



Sovereign and corporate credit risk: Evidence from the Eurozone



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ABSTRACT

We study the impact of sovereign risk on the credit risk of the non-financial corporate sector in the Eurozone using credit default swap data. We show that an increase in sovereign credit spreads is associated with a statistically and economically significant increase in corporate spreads and, hence, firms' borrowing costs. A deterioration in a country's credit quality affects more adversely firms that are more likely to benefit from government aid, those whose sales are more concentrated in the domestic market, and those that rely more heavily on bank financing. Our findings suggest that government guarantees domestic demand, and credit markets are important credit risk transmission mechanisms.

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1. Introduction

The European debt crisis that followed the 2007–2009 financial crisis raised a number of concerns regarding the steadily growing level of sovereign risk and its consequences for the real economy. In recent years academics, as well as market participants and regulators, have devoted great efforts to identifying the determinants of sovereign risk.¹ In this paper we focus instead on how variations in sovereign creditworthiness have affected the credit risk of the non-financial corporate sector in the Eurozone. This issue bears important consequences on firms' access to financial markets and, in turn, on corporate borrowing costs.

The rationale behind the spillover from sovereign to corporate credit risk is the so-called “transfer risk”: A government in financial distress is likely to shift the debt burden onto the corporate sector by increasing corporate taxation, imposing foreign exchange controls, and, under extreme circumstances, expropriating private investments. A rich empirical literature documents the presence of transfer risk in emerging economies, where concerns about sovereign creditworthiness have traditionally been more pressing.² However, a significant linkage between sovereign risk and corporate credit risk is not granted a priori for developed countries. This is especially true in the context of the Eurozone, where two channels through which sovereign risk is commonly transferred (i.e., currency controls and the expropriation of private investments) are ruled out.

Following the recent wave of sovereign downgrades in developed economies, the investigation of transfer risk has extended beyond emerging markets. Special attention has been devoted to the financial sector where the sovereign-corporate link is expected

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¹ Caceres et al. (2010), Longstaff et al. (2011), and Dieckmann and Plank (2012) break down sovereign risk into systemic and country-specific components. Altman and Rijken (2011) develop a fundamental-based vulnerability indicator that predicts sovereign distress.

² Durbin and Ng (2005) and Peter and Grandes (2005) find that sovereign risk is a significant component of corporate bond yields; Arteta and Hale (2008) show that sovereign debt restructurings worsen the private sector access to capital markets; Dittmar and Yuan (2008) document that information flows from sovereign to corporate bonds.

to be tight: Banks benefit from government bailouts and hold large amounts of government bonds in their portfolios.³ The credit risk spillover to the non-financial sector in developed markets remains, instead, fairly unexplored, as most studies look at joint samples of advanced and emerging economies. Borensztein et al. (2013) document that sovereign ratings significantly affect corporate ratings, especially in countries with capital restrictions and high political risk. Almeida et al. (2013) show that, following a sovereign downgrade, firms at the sovereign rating bound reduce investment and leverage more than other firms. Lee et al. (2013) explore the role of country-level property rights institutions and disclosure requirements in explaining sovereign ceiling violations. Similarly, Bai and Wei (2012) and, in a later paper, Augustin et al. (2014) find that strong country-level property rights institutions weaken the connection between sovereign and corporate credit risk.

Our goal is to quantify transfer risk in a sample of developed economies and identify what firm attributes render companies vulnerable or resilient to sovereign risk transmission. Our analysis hence differs from the previous literature under several aspects. First, we concentrate on the credit risk transmission to non-financial firms in Eurozone countries, and, hence, our inferences are not confounded by the inclusion of financial institutions and/or emerging markets. Second, we propose and test firm-specific credit risk transmission channels: We believe these to be more relevant than country-level channels given that the countries in our sample enjoy very similar characteristics in terms of property rights, creditor rights and disclosure requirements.

To assess the sovereign-to-corporate spillover, we exploit the European sovereign debt crisis. This led to a sizable increase in sovereign risk for many countries thereby questioning the plausibility of the common belief that government debt in developed economies is risk free. It is precisely under these circumstances that we are interested in quantifying transfer risk and identifying the mechanisms through which it operates. We measure credit risk by using credit default swap (CDS) data on 118 non-financial companies headquartered in eight Eurozone countries (Belgium, Finland, France, Germany, Italy, the Netherlands, Portugal and Spain) between January 2008 and December 2011.

