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Trading income and bank charter value during the financial crisis: Does derivatives dealer designation matter?

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ABSTRACT

Derivative markets have exploded over the last decade, remained active in the midst of the 2007–2009 financial crisis and continue to be dominated by a small group of bank holding companies (BHC). BHC motives for derivative usage are usually tied to hedging purposes (balance sheet risk management), trading purposes (profit motives) or some combination thereof. This paper examines the relationship between derivative trading income and bank charter value for 27 BHC between 2001Q1 and 2011Q3. We find that the impact of derivative trading income on bank charter value, using Tobin's *Q*, is very small and seems to be tied to BHCs derivatives dealer trading designation. We also find that trading incomes are a modest fraction of net operating revenue, highly volatile, and did not contribute to overall BHC income during the crisis.

1. Introduction

In the banking industry, managers are tasked with a dual objective of managing the various sources of risk inherent in their business while maximizing shareholder value. Bank managers must balance between these objectives since increases in shareholder returns usually come at a cost of increased risk. Over the last few decades, we have witnessed rising popularity in the bank use of derivatives to manage various forms of risk they are exposed to including interest rate, foreign exchange and credit risk. A derivatives security is commonly defined as a financial security whose payoff is tied to (or derived from) a previously issued security. Derivative securities (e.g. swaps, futures, forwards, option contracts, among others) generally involve an agreement between two parties to exchange a standard quantity of an asset or cash flow at a predetermined price and an agreed upon future date. Thus, derivatives involve the buying and selling, or transfer of risk.

According to Sinkey and Carter (2000), banks participate in the derivatives market as dealers, end users or both. They also state that as end users, banks can use derivatives either to hedge against unexpected changes in interest rates, foreign exchange rates, or commodity prices or to speculate on the future movement of these economic variables. These authors also note that only the largest banks act as dealers by providing over-the-counter (OTC) derivative products to nonfinancial firms and other banks. It is also well documented that derivative activities are centered in a handful of large banks. Per the 2011Q4 bank trading and derivatives activities report prepared by the Office of the Comptroller of the Currency (OCC), there are five large commercial banks that account for 96% of all banking industry notional amounts of derivatives while 99% of the total is held by the top 25 banks. The industry concentration among the dealer banks as measured by the Herfindahl Index had remained well above the 30% level between 2001Q4 and 2008Q4, and since 2011Q4 has settled modestly below the 25% level as seen in Fig. 1. Conventional wisdom suggests that higher levels of industry concentration allow for monopolist behavior which is a source of market power that may favorably impact a bank's charter value.

The potential for significant fee income generation has led banks to participate in derivative markets to offer risk management services to its corporate clients. This trend has grown over the last few decades with fees incomes representing an important revenue source to help offset flat to declining spreads earned on traditional lending business. It is clear that a select group of large banks,

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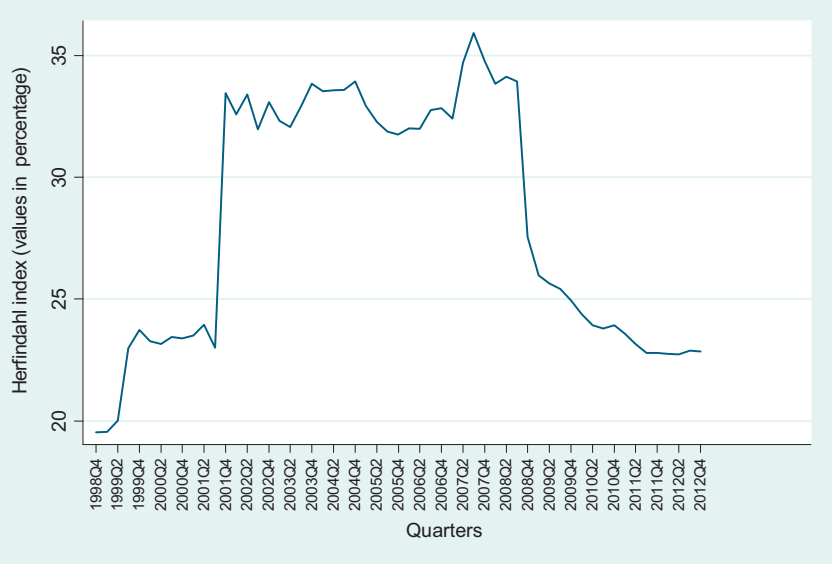

