Stockholders' Equity-Related Financial Engineering

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In addition to its basic capital-raising function, equity started to be used in a variety of corporate operations. Companies enter into contracts linked to their own stock in the process of activities related to mergers and acquisitions, compensation or credit-capacity increases. There is evidence of growing complexity of such transactions recently, involving a number of accounting, disclosure and corporate governance issues.

1. Mergers and acquisitions

The explosive growth of technology in the late nineties combined with an easy access to venture capital financing contributed to a proliferation of newly-formed high-tech businesses. This in turn provided many attractive takeover targets for companies eager to dominate emerging industries. As an acquirer's shares were usually highly-valued due to a booming stock market, those shares became a favorite currency in such transactions. Deals concluded in such a market, in the race to purchase most promising technologies, contributed to extremely high prices paid for some of the new companies.

To account for M&A transactions firms could have applied two methods. The pooling method combined assets and liabilities of merging companies, while the purchase method repriced target company assets and liabilities to fair value and accounted for an excess price paid over the net asset value of a target company as goodwill. However, under the purchase method, which was used in the majority of $1.5 trillion of transactions per year, companies were required to amortize goodwill. To downplay goodwill effects on earnings companies promoted self-styled proforma earnings statements, which emphasized the results of their operating activity. Such proforma statements were highlighted and it was claimed they reflected their operations more faithfully than GAAP statements presented next to them. When business downturn came, companies expanded their proforma reporting in a way which blurred it even further, treating the same profit sources asymmetri-

cally, if they contributed losses, recognizing some dubious non-cash revenues or presenting business losses resulting from misjudged operations as one-time, special or non-recurring events.

To remedy the goodwill accounting situation the FASB issued in 2001 two new accounting standards, SFAS No. 141, Business Combinations, and SFAS No. 142, Goodwill and Other Intangible Assets. They eliminate the pooling method and mandate companies to account for mergers and acquisitions entered into after June 30, 2001 using the modified purchase method. The modification eliminates goodwill amortization, introducing instead obligatory write-downs of goodwill, should it become impaired, with impairment test mandatory at least once a year starting from January 1, 2002 [Delaney, Epstein, Nach, Weiss Budak, 2001].

Some acquisitions of subsidiaries or parts of other companies gave rise to contingent operations in purchaser's stock. Sellers reserved usually the right to put the buyer's stock they were paid with back to the acquirer, at a price which may have reflected the share price level, frequently quite high, at the instant of an acquisition. As those prices fell later on, acquirers were forced to pay elevated prices to repurchase their own stock. Because of multi-party transactions, some companies ended up with a third party stock in its assets and issued securities convertible into this stock to dispose of it.

Writing down or amortizing goodwill influenced negatively the value of stockholders' equity. The need to buy back shares drained some companies' cash resources and contributed to more leverage as they usually turned to debt issuance to raise capital needed for operations. In this way using initially inflated value of shares in the M&A activity had and may continue to have a negative impact on their price and volatility.

2. Off-balance sheet contingencies, related parties and consolidation

Many companies moved in recent years to form partnerships, which became known generically as Special Purpose Vehicles or Entities (SPVs or SPEs). SPEs were frequently created by banks and other financial companies to handle securitizations of some portion of loans or receivables and/or to reduce minimum capital requirements. Recently many non-financial companies started to form such entities for the purpose of removing some assets from the balance sheet (e.g. synthetic lease transactions), or to enhance credit capacity. Suppose a company carries a lot of debt on its books. If it raises more debt capital its credit rating may suffer and, consequently, its cost of debt and the cost of capital will increase. To lower these costs a firm may solicit third parties to form an SPE and move some of its assets to the SPE balance sheet. Usually an SPE will be well capitalized, so its credit rating will be high and its debt cheaper than the debt of the parent company.

