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## Financial leverage changes associated with corporate mergers

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#### Abstract

We empirically examine whether firms increase financial leverage following mergers. Firms could increase financial leverage either because of an increase in debt capacity or because of unused debt capacity from pre-merger years. We find that financial leverage of combined firms increases significantly following mergers. A cross-sectional analysis shows that the change in financial leverage around mergers is significantly positively correlated with the announcement period market-adjusted returns. Further tests indicate that the increase in financial leverage is an outcome of an increase in debt capacity, although there is weak evidence that some of the increase in financial leverage is a result of past unused debt capacity. © 2000 Elsevier Science B.V. All rights reserved.

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#### 1. Introduction

This paper empirically examines whether merging firms increase their financial leverage following mergers. An increase in financial leverage could arise due to two

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potential reasons which are not mutually exclusive: (1) an increase in debt capacity, and (2) unused debt capacity of target and acquiring firms from pre-merger years. Lewellen (1971) postulates that merged firms can increase their financial leverage without increasing the pre-merger level of riskiness because of an increase in debt capacity that results from mergers. An increase in financial leverage benefits shareholders of merging firms through the tax deductibility of interest payments on corporate debt.

An increase in leverage following mergers might also enhance shareholder wealth through an expropriation of wealth from bondholders. An immediate consequence of a higher debt capacity following mergers is the co-insurance effect — existing bondholders are better off because debt becomes relatively safer. Shareholders can appropriate part or all of the benefits from bondholders by financing the merger with debt and increasing financial leverage of the merged firm (see Kim and McConnell, 1977; Shastri. 1990 for details).<sup>1</sup>

Existing evidence on changes in financial leverage or the associated tax motivation for mergers is inconclusive. While Auerbach (1988) concludes that tax factors were not a major force driving the takeover activity of the 1970s, Hayn (1989) finds some evidence of tax benefits from mergers. Although a detailed analysis of changes in financial leverage and the benefits from higher leverage in the context of mergers is not available, studies other than mergers provide evidence supporting the tax-based theories of financial leverage (see Givoly et at., 1992; Mackie-Mason, 1990).

A more powerful test of an increase in debt capacity hypothesis is to cross-sectionally correlate wealth gains to shareholders of merging firms with changes in financial leverage around mergers. If the present value of future benefits from expected increases in leverage are capitalized at the time of the merger announcement, we expect a positive correlation between announcement period market-adjusted returns and changes in financial leverage around mergers. While the evidence of positive market-adjusted returns may be consistent with many alternative explanations, a cross-sectional analysis provides direct evidence of benefits from financial leverage. We control for several other explanations by including additional control variables.<sup>2</sup>

Merging firms might also be able to increase financial leverage following mergers because target and acquiring firms have unused debt capacity from pre-merger years. We examine whether target or acquiring firms have unused debt capacity using two different benchmarks. First, we model financial leverage and then take the difference

<sup>&</sup>lt;sup>1</sup> In a similar discussion, Auerbach and Reishus (1988a) state, "Most hypotheses about optimal capital structure involve individual firms having interior optimal debt-equity ratios determined by the increasing costs to leverage, associated for example, with increasing expected bankruptcy costs, agency costs, or the probability of tax losses. It is, therefore, possible that the combinations would involve increased leverage."

<sup>&</sup>lt;sup>2</sup> As in Auerbach and Reishus (1988a,b,c) and Hayn (1989), we control for potential tax benefits from stepping up of target firm's asset basis, unused net operating loss carryforwards, and investment tax credit carryforwards. We control for benefits from improvements in the operating performance as in Healy et al. (1992). We include the target and acquiring firms' pre-merger market based performance to control for the disciplinary motive for mergers. We include quarterly senior debt rating changes for acquiring firms around mergers because benefits could arise as a result of expropriation of wealth from bondholders. Finally, we control for the choice of financing.

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