Health Economics / Volume 19, Issue 8 / pp. 1002-1005

Health Economics Letters

Drug development costs when financial risk is measured using the Fama–French three-factor model

John A. Vernon ✉, Joseph H. Golec, Joseph A. Dimasi

First published: 12 July 2010

https://doi.org/10.1002/hec.1538

Abstract

In a widely cited article, DiMasi, Hansen, and Grabowski (2003) estimate the average pre-tax cost of bringing a new molecular entity to market. Their base case estimate, excluding post-marketing studies, was $802 million (in $US 2000). Strikingly, almost half of this cost (or $399 million) is the cost of capital (COC) used to fund clinical development expenses to the point of FDA marketing approval. The authors used an 11% real COC computed using the capital asset pricing model (CAPM). But the CAPM is a single factor risk model, and multi-factor risk models are the current state of the art in finance. Using the Fama–French three factor model we find that the cost of drug development to be higher than the earlier estimate. Copyright © 2009 John Wiley & Sons, Ltd.

REFERENCES

DiMasi JA, Hansen R, Grabowski HG. 2003. The price of innovation: new estimates of drug development costs. *Journal of Health Economics* **22**: 141–185.

Web of Science® | Google Scholar

Fama EF, French KR. 1993. Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics* **33**: 3–56.

Web of Science® | Google Scholar

PubMed | Web of Science® | Google Scholar

Graham J, Harvey C. 2001. The theory and practice of corporate finance: evidence from the field. *Journal of Financial Economics* **60**: 187–243.

Web of Science® | Google Scholar

Poterba JM, Summers LH. 1995. A CEO survey of U.S. companies time horizons and hurdle rates. *Sloan Management Review* (Fall) **37**(1): 43–53.

Web of Science® | Google Scholar

Citing Literature

Download PDF

WILEY