In practice some SPE operations may be fairly dubious. A firm may book a paper revenue from a sale to such entity and in this way increase its profits. To draw third parties into forming an SPE it may guarantee to them some level of profits regardless of the actual performance of an SPE, or immunize them from the real risk exposure to the SPE debt liability. Such arrangements may violate non-consolidation principles. Even worse, the guarantees may take the form of a contingent liability of the parent company leading to potential losses in the future. Trigger events detailing when the parent company becomes liable for the SPE debt may be included in SPE debt contracts. Examples of such trigger events include the parent company rating falling to junk status or its share price falling below a certain level. It is clear that such arrangements may be very risky to the parent company. Share price trigger in a volatile market may increase parent liabilities, even if reasons for a fall in the share price are not connected with a substantial deterioration of the parent company business.

There is no clear mandatory directive prescribing the rules of consolidation of other parties' accounts. Under ARB ("Accounting Research Bulletin") No. 51 the majority owner of a related legal entity should consolidate its accounts, but this rule is subject to certain reservations concerning exercise of control and risk exposure of other partners in that entity. The SEC guidance is, that if a third party holds a minimum of 3% of a related entity capital, bears corresponding risk and exercises control of that entity, then it may not be consolidated. In practice both qualifications are not sufficiently precise [Powers Jr., Troubh, Winokur Jr., 2002].

3. Stock option compensation

Compensation with stock option plans is supposed to offer an incentive-compatible way of remunerating employees. In recent years many companies, particularly in the technology sector developed extensive plans of this nature. Accounting for such plans remains controversial and, as in other situations where additional shares must be issued, there is a concern for profit dilution.

Current accounting for option plans may be based either on SFAS 123, Accounting for Stock-based Compensation or Accounting Principles Board Opinion 25, Accounting for Stock Issued to Employees [Delaney, Epstein, Nach, Weiss Budak, 2001]. The essential difference between these rules is that APB 25 considers only intrinsic value of options as cost (usually zero in practice as granted options are at- or out-of-the-money), while under SFAS 123 their time value must be also included. SFAS 123, which did not achieve full mandatory status due to the strong opposition by businesses, requires instead, that if APB 25 is followed, a proforma income statement should be provided in regulatory filings, in which options are recognized using the Black-Scholes or binomial option valuation model. Employees who exercise

options pay ordinary income tax on the difference between spot and exercise prices and companies get a tax benefit based on the same number. The size of stock option plans and related tax benefits may be substantial. For example Microsoft had at the end of its fiscal year 2001 898 million stock options outstanding, while the number of shares of common stock outstanding was 5383 million. In its fiscal years 1999, 2000 and 2001 it reported related tax benefits of $3107, 5535 and 2066 million respectively [Microsoft Corporation, 2001].

It is clear that a company can initially lower its costs and improve earnings with option grants. This may be done, however, only when there is a substantial probability that the company's share price will go up and it will continue to report consistent good financial results in the future. Lowering costs in this way gives rise to a need for a higher immediate provision for corporate income tax. The tax benefit, in turn, is received only on employee exercise, perhaps many years later. If business deteriorates and stock falls options may have to be repriced. Option plans may also lead to some abuse. Higher-level officers of a company, who usually get more options, may be tempted to provide high earnings numbers at any cost, for the stock to appreciate, to exercise their options.

