

Regulatory Intervention in the European Sovereign Credit Default Swap Market

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Abstract The European Short Selling Regulation not only restricts the short selling of shares but (largely in response to the European sovereign debt crisis) also extends its reach into regulating the sovereign debt market. In particular, the Regulation imposes a prohibition on entering into uncovered sovereign credit default swaps (CDSs): a functionally equivalent mechanism to short selling the underlying bonds. This paper provides an overview of sovereign CDSs and their uses and places the concerns voiced about sovereign CDSs in context through an analysis of the relevant economic literature. It then discusses the Regulation's provisions in the light of these findings. The paper suggests that there are many benefits to using sovereign CDSs and little to support the accusations that developments in the sovereign CDS markets aggravated the sovereign debt crisis. The restrictions may also reduce interest in the underlying bond markets and so may in fact harm the sovereign issuers the provisions were designed to protect.

Keywords Sovereign credit default swaps · Sovereign credit default swap restrictions · Short selling regulation · European financial markets · European financial regulation

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1 Introduction

Following the 2008 global financial crisis, investors became increasingly concerned about the financial outlook of a number of countries, including several in the euro area.¹ During the subsequent European sovereign debt crisis, a number of politicians and regulators accused speculators of using uncovered (or naked) sovereign credit default swaps (CDSs) to exacerbate the fiscal problems of many countries, including Greece, through raising the borrowing costs of governments. The sovereign debt crisis sparked the interest of regulators, and the sovereign CDS provisions in the 2012 European Short Selling Regulation (hereinafter ‘the Regulation’) were predominantly due to the perception that naked sovereign CDS activity contributed to Europe’s sovereign debt problems and that the speculative use of sovereign CDSs could destabilise markets. The final rules were highly contested, and were largely a consequence of political pressures stemming from particular Member States, supported by the European Parliament (hereinafter ‘the Parliament’).² This included the Parliament’s persistent demands with respect to imposing a ban on uncovered sovereign CDSs.³

Although the EU regime is now relatively well established, the issue of short selling regulation continues to be a hot topic today, especially when one reflects on the temporary short selling bans imposed by the Greek authorities during 2015 as the country teetered on the brink of financial collapse. Likewise, Chinese regulators also recently pointed the finger of blame at ‘malicious’ short sellers when China’s stock market experienced dramatic declines during 2015 and early 2016. The Chinese authorities (amongst other measures) imposed short selling restrictions and instigated a range of market manipulation probes.

Further, in a broader context, the developments being observed with respect to short selling regulation at the European level also form part of a wider set of regulatory changes witnessed in relation to European capital markets regulation following the recent crises. Specifically, the rules that were in existence at the time of the market downturn were considered inadequate to cope with the various new financial players and products, many of which were perceived to constitute a threat to market stability.⁴ Consequently, the crises prompted the EU down the path of more intensive regulation, and its initial regulatory response included a particular focus on establishing financial and market stability. Such reforms also expanded the EU’s regulatory perimeter to bring within it issues (including the practice of short selling) considered in need of regulation at the EU level. Today, although the high watermark of the post-crisis reforms may now have passed, the kernels of yet a further wave of changes are now also observable. For instance, current proposals

¹ BIS (2013), at p. 5.

² See, e.g., Nicolas Sarkozy and Angela Merkel, Letter to President of the European Commission (8 June 2010); European Parliament, Report on the Proposal for a Regulation of the European Parliament and of the Council on short selling and certain aspects of credit default swaps, 19 April 2011.

³ See, e.g., European Parliament, Crack Down on Short Selling and Sovereign Debt Speculation, 18 October 2011.

⁴ Moloney (2011), at p. 524.

include a push to try and widen companies' financing sources through the EU's Capital Markets Union project.⁵

With this background in mind, this paper provides an overview of sovereign credit default swaps (CDSs) and their uses and seeks to place the concerns raised about sovereign CDSs in context through a consideration of the relevant economic literature. It then examines the requirements introduced by the Regulation that effectively prohibit naked sovereign CDSs.⁶ Broadly speaking, the rules only permit entering into such a transaction where it does not lead to an uncovered position in a sovereign CDS. This then depends on whether the CDS constitutes a permitted hedge. Aside from 'pure' hedging against the risk of decline in the value of the sovereign debt, permissible hedging includes 'proxy' hedging (i.e., hedging risks of other assets whose value is correlated to the value of the sovereign debt). However, in this regard there are a complex set of requirements to be complied with, including geographical constraints, correlation and proportionality tests. During the Regulation's protracted negotiations, the Parliament was also forced to concede to a temporary opt-out from the restrictions if the ban was damaging the government debt markets.

