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Exchange rate exposure and the use of foreign currency derivatives in the Australian resources sector

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ABSTRACT

In this paper, we provide a re-examination of the exchange rate exposure and foreign currency derivative use by Australian resources firms in the 2006–2009 period which is characterized by increased volatility caused by the global financial crisis. In particular, we consider the interaction of a resources firm's exchange rate risk exposures, foreign currency derivative use and the global financial crisis simultaneously. Conforming to expectations, our results indicate that more companies are significantly exposed to exchange rate risk since the onset of the financial crisis. However, there is a lack of evidence that the use of foreign currency derivative is more effective in alleviating exchange rate exposures during the crisis as opposed to the pre-crisis period.

1. Introduction

Exchange rate fluctuations have become a major source of risk to multinational corporations around the world since the collapse of the Bretton Woods system in the early 1970s. However, continuous innovations in financial markets and products have equipped corporations with a variety of tools to effectively manage their exchange rate (FX) exposures. As a matter of fact, exchange rate risk is one of the most widely hedged corporate risks. The popularity of foreign currency derivatives (FCD) as a hedging device provides an interesting reason for research that explores the relationship between FCD and FX exposure. Although not entirely unusual for empirical research, the existing evidence on the

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impact of FCD on corporate FX exposure is, however, nowhere near conclusive.[1] More importantly, little research has been done to shed lights on the dynamic of the relationship. For example, it is unknown whether the FCD–FX exposure relationship is time varying and FCD is more effective in alleviating FX exposures in the situation of exchange rate shocks. From a financial management's perspective, it is also of utmost interest to gauge a better understanding of corporate behaviors in relation to their risk management practices when faced with unexpected changes in their exposure profile.

Accordingly, in this paper, we aim to re-examine the relationship between corporate hedging through the use of FCD and its resultant impact on FX exposures. For reasons that will be explained shortly below, we choose to examine this important research question using a sample of Australian resources firms. In addition, we investigate whether the global financial crisis (GFC) had any impact on the dynamic of this relationship and how corporate risk management practices responded to unexpected changes in their level of FX exposures. In this respect, the paper enriches the literature surrounding the time varying property of FX exposures and its relationship with corporate usage of FCD.

As highlighted above, we choose to re-examine this important empirical relationship by focusing on a sample of Australian resources firms during a period that encompasses the global financial crisis. Our sampling choice is based on a number of important considerations. First, the resources sector is the backbone of the Australian economy that accounts for substantial export revenues.[2] In fact, the Australia's resources sector is the country's largest single export sector and it is recognized as a high quality resources supplier in the world. Second, and more importantly, resources firms tend to have better defined foreign exchange exposures than industrial firms. The reason for this is two-fold: resources firms are heavily export oriented with Australia being the world leading provider of many mining and metal products. In addition, commodities prices are often denominated in USD. As a result, resources companies commonly have exposure to fluctuations in the AUD/USD exchange rate.[3] On the contrary, industrial firms are significantly more diverse in their operations and revenue structures and accordingly are less likely to have a relatively uniform set of exposures. The prevalence of FX exposure in the resources sector helps ensure that foreign currency derivatives FCD are generally used for hedging purposes as opposed to speculative reasons, a practice that can potentially cloud the relationship between exchange rate exposure and corporate use of FCD. The homogeneity of resources firms' exposure profiles also underpins our sampling choice in light of the endogeneity issue highlighted by Aretz and Bartram (2010) and Bartram et al. (2011). Endogeneity, in the context of this paper, refers to the fact that corporate risk management practice through the use of FCD can impact exchange rate exposure. However, exchange rate exposure which is determined by a set of firm characteristics can simultaneously influence firm decision to use FCD. By focusing on a single industry where firm exposures are rather transparent and homogenous, we can be ascertained that any difference in firm exposure can be clearly attributed to differences in the risk management practices as opposed to differences in their *ex-ante* industry specific financial characteristics. Addressing endogeneity is of particular importance for research dealing with FX exposure as it has been established in the extant literature that FX exposure is an industry specific phenomenon (Bodnar and Gentry, 1993; Shin and Soenen, 1999; He and Ng, 1998; Nguyen and Faff, 2003). Our sampling choice, hence, enables us to document a more robust empirical relationship between FCD and exposure than previously documented.Another contribution of our paper lies in the examination of firm exposures and their corresponding FCD usage when faced with an exogenous FX shock brought about by the GFC. The

[1] For example, Bali et al. (2007), Copeland and Joshi (1996) and Hentschel and Kothari (2001) do not find any relationship between FCD use and FX exposure. On the other hand, a number of authors including Nguyen and Faff (2003), Hagelin and Pramborg (2004) and Chiang and Lin (2005) concur that FCD use has an alleviating impact on FX exposure.

[2] According to the Australia Export Fact sheet provided by the Department of Innovation, Industry, Science and Research, the mining sector was the top export sector by revenue in 2009. For more information, see http://www.innovation.gov.au/.

[3] It is worthwhile to note that apart from the USD, the sample firms are also exposed to changes in the value of other major currencies and that currency-specific exposure is a very important consideration. However, due to the fact that commodity transactions are primarily quoted and settled in USD and the USD is indeed the currency most frequently hedged by our sample firms, we choose to focus our analysis on this most relevant source of exchange rate exposure.