



Research paper

An international forensic perspective of the determinants of bank CDS spreads¹Nadia Benbouzid^a, Sushanta K. Mallick^b, Ricardo M. Sousa^{b,c,*}^a University of Greenwich, School of Business, Old Royal Naval College, 30 Park Row, London, SE10 9LS, United Kingdom^b Queen Mary University of London, School of Business and Management, Mile End Road, London E1 4NS, United Kingdom^c London School of Economics and Political Science, LSE Alumni Association, Houghton Street, London WC2A 2AE, United Kingdom

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ABSTRACT

Against the backdrop of the Great Recession, investigating the differences in institutional frameworks became important to explain the heterogeneity in the market perception about the credit quality and default risk of banks in different countries. Using data for 118 banks of 30 countries over the period 2004–2011, we find that an improvement of the quality of economic and legal institutions can help in reducing banks' CDS spreads, as banks operating in countries where the regulatory quality is stronger tend to be less affected by spikes in financial stress of 2008–2009. Considering a series of indicators of the financial structure of the banking system, our results reveal that more concentration of the banking sector, a stronger presence of foreign banks, a deterioration of the banking sector health or the lack of alternative means of finance is associated with higher CDS spreads of banks. We also show that the dynamics of bank CDS spreads accrue to: (i) the quality of banks' balance sheet; (ii) (il)liquidity of banks' assets; (iii) how profitable banks' operations are; and (iv) the banks' leverage ratios. Finally, higher CDS spreads of banks tend to be associated with periods of high inflation and low GDP growth.

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1. Introduction

In the wake of the recent global financial crisis, understanding bank credit risk has become an important research question which

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some studies have addressed by mainly considering bank-level balance sheet characteristics or country-level macroeconomic factors. Yet, the role played by differences in institutional frameworks in explaining the heterogeneity in bank CDS spreads in different countries remains, to some extent, unexplored. Economic, legal and political institutions are important because poor quality of institutions can raise concerns about the ability of banks to fulfil the repayment of their debt, as well as about the mechanisms put in place in the country to enforce it. This is likely to be reflected in higher bank CDS spreads and has the potential of raising firms' financing costs, with deleterious effects on investment decisions.

The typical CDS is a credit protection contract in which the buyer pays a premium – i.e. the spread – for the insurance against the event of the borrower's (i.e. the seller's) failure to meet its debt obligations. When traded over the counter, the CDS also implies some counterparty risk, as the seller can go bankrupt during the life of the contract (Giglio, 2014).

In the case of a bank's CDS, the spread is typically considered as a measure of the market perception about the credit quality and default risk of a bank. Yet, the extent to which the bank's characteristics along with the country-level macroeconomic and financial environment, and the political and institutional frameworks in

which the bank operates, are reflected in banks' CDS spreads – as macro-financial and other factors are generally priced in equity premium – remains an empirical question to be explored.²

During the Global Financial Crisis of 2008–2009, large banks, which were considered to be 'too big to fail' and 'too important to fail', had to be rescued through government bailouts using taxpayers' money. The so called 'Great Recession' was indeed characterized by a considerable loss in output and a dramatic increase in the level of unemployment. Thus, in the aftermath of the crisis, there was a general consensus that financial stability should be enhanced in order to limit the occurrence of economic disruptions. While it is well known that weak institutions can create the scope for banks to take excessive risks, the empirical literature has brought little focus on how country-level variation in the quality of such institutional framework affects banks' CDS spreads.

Against this backdrop, our paper addresses an important question: did the quality of country-level institutions dampen the rise in banks' CDS spreads during the financial crisis of 2008–2009? As a by-product, it also investigates how relevant bank-level characteristics, country-level macroeconomic and political factors, as well as the financial structure of the banking system, are in explaining the dynamics of bank CDS spreads.

Using a unique sample of 118 bank CDS spreads of 30 countries over the period 2004–2011 and relying on a Tobit regression and an outlier-robust Fixed-Effects estimator, our findings give support to the idea that the financial crisis of 2008–2009 was a global event (Castro, 2013): the outlier-robust Fixed-Effects estimates suggest that banks' CDS spreads in 2008–2009 were 165–514 points higher than average banks' CDS spreads over the 2004–2011 period for the full sample of countries included in the analysis.

Despite this, its impact on banks' CDS spreads is largely mitigated once we control for the quality of economic and legal institutions: our results show that, conditioning the impact of the Global Financial Crisis on the quality of economic and legal institutions, banks' CDS spreads on average would be between 262 and 702 points lower in 2008–2009. Thus, banks where the country-level quality of the regulatory framework is high tend to be less affected by spikes in financial stress such as the one that occurred during the Great Recession. Additionally, some variables characterizing the quality of political institutions – e.g. the tenure of the political system and the number of years that a cabinet has been in power – convey some relevant information about the dynamics of banks' CDS spreads.