The Black-Scholes valuation method does not account for vesting or other contractual details of remunerative options. What inputs should be used in the model may be debatable. Exercise period of these options is usually extensive and this makes their time value high. What volatility to use for a 7 or a 10-year period? A sudden change in the spot price, not unusual for some stocks, may also change the value of an option abruptly. Should perhaps some average be used? SFAS advises using historical volatility computed over a past period of the same length as the relevant option expiry period as an volatility input, which raises well-known doubts about using historical volatilities. The changes in the option value due to such vega, delta and theta sensitivities may be considerable. As an example, Yahoo! reported profit of $14, 48 and 71 million in its fiscal 1998, 1999 and 2000 respectively, while SFAS 123 adjusted proforma treatment would turn it into a loss of $65, 270 and 1265 million [Yahoo! Inc., 2000]. Those figures could easily change further if different inputs were used. In case of Yahoo! high volatility inputs (68–76%) as well as its high share price may have caused such a major discrepancy. If in the future Yahoo! share price becomes more stable volatilities may come down lowering the time value of options. Yahoo! also reports that it produced its adjustments using the average option life of three years. If it were much longer, as is the case with the reported average remaining contractual life of outstanding options of 7.7 years, the time value would be much higher. For example, the Black-Scholes price of the $15 ATM call on Yahoo! shares with 70% volatility and 5% risk-free rate changes from $7.44 to almost $11, if its life is extended from 3 to 7.7 years, and to $6.63 and $10.05 respectively, if slightly lower 60% volatility is used.

To avoid profit dilution due to option exercises companies may engage in stock repurchase operations. As stock option plans become large, some companies manage actively such operations using derivative instruments to reduce its cost. A company can use forward agreements to buy its own shares and sometimes can receive a portion of cash upfront. Or it can sell put warrants on its own stock. While some of these operations enhance immediate cash flow, they may also impair it later. For example, Microsoft discloses in its 2001 annual report structured forward transactions in its own stock executed in 1998 and 1999, with more transactions entered into in 2001. Microsoft reports further sales and settlements of put warrants which improved its cash flow to the amount of $766 and 472 million in its fiscal 1999 and 2000 and decreased it by $1367 in fiscal 2001, a significant figure compared to the total cash flow of 1084, (158) and (898) in those years [Microsoft Corporation, 2001]. In its latest quarterly SEC filing for the September 2001 quarter IBM admits to have "entered into futures contracts linked to the total return of specific market indices designed to economically hedge the exposure relating to a portion of employee compensation obligations" [International Business Machines Corporation, 2001]. Further details and terms of these contracts are not disclosed. Current accounting consensus for such transactions is presented in EITF (Emerging Issues Task Force) Issue 00–19, Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock [Delaney, Epstein, Nach, Weiss Budak, 2001].

4. Enron

Enron, a large energy-trading business with substantial Internet interests and risk management operations which filed for bankruptcy protection in December 2001, pushed some of the above practices to the extreme. Enron engaged in a variety of derivative transactions making markets in some of them, and was hailed on Wall Street as the ultimate innovative company. It reported fiscal 2000 revenues of $100 billion.Enron formed special purpose entities to keep some debt off its own books and in an apparent attempt to hedge some of its bets on fledgling Internet companies. In both cases Enron used its own stock, or derivative contracts on its own stock, as assets for the special entities.

The detailed description of Enron activities and other issues raised by them, even to the extent known at present, is beyond the scope of this paper. Although Enron SEC filings were clearly inadequate and incomplete, it may be judged from some excerpts below, that they contained enough information which should have resulted in an earlier investigation of its practices.

In its annual report for the year 2000 filed with the SEC Enron stated that it "had entered into Enron common stock swaps, with an aggregate notional amount of $121 million, to hedge certain incentive-based compensation plans", entered into the partnerships, which invested in Enron assets and

notes, it "had derivative instruments on 54.8 million shares of Enron common stock", a large amount of them with the related parties, with a dilutive effect on earnings of 7–8%, and it guaranteed some $2 billion of liabilities of unconsolidated equity affiliates. Enron provided also some information about its related party derivative transactions "to hedge certain merchant investments and other assets" and admitted it "recognized revenues of approximately $500 million related to the subsequent change in the market value of these derivatives". It contributed to related parties and "newly-formed entities" with related parties its own shares and contingent contracts to receive Enron common stock and traded with them options on Enron shares including "share-settled collar arrangements on 15.4 million shares of Enron common stock". Enron reported net income of $979 million for that year [Enron Corporation, 2000].

