



Transmission of financial stress in Europe: The pivotal role of Italy and Spain, but not Greece



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ARTICLE INFO

Article history:

Received 2 November 2015

Received in revised form

29 September 2016

Accepted 23 November 2016

Available online 17 January 2017

Keywords:

Systemic risk

Financial crises

Volatility

Contagion

Credit default swaps

ABSTRACT

This paper proposes a stochastic volatility model to measure sovereign financial distress. It examines how key European sovereign CDS affect each other, and particularly Germany, Spain and Italy as the core EU countries, after controlling for common and systematic risks. It is found that extreme bad news led to persistent and nearly permanent effects on stochastic volatility and, consequently, has an impact on sovereign CDS spreads. The stability of Germany is a close proxy for the resilience of the euro area as markets use Germany's sovereign CDS as a hedge for systemic risk. Although most of the CDS changes for Germany during 2009–16 were due to idiosyncratic factors, market developments in Italy and Spain contributed significantly, probably due to their relative size and importance in the region. Changes in Greece's sovereign CDS had no significant effect on core's European sovereign CDS despite initial widespread concerns about such linkages. Spain and Italy show a notable co-dependence in explaining each other's volatility, supporting their relative importance.¹

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1. Introduction

On 2012, the president of the European Central Bank (ECB), Mario Draghi, announced a commitment to do “whatever it takes” to counter perceptions of a euro area break-up by buying a potentially unlimited amount of government debt through the Outright Monetary Transactions (OMT) program. The motivation for this unconventional move was to reduce the interest rate risk premium demanded by financial markets for some peripheral countries in Europe, which were viewed by some as not justified by economic fundamentals and largely as a result of contagion.

Indeed, since the time when Greece revealed a much larger-than-expected fiscal deficit of 12.5 percent of GDP in October 2009, default concerns about Greece began to affect the sovereign credit default swap (SCDS) spreads and the cost of borrowing of other peripheral countries in Europe. Greece eventually had to be rescued, twice in 2010 and 2011. Portugal and Ireland also had to adopt a stabilization program endorsed by the troika, the European Commission, the European Central Bank and the International Monetary Fund (EC/ECB/IMF) in 2011. On and off since then, concerns about contagion have been generally viewed as driving, at least in part, SCDS spreads and the cost of financing for vulnerable European countries. Moreover, concerns about spillovers across countries and higher costs of funding for sovereigns and corporations partly

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¹ We would like to thank to the editor of the journal and two anonymous referees for very useful comments. We are also grateful for useful discussions and comments received from participants at seminars organized at the IMF, MIT, the 2015 World Finance Conference and the 2015 Paris Financial Management Conference.

underpin policies attempting to limit trading in European-referenced SCDS. This was the rationale for the European Union's ban on "naked" (i.e., without a corresponding offsetting position in the underlying debt) protection buying of SCDS that went into effect on November 1, 2012.²

Overall, a key lesson from recent financial crises is that contagion and spillovers are key factors that can rapidly transform idiosyncratic events into systemic crises. This is evident from a number of recent episodes of financial crises, including the recent global financial crisis that began in 2007–08.³ Clearly, growing interconnectedness and risk of spillovers and contagion across the world have become a growing source of systemic risk. From a policy perspective, macro-prudential measures have been recently proposed to limit, inter alia, the effects of contagion and spillover risks during periods of stress.

Concerns about contagion have been abundant during the recent global financial crisis as it underwent several stages. First, the buildup of funding pressures beginning in early 2007 led to the systemic crisis that was exposed in the autumn of 2008 after the collapse of Lehman Brothers. This was followed by a systemic response phase that began in 2009 in a number of countries through either direct or indirect government guarantees of banks, or through outright purchases of financial assets that had become illiquid when their market values became uncertain. During this phase, concerns about contagion and spillovers provided a justification for policymakers to become the buyers/dealers or guarantors of last resort for the financial system. As the balance sheets of a number of these governments deteriorated, in part as a consequence of the transfer of risk from the financial sector to the sovereign, contagion and spillovers further became a major concern for some countries as it highlighted a further loop between sovereigns and the financial sector. Some of the fiscally weaker countries in Europe were affected the most. In each case, the requests for external financial assistance for Greece, Ireland and Portugal during 2010–11 were coupled with market concerns that other European countries could become affected by contagion.

While, indeed, all aspects of the recent global financial crisis have yet to be fully understood, the need to better comprehend contagion and spillovers is highlighted by recent events in Europe. Most notably, Greece has fared the worst since Standard's & Poor downgraded it in December 2009. In 2011, and after lengthy negotiations with creditors, Greece's external debt was written down significantly. Initially, commentators questioned how Greece's problems could affect creditor banks which were largely concentrated in the European core countries (mainly Germany and France). Later, in late-2011 when the European Central Bank's introduced its first Long-Term Refinancing Operation (LTRO), and subsequently in mid-2012 after the second ECB's LTRO injected close to 1 trillion euros in total, concerns about other large European countries such as Italy and Spain began to surface. Indeed, it was not until mid-2012 that European officials recognized the implications of contagion and openly discussed the possibility of a Greek exit from the euro for the first time. The recent focus on Spain's market access and increased cost of funding has again renewed attention to the potential spillovers to Europe's core and, indeed, the stability of the euro area.

Contagion can materialize through several channels, some of which can be observed through asset prices or returns, or through their volatility. Of course, not all changes in asset prices or volatility are associated with contagion, as some portion of these movements may correspond to an idiosyncratic component. This paper takes a different approach from others that have empirically examined contagion.⁴ In particular, it uses a stochastic volatility technique to decompose various factors. To our knowledge, this paper is the first contribution to the literature on financial contagion that identifies a systematic-idiosyncratic decomposition modeling of risk using SCDS jointly with a stochastic volatility model.

While the existence of contagion is now hardly disputed, the actual mechanisms for contagion are less understood and difficult to measure. These channels include:

- *Contagion from one country to other sovereigns:* Countries exhibiting similar weaknesses to the source country are affected through confidence effects. This increases their funding costs and worsens the sustainability of their debt dynamics, potentially accelerating downgrades in a self-fulfilling way. Discrimination across countries based on differences in fundamentals weakens once confidence erodes.
- *Contagion to asset prices and risk appetite:* Sovereign stress could propagate more broadly to asset markets, leading to a sudden rise in risk premia, a fall in asset prices, higher volatility and a drying up of liquidity. Measures of global market conditions can therefore play a role in the propagation mechanism.⁵
- *Contagion to liquidity and funding markets:* a risk of a generalized retreat from risk throughout markets can create an adverse cycle of worsening liquidity problems. Illiquid conditions can lead to solvency issues. For example, interbank lending markets could become dysfunctional and lead to credit lines being cut.
- *Contagion between the financial sector and the sovereign:* The banking sector can be heavily affected through funding pressures and capital charges emanating from losses on holdings of government bonds. The cost of financing of the sovereigns could also affect the corporate sector.

² The rationale for this policy is examined analytically in IMF (2013), where it is argued that the recent ban "appears to move in the wrong direction."

³ See, for example, Dungey, Fry, González-Hermosillo and Martin (2011), Dornbush, Park and Claessens (2000); Forbes and Rigobon (2002); Sgherri and Zoli (2009); and Arezki, Candelon and Sy (2011).

⁴ Various technical approaches are contrasted empirically in Dungey et al. (2011). They show that some of the most influential empirical techniques that have been used are either equivalent or a special case of a more general latent factor approach. A recent survey of contagion is provided in Forbes (2012).

⁵ See, for example, González-Hermosillo and Hesse (2011).

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