Looking at a series of indicators of the financial structure of the banking sector, our empirical results also suggest that higher concentration of the banking sector (as proxied by the asset's share of the five largest banks) and stronger presence of foreign banks (as identified by a high share of foreign banks' assets) are associated with higher banks' CDS spreads. Similarly, a deterioration of the health of the banking system (as expressed by a fall in banks' net interest margins) or a lack of alternative means of finance is linked with higher bank CDS spreads.

We also find that bank-level characteristics are important. In particular, banks' CDS spreads display a positive and significant relationship with: (i) a deterioration of banks' asset quality; (ii) the degree of banks' leverage; and the insufficiency of regulatory capital. Finally, we show that the macroeconomic environment plays a

role: periods of high inflation or low growth and worsening fiscal conditions – for instance, an increase in the debt-to-GDP ratio or a fall in the budget balance (as percentage of GDP) – are typically associated with an increase in banks' CDS spreads.

The research presented in this paper contributes to the literature on credit default swaps. Using a sample of 35 developing countries, Boubakri et al. (2011) find evidence that while unconstrained presidential systems and political fragmentation raise sovereign bond spreads, higher competition for political contest, and political stability tend to reduce them. Therefore, political institutions explain a large fraction of the variations in sovereign bond spreads. Focusing on U.K. companies, Kajurova (2015) shows that leverage, liquidity, stock market returns and volatility, risk-free interest rate, and slope of term structure are important drivers of CDS spreads, but their role has changed before, during and after the financial crisis. Pires et al. (2015) investigate the determinants of U.S. and European CDS spreads via the estimation of quantile regressions. The authors show that CDS premia (especially, those for high-risk firms) can be explained by CDS illiquidity costs (as proxied by absolute bid-ask spreads), as well as implied volatility, leverage, past stock returns, profitability, put skew and ratings.³ Focusing on five Euro area peripheral countries, Blommenstein et al. (2016) highlight that the key drivers of changes in the sovereign CDS spreads are global and Euro area-related. These are, in turn, regime-dependent, as they accrue to the level of market uncertainty.

Our paper tries to complement this literature and its main contributions are threefold. First, we focus on the key effect of the quality of economic and legal institutions (i.e. the regulatory environment) as a mechanism for dampening banks' CDS spreads during the financial turmoil of 2008–2009. Second, we assess the importance of the financial structure of the banking system, i.e. the size and the concentration and the health of the banking sector, and the availability of alternative means of finance. And, third, we investigate the role played by bank-level characteristics and country-level macroeconomic, political and institutional factors in explaining the dynamics of banks' CDS spreads.

The rest of the paper is organized as follows. Section 2 looks at the related literature. Section 3 presents the econometric methodology and describes the data. Section 4 discusses the empirical results and provides the sensitivity analysis. Finally, Section 5 concludes.

2. Literature review

In this section, we provide a summary of the research on the determinants of banks' CDS spreads and, more generally, credit quality and default risk.

An important strand of the literature looks at the role played by bank-level characteristics, such as leverage or liquidity. From a theoretical point of view, Gorton and Haubrich (1990) show that the off-balance sheet operations and loan trading activities help financial institutions escape high capital requirements and high regulatory tax payments. Bernanke and Gertler (1995) show that pro-cyclical leverage plays a pivotal role in the amplification mechanism which transfers shocks into the real economy. Akhvein et al. (1997) find that systemically important banks that undergo a merger have the tendency to lower their capital and raise their lending operations. Fostel and Geanakoplos (2008) find that, following negative news, leveraged investors have the tendency to liquidate their assets, which can cause financial contagion. From an empirical perspective, Diamond and Rajan (2005) find evidence

² Fostel and Geanakoplos (2012) provide a theoretical framework whereby financial innovation (in particular, tranching and leverage) first raises the value of the underlying asset and CDS contracts lower it afterwards. Salomão (2016) also presents a theoretical model that shows that sovereign CDS contracts increase lenders' bargaining power during debt renegotiation. Thus, in order to compensate lenders for lower expected insurance payments, countries increase the debt share repaid in renegotiation. Consequently, countries commit not to default more often, and have lower debt financing costs and higher equilibrium debt levels.

³ Pereira da Silva et al. (2015) also emphasise that the willingness of CDS investors to incur inventory risk is lower when counterparty risk and funding costs are higher, and market-wide illiquidity shocks reduce the open interest.

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