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The impact of macroeconomic and financial stress on the U.S. financial sector

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ABSTRACT

During the 2008 global financial crisis, financial institutions in the United States experienced big losses, and some firms failed. These failures occurred despite the external and internal regulatory mechanisms imposed upon the financial sector aimed at ensuring confidence and stability in the financial system. This study analyzes the impact of macroeconomic and financial stress on the profitability of financial firms. We utilize data from 1980 to 2010 to model firm profitability and stock returns using a panel regression, fixed-effect methodology. Our results show that the profitability of all firms is negatively affected by increases in macroeconomic and financial stress, measured by the National Financial Conditions Index (NFCI) and the Adjusted National Financial Conditions Index (ANFCI), respectively; however financial sector firms have exhibited an increased marginal sensitivity to both stress indexes that began in the 1990s and continued through the financial crisis of 2008. In a further analysis of the financial sector and banks, we show that depository institutions are relatively robust to macroeconomic and financial stress, and financial sector instability is driven by non-depository finance, investment, and real estate firms. Additionally, the largest 33 percent of financial firms and banks exhibit increased sensitivity to macroeconomic stress in the most recent sample. Our results coincide with the risks associated with recent trends in the financial services industry, such as deregulation, global market integration, financial product innovation, and the increasing predominance of non-depository intermediation.

1. Introduction

The stability and efficiency of the financial sector has gained increased scrutiny in light of the 2008 financial crisis and corresponding economic recession. The consequences of the collapse of many financial institutions were not confined to Wall Street. The failure of the financial sector in handling increasing financial stress contributed to a worldwide economic slowdown. As a result, countless investors, pension funds, and corporations realized losses in the trillions of dollars, and millions of people became unemployed. The effects of this downturn are still being felt years later. The real sector consequences of the financial crisis of 2008 illustrate the important role that financial intermediaries play in ensuring a stable and efficient economy. Not surprisingly, there has been an increased focus on the financial sector in the wake of the global financial crisis, as stakeholders around the world study the causes of the crisis and contemplate which solutions, if any, could be employed to prevent similar occurrences in the future.

Efficiently functioning capital markets are paramount to generating and sustaining real economic growth, and financial intermediaries play an important role in developing and maintaining healthy capital markets. The consequences of a financial system collapse became apparent in the aftermath of the Global Financial Crisis of 2008. Accordingly, there have been continued efforts over many years to increase the efficiency and stability of the financial services sector. Since the 1980s, deregulation in the U.S. markets and liberalization policies in emerging markets have coincided with a growing degree of international market integration and robust growth in emerging economies. Proponents of many of the financial reforms that favor open and less restrictive markets may take credit for some of the successes of what seems to be improved international market efficiency and growth. However, the recent financial crisis points to the fact that the increasingly integrated and complex financial system appears to carry with it a great deal of risk that is still perhaps not yet fully recognized.

The typical financial intermediary holds assets that are funded with liabilities of a different maturity. Accordingly, the majority

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of risk in the financial sector stems from the uncertainty surrounding the value of the firm's assets relative to its liabilities as economic variables, such as interest and exchange rates, fluctuate. Additionally, since many financial firms leverage their liabilities by making risky investments, they often also face significant liquidity and default risks. To avoid excess losses from these and other sources of risk, many financial intermediaries have increasingly relied on the use of derivative securities to hedge their asset portfolios. Moreover, the financial sector has faced an increasingly friendly regulatory environment with regards to the designing and implementation of derivative securities. On one hand, the use of derivatives allows financial intermediaries to transfer risk and insure against both default and price risk, resulting in less uncertainty in the capital markets. On the other hand, trading in redundant securities may not lead to any economic benefits and may, in fact, only be serving to help firms skirt regulations aimed at controlling financial asset risk through the use of off balance sheet activities. In addition, the difficulty in pricing complex derivatives may add yet another level of unanticipated risk to a financial institution's balance sheet.

The potential risks posed by the failure of the financial system are compounded by the unprecedented consolidation that has taken place within the financial sector over the past several decades. Regulations limiting commercial banking branching across state lines were relaxed in the 1990s, resulting in increased mergers and acquisitions in commercial banking activities. Additionally, regulations such as the Financial Services Modernization Act of 1999 allowed for the creation of bank holding companies, which are allowed to hold both depository and non-depository financial institutions. The increased consolidation in the financial sector can allow financial firms to become more efficient. Larger financial institutions are able to more easily diversify and can benefit from economies of scale and scope. On the other hand, consolidating financial assets also poses significant risks, because the failure of an individual financial institution has a much larger potential impact on the real sector[1].