Although the regulator demonstrated a level of sophistication in recognising that there is more than one way to carry out a short sale, this paper suggests that the Regulation's restrictions are a 'misconceived response to a non-existent problem'.⁷ There are many benefits to using sovereign CDSs and little to substantiate the accusations that developments in such markets led to higher funding costs for sovereign issuers during the crisis.⁸ Indeed the rules that have been introduced not only prohibit uncovered positions but also restrict much legitimate hedging activity. More generally, the rules may reduce investor interest in the underlying bond markets in many countries and so may come at the detriment of the sovereign issuers that the restrictions were in fact seeking to protect.⁹

2 Terminology: Overview of Credit Derivatives and CDSs

A credit derivative is a general term used to describe various swap and option contracts designed to assume or lay off credit risk on loans, debt securities or other assets, or in relation to a particular reference entity or country, in return for either swap payments or payment of premium.¹⁰ Credit risk arises from the possibility of default on a pre-agreed payment, and the transfer of credit risk is achieved through

⁵ See, e.g., European Commission Communication, Action Plan on Building a Capital Markets Union (COM (2015) 468 final).

⁶ Note that for ease of reference, a table containing some pertinent terms is attached as Appendix 1 to this paper.

⁷ Seretakis (2013), at p. 146.

⁸ Notably, a 2012 report on the CDS market by the International Organisation of Securities Commissions (IOSCO) stated that there was no conclusive evidence on whether taking short positions on credit risk through naked sovereign CDSs was harmful for high-yield sovereign bonds, see IOSCO (2012), at p. 38.

⁹ AIMA (2011), at p. 17.

¹⁰ Benjamin (2007), para. 4.51.

the payment obligations of the seller of the swap (also referred to as the ‘protection seller’) that are triggered by specified events of default (‘credit events’) affecting defined assets (also known as ‘reference assets’) or defined entities (also known as ‘reference entities’) such as a government or corporate issuer.¹¹

Turning to CDSs, these instruments were conceived as over-the-counter (OTC) products and are quoted in basis points¹² per year. A CDS price indicates the cost per year to buy or sell exposure to the possibility of a default or restructuring.¹³ Under the terms of a CDS contract (that will be laid out in documentation using standard forms),¹⁴ the purchaser of the CDS (also known as the ‘protection buyer’) will be obliged to make specified fee payments (often referred to as the ‘insurance premium’ or ‘CDS spread’) to the protection seller on an annual basis. The level of protection is usually expressed in terms of a ‘notional’ amount that is being protected and the length of time for which the notional amount is being protected.¹⁵

Specifically with respect to a sovereign CDS agreement, the seller will receive the premium in exchange for bearing the risk of capital losses if a pre-defined default event occurs (including the sovereign’s failure to pay interest or principal on an obligation) in relation to the referenced sovereign entity and a predefined notional amount.¹⁶ Sovereign CDS contracts are usually denominated in a currency different from the main currency of the deliverable obligations as it is assumed that, if faced with a credit event, the local currency will come under pressure.¹⁷ CDSs on euro area sovereigns tend to be denominated in US dollars.

To put these terms in context, if one party wishes to purchase protection on the notional amount of USD one hundred million of debt issued by a sovereign for 5 years, and the agreed CDS rate is five per cent per year, the party will pay a yearly premium to the protection seller of USD five million. If a credit event occurs in the 5 years, the seller will give the buyer the difference between the referenced debt and the market value of the defaulted debt. For example, if, due to the credit event, the debt now has only a market value of USD thirty million, the buyer will collect USD seventy million from the seller.¹⁸

Where an investor purchases a sovereign CDS without having some kind of exposure to the credit risk associated with the underlying bond (i.e., where the

¹¹ Ibid, at para. 4.51; European Commission (2010), at p. 7.

¹² For further details, see Appendix 1.

¹³ European Commission (2010), at p. 8.

¹⁴ The standard forms are most often produced by the International Swaps and Derivatives Association (ISDA).

¹⁵ AIMA (2011), at p. 20.

¹⁶ Ibid, at p. 20. Note that in March 2012, the restructuring of Greek sovereign debt triggered payments by protection sellers of approximately USD 2.89 billion. Although there were concerns that a large flow of payments to buyers of CDS protection could have had a material systemic impact on the financial system at large (this was particularly related to the possibly high concentration of the exposures on a few protection sellers), the impact of the credit event was remarkably low. See, e.g., H Cunningham, ‘DTCC helps ensure “uneventful” Greek CDS payout’, DTCC, 1 May 2012; IOSCO (2012), at pp. 15–18.

¹⁷ BIS (2013), at p. 5.

