M&M is that simply repackaging risk does not eliminate it. The Saretto and McConnell paper show this in the very particular context of the market for auction rate securities (ARS). Early in the crisis, many of these auctions failed, creating illiquidity in the underlying securities and generating losses for their holders. Saretto and McConnell show that these “failures” are the result of contractual caps on bond yields. The risk of these failures appears to have been captured by the higher yields that these securities carried before the crisis.

The papers assembled in this volume were written early in the crisis. They do not pretend to offer a comprehensive account of what happened. Instead, they carefully study and convincingly analyze specific questions raised by the crisis. Several have already been widely cited in draft form because they paint an interesting and nuanced view of the events. Most important, they build on three decades of corporate finance literature and show that this field has both the theoretical framework and the empirical tools to understand, analyze, and deal with the crisis.
These papers should be viewed as opening thoughts in what we expect will be a long and productive debate about the lessons from the crisis. As this exchange unfolds, we hope that the lessons from 50 years of research since M&M’s original contribution are internalized by other economists and policy makers. If there is one lesson we can draw, it is that corporate financing matters—and it pays to study how to get it right.

References


Anil K Kashyap *, Luigi Zingales
University of Chicago, Booth School of Business and National Bureau of Economic Research, United States
E-mail address: anil.kashyap@chicagobooth.edu
(A.K. Kashyap)

* Corresponding author.