This paper focuses on the impact of macroeconomic and financial market stress on the financial services sector. The translation of macroeconomic events into corporate earnings or asset price appreciation or depreciation is a complex and dynamic process. However, we use previous literature as a guide to building an empirical model that generalizes that process[2]. Through the use of panel regression techniques, we use firm-specific, industry, and macroeconomic factors to study the degree to which the financial sector is sensitive to macroeconomic conditions. The fragility of the financial sector relative to other sectors of the economy has important implications for financial sector governance. Financial firms in general are subject to a much deeper set of regulations, and the purpose of many regulations is to reduce risk-taking and ensure stable and trustworthy institutions. From this perspective, we may expect that financial firms should be relatively immune from financial shocks in the economy. Regulatory requirements ensuring proper capitalization as well as their use of complex derivative products for hedging risk should ensure the stability of financial intermediaries.

However, the recent financial crisis begs the question as to whether this is indeed the case. The loosening of many regulations over the past several decades may have worked to offset some of the risk reduction benefits established by previous financial legislation. Additionally, innovations in the financial sector may contribute to an increasingly risky financial environment. The most highly regulated institutions, depository institutions, have traditionally been a major source of financial activity in the U.S. However, financial innovations and practices have shifted much of this activity to non-depository institutions or "shadow banks". The non-depository financial institutions in the U.S. are subject to fewer regulations than traditional commercial banks. For example, non-depository institutions do not face the capital requirements imposed on traditional commercial banks and other depository institutions. The competitive regulatory advantages of the shadow banking system has allowed non-depository institutions to play a much larger role in the credit markets than they did thirty years ago. The recent trends in financial firm consolidation, regulatory relaxation, derivative use, and shadow banking have induced risks into the financial system that contributed the global financial crisis, and it is questionable as to whether current regulations and governance practices have evolved to sufficiently offset these risks.

The moral hazard issues perpetuating financial institutions that lead to the dramatic failures seen during the financial crisis have brought about a renewed scrutiny from public policy makers in the United States. For example, The Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010 aims to improve the stability of the financial system in the United States through reforms to the regulatory mechanisms that govern financial institutions. The act aims to improve the financial regulatory regime by taking a more holistic or macro-prudential approach to regulation. Among the many changes taking place under the Dodd–Frank Act are the consolidation and collaboration of regulatory agencies, an increased focus on the risks posed by derivative securities, transparency requirements with regards to consumer financial products, and a focus on overall systemic risk. Accordingly, the Act gives the authority to regulate financial institutions that have historically been left relatively unregulated by substantial external governance, such as non-depository finance companies and investment banks. This paper contributes to the literature in this area, as the results presented coincide with several important characteristics of the modern financial services industry that have motivated such attempts at improved regulatory scrutiny.

We analyze the relative performance of the financial sector in order to determine whether firm performance is more consistent with a financial sector that is robust to economic conditions or is consistent with an increasingly complex and risky financial market. In light of the results, the fragility of the financial sector seen during the recent financial crises is not surprising. Our study significantly contributes to the literature in several ways. Previous studies have separately analyzed the impact of financial stress on financial and real sector firms. Additionally, there has been previous literature describing the causes of real and financial sector instability. Our study extends the literature by comparing the relative impact of economic conditions on financial and non-financial institutions, and we conduct a closer examination of the financial sector by analyzing the operational risk of financial firms across different sub-industries and size terciles. Our results imply a link between the comparative sensitivity of financial sector firm profitability to changes in economic conditions over time with recent trends in the global financial markets. In our analysis of the financial sector, we identify the types of financial firms that appeared to be driving financial sector operational risk leading up to the financial crisis. The results presented are of particular interest to academics and practitioners interested in evaluating and designing regulatory and governance mechanisms aimed at more accurately measuring and controlling the risks taken by financial intermediaries.

The results show that financial sector profitability is significantly sensitive to macroeconomic conditions. The average

[1] Jiménez, Lopez, and Saurina (2013) use data from the Spanish banking system to show empirical support for aconvex relationship between bank competition and risk, indicating that there is an optimal level of banking competition that minimizes risk.

[2] See Athanasoglou et al. (2008), Bernoth and Pick (2011), Chen et al. (1986), Dietrich and Wanzenried (2011), Fama (1990), Hoffmann (2011), Sufian and Habibullah (2010), among others.