¹⁸ Duffie (2010), p. 56. Settlement can also be either in cash or by physical settlement although CDS contracts are typically cash settled.

investor does not hold the debt instruments or have some exposure to the debt), this is described as having an uncovered or naked sovereign CDS.¹⁹

2.1 Uses of Sovereign CDSs

Owners of sovereign debt purchase sovereign CDSs as a direct hedging tool in order to protect them from loss arising from a default or other credit event affecting the value of the underlying sovereign debt.²⁰ Sovereign CDSs can also be used for arbitrage opportunities (i.e., the risk-free exploitation of price differences in connected markets) in the government bond markets.²¹ Traders can try and exploit pricing differences between CDSs and the underlying debt obligations by taking offsetting positions between the two (known as ‘basis trading’).²²

Naked sovereign CDSs are also often purchased as ‘proxy’ risk management tools in order to hedge risks of other assets, such as national banks or utility companies whose value is correlated to the value of the sovereign debt.²³ For instance, if one invests in a national airline and wants to protect against the downside risk of a sovereign crisis affecting the airline, one could purchase a sovereign CDS without owning the underlying government debt.²⁴ Similarly, sovereign CDSs are also often used as a proxy to hedge positions in analogous instruments (e.g., in bank debt) for which a CDS may not be traded (or which may be highly illiquid and therefore expensive).²⁵ Such positions help fill a gap by allowing investors to hedge country- or sector-specific risks and also support projects that would not be financed otherwise.²⁶ Although, as will be observed at Sect. 5 below, the EU provisions aim to ensure that legitimate proxy hedging activity can still be classified as ‘covered’ positions, the many uncertainties introduced by the complex European rules mean such activity may simply become too cumbersome or costly to be worthwhile for market participants.

Finally, purchasing a naked sovereign CDS can also be used to reflect a negative opinion about the credit outlook of the sovereign issuer of the underlying bonds.²⁷ It is economically equivalent to short selling the underlying bonds, and both naked CDS purchases and short selling bonds provide useful functions by increasing the

¹⁹ European Commission (2010), at p. 7.

²⁰ IMF (2013), at p. 3.

²¹ Ibid, at pp. 3 and 23, and European Commission, Impact Assessment Accompanying Document to the Proposal for a Regulation of the European Parliament and of the Council on short selling and certain aspects of credit default swaps, SEC(2010) 1055, at p. 15.

²² IMF (2013), at pp. 3 and 23; Impact Assessment, *supra* n. 21, at p. 15. See Appendix 1 for further details. See also Sect. 3 below.

²³ IMF (2013), at p. 3.

²⁴ IMF, IMF Staff Comments on Commission Consultation on Short Selling, August 2010, at p. 7.

²⁵ FSA, HMT and Debt Management Office, Joint FSA/HMT/Debt Management Office Response to the European Commission Public Consultation on Short Selling (2010), at p. 10.

²⁶ del Marmol (2011), at p. 58.

²⁷ IMF (2013), at pp. 3, 19.

liquidity of the underlying markets.²⁸ Further, naked CDS purchases also help to keep prices from merely reflecting the activity of only the most optimistic market participants.²⁹

Naked sovereign CDSs provide a relatively simple mechanism for taking a short position and reflecting a negative view of the evolving credit risk associated with a sovereign reference entity: they are a ‘highly visible bellwether of a country’s perceived credit risk’.³⁰ Although other mechanisms can also be used to express views on the credit risk associated with a sovereign issuer (including short selling the underlying bonds or using other derivatives), such instruments can also reflect other risk as well as credit risk.³¹ In contrast, the CDS market is more standardised: for example, sovereign CDSs on Greece all have the unique reference, which is the credit risk of Greece.³² Equally, there is not the same required outlay to enter into a short position on the CDS market as there is with purchasing a bond.³³ Finally, in general terms, it can often be harder to short sell bonds than to purchase a naked CDS.³⁴ Indeed, this is particularly the case in the corporate bond market, where the secondary market is often illiquid.³⁵ In contrast however, the government bond market is generally much more liquid than its corporate counterpart, meaning the bond market may play a bigger role for sovereigns.³⁶

2.2 Size of the Sovereign CDS Market

Turning to examine the size of the sovereign CDS market in more detail, this Section will illustrate that the sovereign CDS market is only a relatively minor part of the overall CDS market, which is itself only a small part of the OTC derivatives market. Further, sovereign CDSs are only a small fraction of the total government debt outstanding.³⁷ It is also helpful to keep this in mind in Sect. 3 below that will then examine whether sovereign CDS prices are in fact capable of manipulating bond prices.

There are two basic measures of the size of the CDS market: the gross notional amount and the net notional amount. The gross notional amount is the total of all transactions that have not yet matured, prior to taking into consideration offsetting

²⁸ Ibid, at p. 19.

²⁹ Ibid, at p. 19.

³⁰ AIMA (2011), at p. 5. CDS prices provide useful information about the credit risk of an entity and the CDS price theoretically reflects the credit risk of the reference entity, see del Marmol (2011), at p. 25.

³¹ IMF (2013), at p. 3. For instance, there can be interest rate risk attached to bonds.

³² Impact Assessment, *supra* n. 21, at p. 16.

³³ Ibid, at p. 16.

³⁴ For instance, one needs to be able to borrow a sufficient quantity of bonds and deep repurchase agreement (‘repo’) markets in which to borrow them, IMF (2013), at p. 19.

