TRENDS
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Modigliani and Miller Live On

STUDYING THE "MM" THEORIES of capital structure and dividend policy has remained de rigueur in most advanced corporate finance courses. MM, of course, stands for Nobel laureates in economics Franco Modigliani and Merton H. Miller, who devised the theorems. Modigliani died recently, on September 25 at age 85. Miller died in 2000.

Let's review the MM Propositions I and II.

MM posited in a 1958 paper that, assuming perfect capital markets and tax neutrality, a firm's mix of debt and equity doesn't affect its value. That's because investors base their valuation of a firm on its profits, not its financing. The weighted average cost of capital bears no relation to the ratio of debt to equity. Leverage increases the expected return to shareholders but also makes the shares riskier because of the earnings that must be earmarked to pay interest on the debt. For every amount of additional debt a company takes on, equity investors will demand a higher return on their shares to compensate for the extra risk of bankruptcy.

Previously it was believed that having the right mix of debt and equity could make a company more valuable. But finding that right mix was based on unorganized rules of thumb. Miller reasoned there had to be "some method for converting corporate finance from a mixture of seat-of-the-pants decisions made by accountants and Wall Street bankers into a structured theory that would produce a better outcome," writes Peter L. Bernstein in his illuminating book, *Capital Ideas: The Improbable Origins of Modern Wall Street*.

But, of course, MM is only an abstraction. In the real world there are taxes, tax shields, transaction costs, nonpublic information, and complex patterns of corporate growth that all influence financial value depending on a company's capital structure. By 1989, Myron Gordon of the University of Toronto cited 48 articles and books that challenged the MM capital structure theory. Still, Modigliani and Miller reasoned that if a company's financing policy at all influences its cost of capital, their theory at least defines the necessary conditions under which that will happen.

By a similar logic, Modigliani and Miller devised a second proposition in 1961: Dividend policy is irrelevant. It makes no difference to investors whether a company pays out all of its profits, some, or none to shareholders. A company's capital investments compete with dividends. Cash paid in dividends must be replaced with debt or equity, they reasoned. The share price will fall by exactly the amount of the cash dividend. Paying dividends will influence how a company finances its growth but won't have a lasting effect on its value in the marketplace.

But in the real world, dividend policy isn't irrelevant because of taxation. The company and investors pay taxes on dividends, which encourages corporate borrowing because interest on debt is a tax-deductible expense, whereas cash dividends come from after-tax corporate income and are taxable to investors (even with the new tax law reducing investors' maximum tax on dividends to 15% from 38.6%). Again, many people challenged the idea and completeness of the dividend irrelevance proposition. But Miller countered that when its dividend predictions fail to hold up, that failure provides insight into what the corporation must do to maximize value.

Over the subsequent 40 years, Modigliani and Miller acknowledged circumstances when capital structure does matter and modified their theories. But they still stood by the bedrock of their central premises.

Franco Modigliani was born in Italy in 1918. As a young man active in the antifascist movement, he fled Italy to France after Mussolini promulgated racial laws in 1938, then went to New York. In New York he earned a doctorate in economics from the New School for Social Research.

Following early teaching jobs, he joined the faculty of Carnegie Mellon University and was part of a circle of economists and mathematicians there in the 1950s that included John Nash, Herbert Simon, and William Cooper. Both Nash and Simon would later win Nobel prizes. Modigliani's Nobel came in 1985, honoring him in part for his insights into corporate finance.

Modigliani joined the faculty at the Massachusetts Institute of Technology in 1962 where he remained until he retired in 1988. He continued to teach at least one course each spring.

Merton H. Miller was born in Boston in 1923 and grew up during the Depression, an experience that won him and others over to the teachings of John Maynard Keynes, the British economist who gave government spending a key role in stimulating an economy. But Miller evolved into a passionate proponent of free-market solutions.

After he was graduated from Harvard in 1943, Miller worked in Washington for the Treasury Department and the Federal Reserve. He earned a doctorate in economics from Johns Hopkins University in 1952 and joined the faculty of Carnegie Mellon University, where he did his pioneering work. In 1961, the University of Chicago's Graduate School of Business appointed Miller a professor, and he taught there until his death. ■