



How corporate derivatives use impact firm performance?



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ABSTRACT

It is an empirical question over whether the use of derivatives hedging among firms is actually effective in mitigating financial risks, and hence positively contributes to firm performance. This study uses three performance models (firm market value, ROA and ROE) and a two-stage regression to simultaneously estimate the performance and derivatives use models, to address any possible endogeneity problem. It provides empirical evidence, which is rare in Malaysia and developing markets, of the effectiveness of using derivatives for hedging among firms. Specifically, this study finds that capital market imposed a 'discount' on derivatives users – derivative use is negatively associated with firm market value. However, derivative use contributes to better ROA (and ROE), a key driver of firm market value. Firms with lower operating income margin tend to use derivatives to protect this already thin margin from the potential financial risks. Finally, derivatives users are, overall, better at generating sales from assets than non-users because derivatives use allow them to manage the associated incremental financial risks better.

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1. Introduction

Managers are risk averse, and hence firms often embark on corporate hedging to mitigate risk (see [Stulz, 1984](#); [Allayannis and Weston, 2001](#)). It is common for managers to use derivatives to hedge financial risk – in particular those risks that can arise from adverse changes, over relatively short time horizons, in commodity prices, foreign currencies and interest rates (see [Fetimi and Luft, 2002](#)). While the use of derivatives to hedge risks can produce benefits, derivative contracts also entail additional costs and new exposures (potential threats) – known as derivatives risk (see [Stulz, 2004](#)). When the use of derivatives causes losses and adversely affects a firm's performance, it can make headlines (see [Adam and Fernando, 2006](#); [Stulz, 2004](#)). In the report to shareholders in the company's 2002 annual report, Berkshire Hathaway's CEO Warren Buffet describes derivatives as "financial weapons of mass destruction, carrying dangers that, while now latent, are potentially lethal" ([Buffett, 2003](#); also see [Bartram et al., 2011](#); and [Stulz, 2004](#)). In short, it is an empirical question over whether the use of derivatives hedging among firms is actually effective in mitigating financial risks, and positively contributes to firm performance. Hence, the first aim of this study is to provide an answer to this question by examining the effectiveness of derivatives use among firms.

While there is some anecdotal evidence of individual firms suffering hedging losses from time to time ([Adam and Fernando, 2006](#); [Bartram et al., 2011](#)), some past academic studies have found that derivatives have a generally positive effect on firm performance. These can include better firm valuation ([Allayannis and Weston, 2001](#); [Allayannis et al., 2012](#); [Bartram et al., 2011](#); [Perez-Gonzalez and Yun, 2013](#)), lower cost of equity ([Gay et al., 2011](#)) and a reduction in total and systematic risks ([Bartram](#)

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et al., 2009; Graham and Rogers, 2002). However, the evidence is mixed outside the US market. For instance, some country-specific studies using non-financial firms from France (Belghitar et al., 2013; Khediri, 2010) and Australia (Nguyen and Faff, 2010) suggest that derivatives use may in fact be associated with lower (or has no impact on) firm valuations. Furthermore, empirical study published on derivatives use and its effectiveness in developing markets or middle-income economies is rare.

This study is based on a sample of Malaysian listed firms. The Malaysian context provides an interesting institutional setting, which is unique to developing countries and emerging markets, as compared to circumstances in other countries, where most existing studies were carried out. Like the US, UK and Australia, Malaysia has a common law system (La Parta et al., 2006) and Anglo-Saxon accounting system (Nair and Frank, 1980; Nobes, 1998). However, it is a developing and middle-income economy, weaker in investor protection and firm ownerships are far more concentrated as compared to these countries (Fan and Wong, 2002; Luez et al., 2003). According to Bartram et al. (2009), firms in middle-income economies with less liquid derivatives markets are less likely to hedge. Bartram (2014) further noted that risk reduction through using derivatives is more effective if shareholder rights are strong, creditor rights are weak, or derivatives are readily available (also see Khediri, 2010); while Allayannis et al. (2012) found that there is a significant hedging premium in firm market valuation associated with strong country-specific governance. In developing markets, where these attributes are less apparent, the effectiveness of derivatives use in mitigating risk can be affected. Furthermore, recent studies on Malaysian firms have focused on the determinants of derivatives usage rather than on the effectiveness of their usage on firm performance (for instance, see Ameer et al., 2011; Chong et al., 2013). Hence, it is important to ascertain how Malaysian firms have performed when using derivatives for hedging.