In its March 2001 quarterly report Enron disclosed it fully-acquired and consolidated a major equity affiliate and stated that "in its first quarter of 2001 Enron recognized net revenues of approx. $236.1 million primarily related to the change in the market value of derivative instruments entered into with the Entities in 2000 to hedge certain merchant investments and other assets", and detailed more transactions in its own shares and its derivatives with the entities. Enron presented its net income in that quarter as $425 million and net cash flow as ($288) million [Enron Corporation, 2001].

In October 2001, as it announced its third quarter results, Enron said it was taking a large charge to profits related to its partnerships, which resulted in the quarterly loss of $644 million, and that it was reducing its equity by $1.2 billion. Shortly after that the SEC began an inquiry into Enron's conduct. Enron also formed an independent Special Committee to investigate its SPE operations.

In the quarterly report filed with the SEC in November Enron concluded that certain related parties did not meet criteria for non-consolidation as early as 1997 and admitted some errors in accounting for notes receivable issued by the SPEs. It decided to publish restated earnings for the years 1997–2000 and the first and second quarters of 2001. It also provided much more information about transactions with the entities and named its officers involved. Enron detailed also some other debt obligations of unconsolidated equity affiliates, with clauses specifying trigger events based on Enron's rating and share price, that might result in Enron issuing equity to repay these obligations [Enron Corporation, 2001].

The Special Committee presented its report recently so that more insight is now possible into their transactions [Powers Jr., Troubh, Winokur Jr., 2002]. The main original financial idea behind Enron SPE operations was to profit from a positive value of some forward contracts on its own stock arranged initially in relation to its stock option plan and to offset these gains against the losses of some of its Internet investments. Enron formed partnerships which entered into option or total return swap agreements with Enron to guarantee

the value of those investments. In fact, due to the balance sheet structure of the entities Enron gave guarantees on its investments to itself based on usually contingent contracts on its own stock, so that this strategy did not fully transfer the risk as a true hedge with an independent party would have done. The belief was that Enron stock would continue to rise over an extended period of time thus providing the entities with enough positive net asset value to deliver on guarantees to Enron. In the meantime Enron would be able to offset losses on its investments with gains on hedges provided by the SPEs. This is what Enron was actually doing in 2000 and 2001, presenting ever-attractive earnings to investors. In the meantime both the value of its "hedged" investments and its own stock began to fall. As a result the value of some SPE assets dependent on the value of Enron stock contracted and created the situation, in which hedging vehicles were losing their ability to fulfill their obligations to Enron. Enron avoided booking actual losses for a while by creating another level of derivatives. It entered into collar contracts with the entities, which had a positive value to an SPE, if Enron stock fell below a certain level. The SPEs involved in those transactions were managed by Enron officers through a tangle of partnerships. Simply put, Enron speculated on the future value of its own stock to improve the results of its current business operations.

5. Conclusion

Among operations linked to stockholder's equity, companies use stock repurchases, convertible securities and dividend payments to manage their capital and control structure. More recently, it may be observed, stockholders' equity is frequently used as a currency. This, in turn, creates a desire to hedge its value. Hedging may engender speculation. Why not bet on a company's own stock, when there is also a natural informational advantage? Accounting rules for complex arrangements a company may set up for such deals are not sufficiently clear and their disclosure seems inadequate. Reporting practices for many such transactions are not transparent enough, and may lead to both material and economic misrepresentation in corporate reports. Further, some contracts related to stockholders' equity may create excessive contingent liabilities in the future and thus weaken a company's financial position.

Financial statements are instituted so that shareholders, creditors and investors can develop a fair and informed view of the business situation of a company and evaluate risks and rewards offered by investment in its securities. This process lies at the heart of the proper functioning of financial markets, where specific risks should be transfered to those who are prepared to hold them. Insufficient or obscure disclosure disrupts this basic process. As a consequence confidence in the market may be eroded leading to more volatility and higher costs of corporate operations.

References

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