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Growth in financial derivatives: The public policy and accounting incentives

A. Rashad Abdel-khalik [a,*], Po-Chang Chen [b]

[a] University of Illinois, United States
[b] Miami University, United States

A B S T R A C T

During the period 1995–2012, U.S. financial institutions had contributed significantly to the growth in financial derivatives. The notional amount of total derivatives held by the 25 largest U.S. bank holding companies grew eighteen times from $16.6 trillion in 1995 to $308 trillion in 2012, while the U.S. GDP merely doubled from $7.7 trillion to $16.2 trillion over the same period. In this paper, we examine three possible drivers of this growth: (a) the Gramm-Leach-Bliley Act of 1999, (b) the Commodity Futures Modernization Act of 2000, and (c) FAS 133 (now ASC 815), Accounting for Derivative Instruments and Hedging Activities, which became effective in 2000. Using a sample of U.S. bank holding companies, we find a temporal association between the passage of the two Congressional Acts and the abnormal growth in trading/over-the-counter derivatives. We also predict and find that the use of cash flow hedge accounting treatment helps reduce earnings volatility/equity risk, and that firms increase their use of non-trading derivatives when facing high level of earnings volatility/equity risk.

1. Introduction

During the fifteen-year period between 1995 and 2012, total amounts of financial derivatives have increased by 1700%, a rate that significantly outpaces the growth of gross domestic product

* Corresponding author at: 2037D BIF, 515 East Gregory Drive, University of Illinois, Champaign, IL 61820, United States. Tel.: +1 (217) 265 0539.
E-mail address: rashad@illinois.edu (A.R. Abdel-khalik).

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(GDP) both globally (240%) and in the USA (212%). In this paper, we study potential drivers of this phenomenal growth. Specifically, we examine two contemporaneous, yet not mutually exclusive factors, i.e., changes in public policy and issuance of a comprehensive and rather complex set of accounting standards to account for derivatives and hedging. The public policy changes we consider are the outcome of two federal laws: the Financial Services Modernization Act in 1999 and the Commodity Futures Modernization Act of 2000. The accounting standard under consideration is FAS 133 (now ASC 815), which prescribes the accounting treatments for hedging that became effective in 2000. Following the documentation of growth in derivatives, we examine each of these factors in a separate section. Part I discusses the Congressional legislations and the institutional changes these Acts have introduced; we use time trend analysis to estimate the impact of the Acts on the growth of derivatives. Part II focuses on the effects of FAS 133 on the use of derivatives by U.S. bank holding companies; we also examine the role of accounting standards in the growth of derivatives.

1.1. Growth in financial derivatives

Financial derivatives are bilateral contracts that establish the rights and obligations of each party to the contract based on the movements of prices or indexes of the underlying items, which could be assets or events. Derivative contracts are either standardized or customized (i.e., self-tailored by the two parties to the contract). Standardized derivatives are usually traded on organized (and regulated) exchanges, whereas customized contracts are traded over-the-counter (OTC)—i.e., behind closed doors—for which no regulation of any type exists aside from common contract and tort laws. Customized derivatives are flexible and tailored specifically to fit the risk mitigation or risk-taking strategies by the two identifiable parties of each contract. The size of the financial derivatives market could be measured in three ways: (a) total notional amounts outstanding at a point in time, (b) the total fair market values at which these contracts could be traded or settled at a point in time, and (c) the turnover amounts during a period of time. While many types of derivative contracts are of very recent origins, the statistics published by the Bank for International Settlements show that the notional amounts of global derivatives have increased from $57.5 trillion in 1995 to $696 trillion in 2012.[1] This rate of growth has not been observed for any other economic activity. For example, during the same time span, global GDP increased from $30.7 trillion to $72.4 trillion, and U.S. GDP increased from $9.1 trillion to $16.2 trillion. These comparative statistics are shown in Table 1, and the trends of growth are illustrated in Fig. 1.

A significant portion of these derivatives is used by U.S. bank holding companies (BHC).[2] As presented in Fig. 2, the notional amounts of BHC's derivatives have increased from about 46% of global derivative amounts in 1998 to 59% in 2002. Beginning 2004, however, the proportion of BHC's derivatives began to decline, reaching its lowest level of about 22% of global derivatives at the height of the financial crisis in 2008. Since then, this percentage has increased again, until it reached about 40% of the known total global amounts in 2012.

All banks operating on U.S. soil fall under the regulatory jurisdiction of one or more of the following agencies: the Federal Deposit Insurance Corporation (FDIC),[3] the Office of the Comptroller of the Currency (OCC), and the Federal Reserve Bank. Bank holding companies with total consolidated assets of $500 million or more are required to file FR Y-9C reports with the Federal Reserve Bank on a quarterly basis. In FR Y-9C reports, bank holding companies are required to report their derivatives holdings along various dimensions (e.g. contract type, trading versus non-trading purposes, notional amounts, and fair values). Fig. 3 depicts the growth path of BHC's use of derivatives in terms of both the notional amounts

[1] Statistical releases on derivatives a www.bis.org.
[2] We use the terms "bank holding company" and "BHC" interchangeably throughout the paper.
[3] Deposit-taking banks are required to make periodic filings of the *Call Report* with FDIC.