



Research Report

The effect of in-process research and development capitalization on M&A and purchase price allocations

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ABSTRACT

We investigate whether the change in accounting treatment of in-process research and development cost (IPRD) from expensing to capitalization affects the frequency of acquiring target firms with IPRD and the purchase price allocated to IPRD. We examine 1490 acquisitions in high-technology industries using a unique data set of purchase price allocations. For our sample as a whole, we find that the accounting rule change does not reduce the number of acquisitions with IPRD or the purchase price allocated to IPRD, but our results vary by industry. We provide evidence that the frequency of acquisitions with IPRD decreased for two of the four industry groups and IPRD intensity (IPRD/Assets Acquired) decreased for two industry groups. Our study contributes to research that examines whether mandatory accounting changes affect company economic decisions and research on managing earnings using IPRD.

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Introduction

This paper investigates whether the change in accounting treatment of in-process research and development cost (IPRD) from expensing to capitalization affects the frequency of acquiring target firms with IPRD and the purchase price allocated to IPRD. IPRD is the value allocated to incomplete research and development projects in business combinations and asset purchases. SFAS 141(R) requires companies to capitalize IPRD in business combinations starting from 2009 ([Financial Accounting Standards Board \(FASB\), 2007](#)). Prior guidance for IPRD in business combinations required companies to expense IPRD immediately on the acquisition date ([FASB, 1974](#); [FASB, 1975](#)). This paper examines how the change in accounting treatment of IPRD affects acquisition practices in high-technology industries using a unique data set of purchase price allocations in mergers and acquisitions (M&A) during the period 2003–2011.

SFAS 141(R) no longer provides the bidding firms an incentive to allocate more of the purchase price to IPRD. Under the old rules when companies allocated more of purchase price to IPRD and less to goodwill and other intangible assets, they exchanged a larger current write-off for reduced future impairment charges or amortization, avoiding the drag on future profits of M&A. The mandatory expensing rule on IPRD also increased future return on assets by understating the recorded acquisition assets. Because of these two effects the old rules provided the opportunity to paint a rosy picture of overvalued acquisitions and possibly justify M&A that would otherwise not be pushed forward. Under the new rules with IPRD capitalization there are no longer incentives to allocate more of the purchase price to IPRD.

We investigate two potential effects of SFAS 141(R). First, we test whether bidding firms acquire targets with IPRD less frequently after the change in accounting treatment of IPRD. This test contributes to research on whether mandatory accounting changes affect company economic decisions. [Beatty \(2007\)](#) states, “standard setters should be interested in how economic behavior changes as a result of their standards,” and also comments, “there has been little published academic research in accounting that has examined whether firms actually

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change their economic behavior in response to accounting changes.” Second, we investigate whether the acquiring firms allocate less of the purchase price to IPRD after the change in accounting treatment of IPRD. Our second test contributes to research on managing earnings with IPRD. Previous research found that SEC scrutiny in 1998 reduced IPRD (Dowdell, Lim, & Press, 2009; Dowdell & Press, 2004), but the abolishment of pooling and the replacement of goodwill amortization with periodic impairment testing did not affect IPRD (Slavin & Khan, 2006). Ours is the first paper, to the best of our knowledge, to investigate whether the change in accounting treatment of IPRD affects the frequency of acquisitions with IPRD as well as the amount of the purchase price allocated to IPRD.

Overall, for our sample of 1490 acquisitions made by high-technology firms from 2003 to 2011, the frequency of acquisitions with IPRD remained similar before and after the rule change (35% before versus 32% after). This suggests that the IPRD accounting rule change did not affect firm decisions to acquire targets with IPRD. However, our test results varied by industry: the proportion of acquisitions with IPRD decreased for two of the four industry groups (SIC 3570–3861: machinery, equipment, and instruments and 7371–7379: computer and data processing services) and it unexpectedly increased for one industry (SIC 2833–2836: pharmaceuticals).

We investigated our second research question using 507 acquisitions with IPRD. We did not find that the rule change caused a decrease in the purchase price allocated to IPRD, but again the test results varied by industry. For the entire sample there is evidence that the purchase price allocated to IPRD increased. By industry there is evidence that IPRD decreased for SIC 2833–2836 and 3570–3861 firms, especially when the sample is limited to high IPRD acquisitions. However, IPRD in SIC 7371–7379 acquisitions does not appear to be affected by the rule change. We conjecture that the concurrent disclosure requirement change for IPRD with SFAS 141(R) affects the test results for both of our research questions.