³⁵ Coudert and Gex (2013), at pp. 493, 499–500. Corporate issuers may also have different bonds with varying maturities leading to high fragmentation of the secondary market. See del Marmol (2011), at p. 24.

³⁶ Coudert and Gex (2013), at p. 495. However, the funding conditions and liquidity of the government bond market can vary from state to state.

³⁷ IMF (2013), at p. 4.

transactions between pairs of counterparties. However, this measure can be misleading as it can significantly overstate the size of the market.³⁸ For instance, market participants will commonly enter into offsetting transactions, and this will raise the number of outstanding transactions, resulting in an increase in the overall gross notional amounts.

Instead, the net notional amount takes into account all offsetting transactions between pairs of counterparties. For instance, if an investor has bought protection on USD 10 million of sovereign debt and decides to reduce this position to USD 4 million, it will enter into a new offsetting CDS agreement to sell protection on USD 6 million of sovereign debt, and the investor's net position will then be USD 4 million.³⁹ The net notional amount is the basis for calculating the net notional payment in the event of a credit event and represents the maximum amount that could change hands if the reference entity defaults.⁴⁰ This is a more realistic measure as an increase in net notional exposure indicates there is increased demand for credit risk protection.⁴¹

2.2.1 BIS: Size of the CDS Market Within the OTC Market

The Bank for International Settlements (BIS) provides information on a semi-annual basis with respect to the OTC derivatives market.⁴² This data helps provide a general overview of the size of the CDS and sovereign CDS market, particularly in comparison with the overall OTC derivatives market. Nonetheless, the data also suffers from limitations: it only provides aggregate market statistics and is based on surveys rather than actual registered positions in the market.⁴³

Although in 2007 CDSs came close to surpassing foreign exchange derivatives as the second largest segment in the global OTC derivatives market, notional amounts of all CDSs have since declined steadily.⁴⁴ For instance, according to the BIS semi-annual survey, by the end of 2013 the global OTC derivatives market constituted approximately USD 710.2 trillion, and the gross notional amount outstanding of the total CDS market was approximately USD 21 trillion (approximately 3 per cent of the total OTC market), down from its peak of approximately USD 58 trillion at the

³⁸ European Commission (2010), at p. 10.

³⁹ Duffie (2010), at p. 56.

⁴⁰ European Commission (2010), at pp. 10–11; AIMA (2011), at p. 13.

⁴¹ AIMA (2011), at p. 14.

⁴² BIS (2014). Central banks and other authorities from 13 jurisdictions participate in this survey (Australia, Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Spain, Sweden, Switzerland, the UK and the US). The market share of dealers participating in the survey varies but is almost 100 % in the credit category, see *ibid*, at p. 10. Although BIS also conducted a triennial survey reflecting end-June 2013, BIS noted that dealers participating in the semi-annual survey accounted for almost all outstanding CDS contracts, see BIS (2013), at p. 3.

⁴³ Oehmke and Zawadowski (2014). Hence, it runs the related risk of double counting.

⁴⁴ Note that for an overview of the forthcoming data in tabular form, plus a comparison between 2013 and 2011, see Appendix 2, Table 1.

end of 2007.⁴⁵ CDSs constituted the third segment in the OTC derivatives market, with interest rate derivatives accounting for the majority of OTC derivatives, followed by foreign exchange derivatives. By sector, sovereign CDSs constituted only approximately USD 2.6 trillion of all CDSs at the end of 2013 in terms of gross notional amounts outstanding: approximately 12.53 per cent of the CDS market.⁴⁶

2.2.2 Depository Trust & Clearing Corporation (DTCC) Data

The DTCC provides information on CDSs at the reference entity level.⁴⁷ According to the DTCC, their data captures approximately 95 per cent of globally traded CDSs, making it the most accurate and comprehensive publicly available dataset for CDS positions and trading.⁴⁸

Since October 2008, the DTCC has provided weekly CDS position data, disclosing the aggregate gross notional as well as the aggregate net notional outstanding on a particular reference entity. At the end of 2008, the top ten outstanding net notional sovereign CDS positions included the following EU sovereigns: Italy, USD 18 billion; Spain, USD 14 billion, Germany, USD 10 billion; and Greece, USD 7 billion.⁴⁹ In contrast, by the end of 2010, the sovereign CDS market had increased in size: for instance, the top ten positions outstanding included Italy, USD 26 billion; France, USD 18 billion; Spain, USD 17 billion; Germany, USD 15 billion; UK, USD 12 billion; Portugal, USD 8 billion; and Austria, USD 7 billion.⁵⁰

However, while the market has undoubtedly increased in importance since 2008, it is still small in terms of its relative size to the government debt market. For example, the International Monetary Fund (IMF) calculated that there was approximately USD 50 trillion total government debt outstanding at the end of 2011.⁵¹ In contrast, there were only approximately USD 3 trillion sovereign CDSs outstanding at that time.⁵² Similarly, a 2012 report on the CDS market by the International Organisation of Securities Commissions (IOSCO) observed that the

⁴⁵ BIS (2014), at p. 7. This figure includes single and multi-name instruments. Note that to an extent the overall reduction in the size of outstanding CDS positions since 2007 has been assisted by the industry technique of 'trade tear-ups' or 'portfolio compression'. For further details, see Appendix 1. The decline in overall CDS activity over the years has also been due to a contraction in inter-dealer activity, see BIS (2014), at p. 5.