Our main findings on the sovereign-to-corporate spillover are as follows. First, we show that an increase in sovereign spreads leads to a significant increase in credit spreads (and, hence, borrowing costs) of non-financial firms. Our estimates indicate that a 10% increase in sovereign spreads translates into a 0.5%–0.8% increase in corporate spreads. Second, we take advantage of the cross-sectional variation in firm characteristics to shed light on the mechanisms through which transfer risk operates. We find evidence that the sovereign-to-corporate spillover is stronger for firms that are more likely to benefit from government aid, those whose sales are concentrated in the domestic market, and those that rely on bank financing. Our estimates indicate that a 10% increase in sovereign spreads leads to a 0.7%–1.2% increase in corporate spreads for those firms. In order to interpret our results in terms of causation instead of pure association, throughout the analysis we use a dynamic panel specification as well as an instrumental variable approach to limit endogeneity concerns.

Our findings are innovative and not trivial: Evidence of cross-sectional differences in the sovereign-to-corporate spillover may have been somehow unexpected in our sample of CDS reference entities. CDSs can only be traded on the debt of companies that issue rated, publicly traded bonds, which act as reference assets in the CDS contract. These companies are typically more internationally oriented, less financially constrained, and less dependent on bank lending than other firms.⁴ As a result, we believe that our findings may, in fact, underestimate the impact of an increase in sovereign risk on corporate borrowing costs for the average firm. Indeed, using survey data on access to finance of SMEs in the euro area, Holton et al. (2014) show that the sovereign crisis spilled over into the real economy through tighter credit conditions: SMEs witnessed an increase in loan rejections and interest rates.

The paper is organized as follows. Section 2 illustrates the steps we undertake to construct the data set. Section 3 provides the preliminary evidence of the causal impact of sovereign credit quality on corporate CDS spreads. Section 4 investigates the common factors driving sovereign and corporate CDS spreads. Section 5 presents the empirical findings on the credit risk spillover from the sovereign to the corporate segment. Section 6 investigates the transmission mechanisms, while Section 7 provides additional results. Section 8 concludes the paper.

2. Sample construction and summary statistics

We use CDS spreads as a market measure of credit risk. A CDS contract essentially represents an insurance against the risk that an entity (sovereign or firm) defaults on its debt. The key advantage to using CDS spreads instead of bond spreads is that they provide a more accurate measure of the issuer's creditworthiness (Longstaff et al., 2005; Pan and Singleton, 2008; Longstaff et al., 2011), given that bond spreads are driven by a multitude of other factors, among which liquidity premia play a prominent role. While illiquidity is unlikely to be of concern for sovereign bonds, which are actively traded on the secondary market, it is a significant component of non-financial corporate bond spreads. Both the sovereign and corporate segments of the CDS market enjoy, instead, comparable liquidity.

We obtain CDS spreads on sovereign and non-financial entities from the MarkIt Group, a standard provider of CDS data, largely employed by academics and practitioners.⁵ To ensure liquidity, we consider only the five-year maturity, which is the reference expiry

³ Adelino and Ferreira (2014) find that sovereign downgrades adversely affect bank lending by reducing loan amounts and increasing loan spreads. Using CDS data on European banks, Ejsing and Lemke (2011) and Acharya et al. (2014a) document a significant credit risk transfer from the banking sector to the government during bailouts, and in the opposite direction in the post-bailout period.

⁴ Ashcraft and Santos (2009) find that the introduction of CDSs leads to an improvement in borrowing terms for safe and transparent firms. Oehmke and Zawadowski (2013) report that large firms with more debt outstanding (mainly in the form of bonds) are more likely to become reference entities in the CDS market.

⁵ MarkIt provides composite prices based on quotes contributed by more than 30 major market participants on a daily basis. The quotes are filtered to remove outliers and stale observations and a daily composite spread is computed only if two or more contributors report a valid quote.

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