The next section provides background and our two research questions. This is followed by a description of data and results. We provide concluding remarks in the final section.

Background and research questions

Effective with acquisitions occurring on or after January 1, 2009 the accounting treatment of IPRD changed. For acquisitions occurring through December 31, 2008 IPRD had to be immediately expensed on the acquisition date based on FASB Interpretation No. 4 (FASB, 1975). This prior guidance is still in effect for IPRD in asset purchases and is consistent with the required expensing of research and development costs (FASB, 1974). Beginning January 1, 2009 IPRD in business combinations had to be capitalized as an indefinite-life intangible asset.

The FASB changed the accounting treatment of IPRD for two reasons. First, it concluded that expensing IPRD “resulted in information that was not representationally faithful” because IPRD “generally will satisfy the definition of an asset” (FASB, 2007, para. B150 and B152). Second, the rule change “further the goal of international convergence of accounting standards” (FASB, 2007, para. B150). However, the FASB chose not to extend the asset recognition treatment to purchases of

IPRD outside a business combination (asset purchases) because that would require additional deliberation time.

As discussed in Dowdell et al. (2009), there is considerable latitude in valuing IPRD in an acquisition due to a number of judgments involved. Additionally, because of the expense treatment under the pre-2009 rules there was an incentive to allocate more of the purchase price to IPRD to 1) reduce future impairment charges or amortization and 2) increase return on assets (because of the numerator effect of reduced impairment or amortization charges and the denominator effect of understated assets). Prior research suggests that external financial statement users prefer writing off IPRD to capitalizing it. In an experimental study, Hopkins, Houston, and Peters (2000) found that analysts valued stocks more highly when acquisition costs were written off compared to when acquisition costs were capitalized. In an event study, Jeffrey, Clem, and Cowan (2004) found that company stock prices reacted negatively to news that accounting rules would change to mandatory capitalization of IPRD.

Consequently, in the late 1990s companies were overstating the purchase price allocated to IPRD to achieve the benefits above. In September 1998, the SEC asserted that companies were allocating too much of their acquisition costs to IPRD (Dowdell & Press, 2004). In response to the SEC pressure, some companies restated their IPRD lower, and new acquirers reduced their IPRD charges on subsequent acquisitions (Dowdell & Press, 2004). Dowdell et al. (2009) found that IPRD relative to the pre-acquisition research and development costs (R&D) of the target decreased in acquisitions following the SEC pressure.

Prior research also suggests that firms were recording IPRD to justify the acquisition of over-valued targets and employing IPRD as an earnings management device. Dowdell et al. (2009) found that firms with high IPRD compared to target R&D were in a better position to absorb the large write-off and had more to gain from the IPRD post-acquisition profit boost. Hsu, Kim, and Song (2009) found that stock returns at the time of the acquisition announcement were more negative for IPRD acquisitions, which the authors interpreted as evidence that the targets were overvalued.

Beatty (2007) states, “the issue of whether accounting standard setters should consider resulting changes in economic behavior when writing accounting standards is controversial,” and also observes, “The level of controversy about changes in management behavior has not been matched by the amount of research in this area.”¹ Most of the research she cites finds that changes in accounting rules on R&D, post-employment benefits, valuation of investments, and leases are associated with corresponding changes in various economic decisions.² However, as she notes, the

¹ Fasci and Willis (2013) and Webinger, Comer, and Bloom (2013) are examples of studies that examine the effect of an accounting rule change on financial reporting. Fasci and Willis (2013) find that SFAS 143, Accounting for Asset Retirement Obligations (AROs), increased reporting of AROs and improved clarity in identifying them. Webinger et al. (2013) find that financial institution managers did not change the fair value classification of financial assets but did increase disclosure verbiage in response to FASB FSP 157-4.

² In recent research on the effect of accounting changes on economic behavior, Derrick (2013) finds that donors decrease their cash contributions after charities recognize pledges as revenue according to SFAS No. 116.

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