⁴⁶ Percentages calculated based on the information in the BIS statistical release (May 2014), see BIS (2014). Out of 2.6 trillion, approximately 2.5 trillion were single-name sovereign CDSs.

⁴⁷ All major dealers register their standard CDS trades with the DTCC, which enters these into a Trade Information Warehouse (TIW).

⁴⁸ Oehmke and Zawadowski (2014), at p. 8.

⁴⁹ IMF (2013), at p. 4. Figures drawn from DTCC data and IMF calculations.

⁵⁰ Greece was below the top ten of outstanding positions at USD 6 billion. The prominence of Italy could have reflected dealers hedging counterparty risk associated with large uncollateralised OTC transactions with Italy. Likewise, the increased amount of sovereign CDS activity referencing Germany and the UK reflected them serving as a safe haven trade or proxy hedge. IMF (2013), at pp. 4–5.

⁵¹ This was defined as an aggregate of the general government debt that had notional amounts outstanding in terms of sovereign CDSs.

⁵² IMF (2013), at p. 4; BIS (2012), Table 7 (gross notional amount).

size of the CDS market relative to public debt for euro area sovereigns had remained relatively stable since 2008, contrary to the perception that the debt crisis had increased the demand for CDSs for hedging purposes.⁵³ Indeed, IOSCO also noted that the ratio of net notional to public debt had remained stable or had actually decreased for countries more exposed to the crisis including Greece, Ireland and Portugal.⁵⁴

As observed at the start of this Section, this data helps to illustrate that the sovereign CDS market is only a small part of the overall CDS market, which itself is only a minor segment of the OTC derivatives market. Further, sovereign CDSs represent only a small fraction of the total government debt outstanding.⁵⁵ It is useful to keep these points in mind when moving to examine the interaction between the sovereign CDS and bond markets in Sect. 3. Finally, and more generally, given the very small size of the sovereign CDS market, it is also relevant to ask whether this market should have been such a concern for regulators, particularly in comparison with other, much larger, derivatives markets.

3 Interaction Between the Sovereign CDS and Bond Markets

3.1 Introduction

As already observed, during the sovereign debt crisis, politicians and regulators contended that the interaction between the bond and CDS markets could result in mispricing on the bond market and lead to higher funding costs for governments.⁵⁶ Essentially, when investors are concerned about a country's financial stability, they will demand higher returns (i.e., higher yields) on government bonds to compensate for the higher level of risk, and this will increase a country's cost of borrowing.⁵⁷ Further, if the default probability on a bond increases, parties holding CDSs will profit from the increasing value of their position.⁵⁸ The common assertion of

⁵³ IOSCO (2012), at pp. 7–9.

⁵⁴ *Ibid.*, at p. 9.

⁵⁵ IMF (2013), at p. 4. Indeed, also compare the figures with earlier data produced by the Hedge Fund Standards Board (HFSB). The HFSB noted that at the end of 2009, CDSs constituted only 5 per cent of the overall OTC derivatives market (gross figures) and sovereign CDSs constituted approximately only 11 per cent of the overall CDS market (net figures) in April 2010, and that the sovereign CDS market was small in terms of relative size to government debt (sovereign CDSs were approximately 1 per cent of government debt) in May 2010, see HFSB, HFSB Response to the European Commission Public Consultation on Short Selling (2010), at p. 8.

⁵⁶ Impact Assessment, *supra* n. 21, at p. 24.

⁵⁷ Investors will start selling bonds to reduce exposure to government debt, pushing interest rates higher. Further, if bond yields are higher, the interest rate costs for the country will be much greater and the government will have to spend a large proportion of tax revenues on interest payments making it difficult to reduce government debt (and it will also be difficult for a government to raise new money as it has to pay an interest rate that is acceptable to the market).