At the same time, there is a lack of empirical evidence on the relationship between derivatives use and a number of key accounting variables, in particularly the performance indicators such as operating income, net profit and return on assets. In practice, markets and analysts focus on these reported performance indicators to analyse and evaluate firm performance for investment decisions. In fact, a key input to these indicators is reported earnings: there is a sizable amount of literature supporting the importance and decision usefulness of reported earnings to market valuation and investment decisions. Also, some of these accounting variables are strategic key performance indicators set for managers, such as return on assets (ROA) and return on equity (ROE), or are used as debt covenants. Even more important, some of these measures are linked to key contracts of firms, such as the appointment and compensation of key personnel, as well as to debt financing. Studying these performance indicators, as the second aim of this study, provides an insight into the direct and operational impacts of derivatives use on firm performance – that is on how derivatives use contributes to firm performance.

This study contributes to the body of knowledge on derivatives usage as follows. First, it provides empirical evidence of the effectiveness of using derivatives for hedging among firms in Malaysia. Such empirical evidence is rare in Malaysia and in developing markets in general, as most existing studies have focused on developed markets. It complements the evidence from country-specific studies that derivatives use is associated with lower firm market value. It supplements the evidence from international studies, which involving developing countries including Malaysia, that derivatives use contributes positively to profitability e.g. ROA and ROE. Though the institutional setting to certain extent mirrored the developed countries, the relatively lower capacity and expertise among managers in a developing country like Malaysia may have impact on the effective use of derivatives contracts for hedging. Similarly, while the Malaysian derivatives market is equipped with most of the basic derivatives contracts which could be found in the developed markets, it is relatively less liquid and this will increase the cost of derivatives hedging – and subsequently affects the effectiveness of derivative use on the ROA/ROE of firms. In a survey on Malaysian listed firms, Othman and Ameer et al. (2011) found that managers' concerns on derivatives use include lack of expertise in handling derivatives, difficulty in understanding complex derivatives and transaction costs of derivatives contracts. Hence, this study concludes that derivatives use contributes to better ROA (and ROE), a key driver of firm market value. This study generalises its findings to developing markets under common law and Anglo-Saxon accounting system, which are relatively weaker in investor protection and firm ownerships are far more concentrated as compared to more developed countries.

Second, it measures the direct impacts of derivatives use on the financial performance of the sample firms. It introduces a new perspective on the effectiveness of derivatives usage among firms: that the use of derivatives can contribute to ROA and ROE through better asset turnover. Collectively, these provide evidence on how derivatives use contributes to better firm performance. These findings have significant practical implications for firms considering using derivatives when formulating and implementing their operating, investing and financing policies, as well as the linkages between these major decisions.

The remainder of this paper is organised as follows. The next two sections discuss the literature relevant to derivatives usage and its effectiveness, and the research design. The fourth section presents the findings and discussion, and the final section contains the conclusions.

2. Literature review and hypothesis development

In the paradigm of Modigliani and Miller's classical capital structure theory (1958), corporate risk management is irrelevant in maximising firm value in a perfect capital market; shareholders can manage risk themselves by diversifying their investments where necessary. However, in the real world where capital markets are imperfect, corporate risk management might be benefiting firm value when agency costs and corporate taxes are taken into consideration (Aretz and Bartram, 2010). In practice, derivatives markets have been rapidly growing around the globe and derivatives contracts have become key hedging instruments and prominent to risk management among firms (see Perez-Gonzalez and Yun, 2013).

Managers may forgo value-enhancing projects, due to the agency conflicts with equity holders, or substitute risky projects with safer ones, due to agency conflicts between equity and debt holders, and these behaviours increase agency costs and lower firm

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