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Journal of Financial Economics 81 (2006) 283–309
JOURNAL OF Financial ECONOMICS
www.elsevier.com/locate/jfec

Hedging, speculation, and shareholder value ☆

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Received 15 July 2003; received in revised form 16 February 2005; accepted 21 March 2005
Available online 27 January 2006

Abstract

We document that gold mining firms have consistently realized economically significant cash flow gains from their derivatives transactions. We conclude that these cash flows have increased shareholder value since there is no evidence of an offsetting adjustment in firms' systematic risk. This finding contradicts a central assumption in the risk management literature that derivatives transactions have zero net present value, and highlights an important motive for firms to use derivatives that the literature has hitherto ignored. Although we find considerable evidence of selective hedging in our sample, the cash flow gains from selective hedging appear to be small at best.

JEL classification: G11; G14; G32; G39

Keywords: Corporate risk management; Hedging; Speculation; Risk premium; Hedging benefits

☆We thank Söhnke Bartram, Kalok Chan, Sudipto Dasgupta, Louis Ederington, Jie Gan, Vladimir Gatchev, Christian Hofmann, Alfred Lehar, Scott Linn, Gordon Phillips, Tim Riddiough, Russell Robins, G. William Schwert (the editor), Raman Uppal, seminar participants at HKUST, the National University of Singapore, the University of Oklahoma, Lancaster University, the University of Hannover, the University of Mannheim, and Humboldt University, and conference participants at the 2003 European Finance Association meeting, 2003 German Finance Association meeting, and the 2003 HKUST Finance Symposium for their comments and suggestions. We are especially grateful to an anonymous referee for helping to substantially improve the paper. We are also grateful to Ted Reeve for providing us with his derivative surveys of gold mining firms, and Leung Kam Ming for excellent research assistance. This research has been partially supported by the Research Grants Council of Hong Kong (Grant No. HKUST6138/02H). Fernando gratefully acknowledges financial support from the National Science Foundation (Grant No. ECS-0323620). We are responsible for any remaining errors.
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0304-405X/$ - see front matter
doi:10.1016/j.jfineco.2005.03.014

> The company recognizes that opportunities may exist to improve spot exchange rates as well as gold and silver spot prices through hedging.—Placer Pacific Limited, Annual Report, 1996.

> We won't hedge our gold reserves! We believe gold prices are going to rise!—Franco-Nevada, Annual Report, 1999.

1. Introduction

The above statements are puzzling because the existing theories of corporate hedging assume that the use of derivatives does not itself increase a firm's value. Rather, the use of derivatives is thought to add value by alleviating a variety of market imperfections through hedging. Why, then, do some firms claim that ''hedging'' (as in the case of Placer Pacific) or ''not hedging'' (as in the case of Franco-Nevada) can directly enhance their revenues? First, it is possible that managers believe that they can create value for shareholders by incorporating speculative elements into their hedging programs. It is also possible that the pricing of derivatives contracts in some markets gives rise to positive derivatives cash flows. These issues have received little attention in the literature on corporate risk management, possibly due to a lack of adequate firm-specific data on derivatives usage.

We address the question of whether using derivatives is intrinsically valuable by examining a unique database that contains quarterly observations on all outstanding gold derivatives positions for a sample of 92 North American gold mining firms from 1989 to 1999.[1] This data set allows us to infer and analyze on a quarterly basis over a ten-year period the actual cash flows that stem from each firm's derivatives transactions. We compare the actual cash flows with benchmarks to determine both whether firms make or lose money using derivatives, and what the sources of these gains or losses may be.

We find that the firms in our study generate positive cash flows that are highly significant both economically and statistically. Moreover, these positive cash flows are statistically significant in both rising and falling markets. Our sample firms realize an average total cash flow gain of $11 million, or $24 per ounce of gold hedged per year, while their average annual net income is only $3.5 million. The bulk of the cash flow gain appears to stem from persistent positive realized risk premia, i.e., positive spreads between contracted forward prices and realized spot prices. We find no evidence that the use of derivatives has increased the systematic risk for the firms in our sample. These findings imply that firms' derivatives transactions translate into increases in shareholder value.

Furthermore, we find considerable excess volatility in firms' hedge ratios over time, which is consistent with evidence provided by Dolde (1993) and Bodnar et al. (1998) that managers incorporate their market views into their hedging programs. Stulz (1996) refers to this type of speculation as ''selective hedging.'' However, we find that the average cash flow gains from selective hedging are small at best.

We make two major contributions to the risk management literature. First, we show that a central tenet of hedging theory, that derivatives transactions have zero net present value,

[1] An extensive literature studies hedging activity in the gold mining industry. See, for example, Tufano (1996, 1998), Shimko and McDonald (1997), Petersen and Thiagarajan (2000), Chidambaran et al. (2001), and Adam (2002). Tufano's 1991–1993 data set and our 1989–1999 data set share a common source, namely, the quarterly survey conducted by Ted Reeve, an analyst at Scotia McLeod, of outstanding gold derivatives positions at major North American gold mining firms.