⁵⁸ Economic and Monetary Affairs Policy Department: European Parliament, Assessment of the cumulative impact of the various regulatory initiatives on the European banking sector, Brussels, August 2011, at p. 20.

regulators and governments is that a rise in CDS prices will lead to a collapse in the underlying bond market prices, leading to higher funding costs for governments.⁵⁹

Consequently, during the crisis, regulators and governments became concerned about the incentives of CDS traders and that they could seek to speculate on a country's default.⁶⁰ Specifically, a letter from German Chancellor Merkel and French President Sarkozy to the Commission President in March 2010 demanded an inquiry into speculative practices in connection with CDS trading of government bonds. They stated that if such an examination demonstrated that such practices were having an impact on the development of bond yields, it should be considered whether it was necessary to pass appropriate legislation.⁶¹

With this in mind, the interaction between the two markets should be analysed as to whether CDS prices are capable of manipulating bond prices. Specifically, for some, any evidence that CDS prices can sometimes lead price developments is then interpreted as indirectly demonstrating that CDS prices can manipulate bond prices and that restrictions should be introduced.⁶²

This Section discusses the relevant economic literature that broadly suggests that the sovereign CDS market contributes to credit market price discovery but that the market is not perfectly 'efficient' or necessarily more price informative than the bond market with respect to credit risk.⁶³ Further, the findings that the CDS market sometimes incorporates information faster than the bond market is not evidence that there is anything the matter with the CDS market, and nor should the findings be used as indirect evidence that CDS prices are capable of manipulating bond prices, driving up the cost of government funding.⁶⁴ Indeed the European Commission's (hereinafter 'the Commission') own Task Force that was set up to examine the effects of CDS trading during the sovereign debt crisis concluded that there was no conclusive evidence that developments in the sovereign CDS market had caused higher funding costs for Member States.⁶⁵

3.2 Does One Market Lead the Other?

3.2.1 Overview

CDSs relate to the credit risk of an issuer: the risk of default of the issuer on its obligations towards its creditors. Equally, a bond purchaser is also exposed to various risks, including the credit risk that the issuer of the bond may not return the

⁵⁹ AIMA (2011), at p. 14.

⁶⁰ Economic and Monetary Affairs Policy Department: European Parliament, *supra* n. 58, at p. 20.

⁶¹ S Fidler, 'What Sarkozy, Merkel wrote on CDS', *The Wall Street Journal*, 11 March 2010.

⁶² AIMA (2011), at p. 7; IMF (2013), at p. 15. Broadly, the argument is that if CDS market movements cause movements in the underlying bond market, this provides easy manipulation opportunities.

⁶³ Shadab (2010), at p. 458; IMF (2013), at p. 24.

⁶⁴ IMF (2013), at p. 15. Rather, what policymakers can legitimately worry about is manipulative shorting behaviour.

⁶⁵ European Commission (2010), at pp. 21–22.

bond's principal amount at maturity.⁶⁶ More technically, economists explain the relationship as follows: if one takes the yield of a bond with a credit risk and subtracts the yield of a comparable bond that is free from credit risk, the credit risk spread component can be isolated.⁶⁷ The credit spread of a bond of a particular sovereign and the CDS spread (or premium) for that sovereign should be closely linked as they both measure credit risk compensation for the sovereign (this is described as the 'no arbitrage' relationship).⁶⁸ The academic literature suggests that in a perfect market without frictions, both markets should be equally efficient and should adjust simultaneously when there is new information on credit risk: price discovery should occur at the same time.⁶⁹

In practice, however, due to various market imperfections,⁷⁰ the difference between the CDS spread and the bond spread (the basis) tends not to be zero in the short run and can at times become sizeable.⁷¹ Such imperfections have led to researchers investigating, amongst other issues, which of the markets (the CDS or the bond market) is the more informationally efficient (i.e., which market leads price movements and reflects credit risk more efficiently).⁷² There was already some existing consensus that the CDS market was more efficient than the bond market regarding price discovery for corporate reference entities.⁷³ Such findings are in line with the greater liquidity of the corporate CDS market compared with the secondary corporate bond market (which is often illiquid), making it more straightforward to buy a CDS than to trade the bond.⁷⁴ However, the economic empirical findings have been much more mixed for sovereign entities.

Appendix 2 to this paper summarises the main empirical work in this relatively young field of literature, and it is clear that the mixed findings in this area can, to an extent, be attributed to different methodological choices, including the use of

⁶⁶ Impact Assessment, *supra* n. 21, at p. 14.

⁶⁷ BIS (2013), at pp. 5–6. See also Duffie (1990), p. 73. Note that most papers compare CDS spreads to bond spreads rather than bond yields. Bond spreads are the difference between the bond yield and the 'interest rate swap' (i.e., the risk-free rate), although some papers use German bonds as the risk-free measure.

⁶⁸ BIS (2013), at pp. 5–6.

⁶⁹ Chan-Lau and Kim (2004), at pp. 3–4.

⁷⁰ For instance, there may be differences in the relative liquidity of the two markets (i.e., the number of participants in a given market); there may be costs attached to shorting bonds; tax effects; and other factors, including counterparty risks.

⁷¹ BIS (2013), at p. 6. At some point however, arbitrage opportunities will become feasible, enabling investors to profit from the non-zero basis, and it will tend to revert back to zero in the long run.

⁷² Augustin (2014).