Fig. 1. Derivative contracts Market-Herfindahl index. *Notes*: The Herfindahl Index is computed from the reported notional amounts of derivative contracts outstanding for each of the top 25 commercial banks, savings and loans associations (S&Ls) and trust companies (TCs) along with aggregate notional amounts for the remaining commercial banks, S&L's and TC's that engage in derivative activity. The information is extracted from the quarterly reports of derivative activities that are available through the U.S. Department of the Treasury's Office of the Comptroller of the Currency (OCC) at the following website http://www.occ.treas.gov/topics/capital-markets/financial-markets/trading/derivatives/derivatives-quarterly-report.html (last accessed on 08.21.13).

namely those that focus on derivative activities, earn far more fee income than those banks that are not set up to participate in the derivatives market. It is also known that dealing and trading in derivative products through a bank profit center requires substantial investment in financial, human, intellectual and reputational capital. The substantial required capital investment poses a barrier to entry into the derivative market making activity for the smaller banks.

Some researchers claim that off-balance-activities, including derivatives trading, have become a potential source of bank charter value for the large banks (e.g. Furlong & Kwan, 2006). Derivative trading not only generates important fee income to the banks but provides opportunities for bankers to add value through cross-selling opportunities and enhanced customer relationships. Based on the implied negative relationship between risk and charter value, derivative activities used for hedging purposes should favorably impact bank charter value. Prior to the financial crisis, Brunnermeier, Dong, and Palia (2012) state that banks have increasingly earned a higher proportion of their profits from non-interest income (including income from derivatives trading) compared to interest income. Therefore, it would seem interesting to explore the linkage between derivative dealer bank behavior and charter value. The term charter value is broadly defined as the expected present value of a firm's economic rents. In a banking context, Palia and Porter (2004) refer to charter value as the present value of the bank's future economic profits as a going concern. The bank's profit potential in turn is highly linked to customer relationships, efficiency and market power. Through the issuance of an approved bank charter, banks have the ability to operate in a regulatory environment that may curtail external competition from non-bank sources. Banking legislation that curbs such competition from non-bank sources provides market power to approved banks thereby creating value.

The continued evolution in derivative securities, and the significant trading losses recorded during the 2007–2009 financial crisis, has drawn attention to bank regulators, law makers and the investor public. For our sample of 27 bank holding companies (BHC), aggregate trading losses from 2007Q3 to 2008Q4 totaled U.S. $73.6 billion.[2] The collapse of the largest investment banks who were the market makers of traded securities, the originators of new securities, and producers of derivative products also placed the derivative markets in the spotlight. The severity of bank losses reported during the 2007–2009 financial crisis, including losses from proprietary trading that involved derivative activities, ultimately led to the Dodd Frank Act of 2010 that contains the Volker Rule. From a broad perspective, the attention to the use of derivatives by banks is further attributed to the dramatic increase in the gross notional value of derivatives that far exceed the increase in BHC assets as depicted in Fig. 2. It is important to examine the large dealer banks since Brunnermeier et al. (2012) point out that systemic risk is higher for banks with higher non-interest income[3] to interest income ratios, a condition that is common with large dealer banks. They suggest that activities that are not traditionally linked with banks such as deposit taking and lending are associated with a larger contribution to systemic risk.

This study investigates the following research questions: (1) Does trading income contribute to BHC charter value? (2) Does derivatives dealer designation change the impact of trading incomes on BHC charter value? and (3) Did trading incomes help support BHC net operating revenues during the 2007–2009

[2] The quarterly trading losses reported during the crisis period by our sample BHCs are in sharp contrast with the cumulative trading incomes reported during the rise of the housing boom period. From 2003Q3 to 2004Q4, cumulative trading incomes for our BHC sample totaled U.S. $50.1billion. Over the full sample period, aggregate trading incomes were reported in 37 of the 43 quarters resulting in U.S. $506.9 billion in cumulative trading income. More recently, the WSJ May 11, 2012 article "J.P. Morgan's $2 Billion Blunder" by Fitzpatrick, Zuckerman, and Rappaport (2012) reported on the large trading losses posted by the bank during 2012Q2 resulting from bad investment decisions made on credit default swaps (CDS) by the bank's risk management group.

[3] Brunnermeier et al. (2012) decompose non-interest income into two components: (1) trading income and (2) investment banking and venture capital income. They find that both components are approximately equally related to systemic risk. They also find that banks with higher trading income one-year prior to the recession earned lower returns during the recession period and that no such significant effect was found for the investment banking and venture capital income variable.