⁷³ See, e.g., Blanco et al. (2005), at p. 2255; Zhu (2006), at p. 211. This means the CDS market leads the bond market and is responsible for price movements.

⁷⁴ Coudert and Gex (2013), at p. 499. Indeed, IOSCO reported that, globally, net CDS exposure to private entities was four times higher than to sovereign entities at the end of 2011, see IOSCO (2012), at pp. 7. IOSCO did observe, however, that although current research clearly showed that CDSs led the price discovery process for private issuers, it was not clear whether this depended on the fact that CDSs were more liquid than bonds, or rather on the fact that short positions were easier to take in the CDS market. IOSCO also observed that these were not necessarily alternative explanations, see *ibid*, at pp. 36–38.

different samples, time periods and data sources.⁷⁵ Nevertheless, overall, the literature (including, crucially, the report of the Commission's own Task Force) broadly illustrates that the changes in spreads in the sovereign CDS and the bond market are mainly contemporaneous and that each market is equally likely to lead the other.⁷⁶

Notably, some of the findings also illustrate the relevance of counterparty risk in impeding the role of CDSs in price discovery: a factor that is particularly relevant given the over-the-counter (OTC) nature of the CDS market. Counterparty risk will have a negative effect on CDS prices: specifically the ability of the CDS market to lead the price discovery process will be impaired when levels of counterparty risk are high due to the perception of a lower quality of protection being sold.⁷⁷ Consequently, proposals to push such sovereign CDSs into centralised clearing under related European legislative developments would help improve the role of sovereign CDSs in price formation by reducing counterparty credit risk.⁷⁸

3.2.2 *Sovereign Debt Crisis: Main Empirical Findings*

Broadly, the literature suggests that the informational value of sovereign CDSs has become more important as the market has matured, but that the market is not perfectly 'efficient' or necessarily more price informative than the bond market with respect to credit risk.⁷⁹ The sovereign CDS market sometimes leads the bond market, the bond market sometimes leads the CDS market, and price discovery is equally likely to occur in either market.⁸⁰

Among the most directly relevant papers is the report of the Commission's Task Force on Sovereign CDSs that was mandated to examine sovereign CDS activity during the sovereign debt crisis. The report found no evidence of obvious mispricing in either the CDS or the bond market. It stated that CDS spreads for more troubled countries were cheap relative to the bond spreads, implying that CDS spreads could hardly be considered to be causing the high bond yields in these countries.⁸¹ This was also consistent with a sufficient supply of insurance being offered to troubled countries and with speculators acting as insurance providers at such times. This

⁷⁵ Augustin (2014), at p. 21; BIS (2013), at p. 4. For findings relating to emerging markets, see, e.g., Chan-Lau and Kim (2004); Ammer and Cai (2011), at p. 369.

⁷⁶ European Commission (2010), at pp. 21–26; Seretakakis (2013), at p. 135. Seretakakis also notes that in cases where price changes in the CDS market did lead changes in the underlying bond market, the changes in CDS spreads were linked to fundamentals responding to country-specific events, see *ibid.*, at p. 135.

⁷⁷ Arce et al. (2013), at p. 127; Levy (2009), at p. 35. Levy's findings also suggested that changes in the relative liquidity in the two markets could explain why there was no consistent pattern of one market leading the other. See Appendix 2.

⁷⁸ See Sect. 3.2.2 for problems with this proposal, however.

⁷⁹ Shadab (2013), at p. 458; IMF (2013), at p. 10; Augustin (2014), at p. 24.

⁸⁰ There may be good reasons why there are particular periods when one market leads the other, including which market has the higher liquidity on a given day, see European Commission (2010), at pp. 16; IOSCO (2012), at pp. 36.

⁸¹ European Commission (2010), at pp. 21–22.

could be considered beneficial as it allowed institutional investors to take on more debt and keep the yields for such countries lower than otherwise would be possible.⁸² Next, the spreads in the two markets were mainly contemporaneous and the vast majority of countries showed no lead or lag behaviour. When not changing contemporaneously, either the CDS or the bond market was equally likely to lead or lag the other, and the report concluded that price discovery was equally likely to occur on the CDS or the bond market.⁸³

Likewise, a 2013 paper by Arce et al. suggested that although the CDS market led price discovery in most euro areas in normal times, during periods of acute stress in the eurozone, the bond market led the price discovery process. The authors also re-emphasised the importance of levels of counterparty risk in explaining some of the variation in the price discovery process. In particular, they observed that increased levels of counterparty risk impaired the ability of the CDS market to lead the price discovery process due to the perception of a lower quality of protection being sold.⁸⁴ Finally, research conducted by the IMF observed that sovereign CDSs tended to reveal information quicker during times of stress but not at other times, and that the informational value of CDSs had become more important but varied widely over countries and over time.⁸⁵ Notably, the IMF concluded that, overall, the evidence did not support the need to ban purchases of naked CDS protection.⁸⁶

The findings that the CDS market sometimes incorporates information faster than the bond market does not provide evidence that there is anything wrong with the CDS market, nor should it be used as indirect evidence that CDS prices are capable of manipulating bond prices, driving up the cost of government funding.⁸⁷ Indeed, a qualitative paper by Duffie observed that in the case of financially weaker European sovereigns, as the aggregate net CDSs represented such an insufficient portion of the total debt outstanding, CDSs would not be able to manipulate and affect the underlying debt.⁸⁸

Duffie noted that setting aside the fact that it was very difficult to profit from manipulation, achieving a sizeable price impact (through aggressive purchases of naked CDSs) would require manipulators to take positions that were large relative to the underlying debt.⁸⁹ The author specifically analysed the case of Greece and

⁸² *Ibid.*, at p. 22.

⁸³ *Ibid.*, at p. 25. See also Fontana and Scheicher (2010); O’Kane (2012), March–April 2012 (both detailed in Appendix 2), for similar findings.

⁸⁴ Arce et al. (2013), at p. 127. See further details in Appendix 2. See also Delis and Mylonidis (2011), at p. 163 (detailed in Appendix 2), which found that CDSs lost their leading role in the price discovery process during stressful conditions. See BIS (2013) and Palladini and Portes (2011), (both detailed in Appendix 2) for findings that the CDS market leads the bond market for most countries in terms of price discovery.

⁸⁵ IMF (2013), at p. 10.

⁸⁶ *Ibid.*, at p. 1; See also IMF (2010) Meeting new challenges to stability and building a safer system, April 2010, at pp. 46–48, where the IMF cautioned against a ban on naked sovereign CDSs.

⁸⁷ IMF (2013), at p. 15.

⁸⁸ Duffie (2010), at p. 57; del Marmol (2011), at p. 59.

⁸⁹ Duffie (2010), at p. 57. He also observed that manipulation through spreading false information would also be difficult to achieve, see *ibid.*, at pp. 57–8.

observed that the aggregate of net CDS positions for Greece had remained well under three per cent of the total amount of Greek debt outstanding between October 2008 and July 2010.⁹⁰ He concluded that even if all the holders of CDSs on Greece had been pure speculators, this would only have had a minor effect on bondholders.⁹¹

Ultimately, the literature broadly demonstrates that the sovereign CDS market contributes to credit market price discovery,⁹² but that there is no strong evidence conclusively linking sovereign CDS trading with instability in the bond market.⁹³ Indeed, in line with Duffie's paper, given the tiny size of the sovereign CDS market compared with the underlying bond market, manipulation of the latter by the former would be very difficult to achieve.⁹⁴

Further, on a related point to these findings, given that counterparty risk can clearly impede the ability of the CDS market to lead the price discovery process, moving sovereign CDSs through centralised clearing would reduce counterparty risk and help improve the contribution of sovereign CDSs to price discovery.⁹⁵ However, it is also recognised in this regard that it is trickier to centrally clear sovereign CDSs than other derivatives. Specifically central counterparties (CCPs) are reluctant to clear sovereign CDSs due to concerns about 'wrong-way' risks. Clearing participants are required to post collateral to cover losses, and as this will be in the same currency as that underlying the sovereign CDS contract, the distress of a sovereign could lead to a vicious cycle that will impair the value of the collateral while increasing the risk in the CDS contract.⁹⁶ Aside from this concern and on a more practical point, sovereigns are also likely to be out of scope of the centralised clearing requirements introduced in the European Market Infrastructure Regulation (EMIR).⁹⁷

⁹⁰ *Ibid.*, at p. 57. He further observed that in every week since the DTCC had started reporting market-wide CDS positions, the increase in aggregate protection bought against Greek sovereign debt was less than 0.18 per cent of the total Greek sovereign debt outstanding.

⁹¹ See also Stulz (2010), at p. 83, who, in the context of the financial crisis, argued that CDS trading did not of itself lead to an acceleration of the turbulence leading to the default of Lehman Brothers. Likewise, see Shadab (2013), at p. 458, who noted that concerns about market manipulation should be carefully balanced against the role played by CDSs in contributing to credit market price discovery.

⁹² Shadab (2013), at p. 458.

⁹³ Moloney (2014), at p. 542; IOSCO (2012), at pp. 1, 38.

⁹⁴ Impact Assessment, *supra* n. 21, at p. 25. Further, even if one believed that price discovery in the sovereign CDS market was in fact indirect evidence in favour of price speculation driving up public borrowing costs, the ambiguous empirical results should caution against making any drastic regulatory changes that could negatively affect the 'efficient information transmission in financial markets', Augustin (2014), at pp. 29–30.

⁹⁵ Central clearing would enforce strong risk management standards, multilateral netting of positions and sharing of extreme losses, IMF (2013), at p. 17.

⁹⁶ *Ibid.*, at pp. 17–8.

⁹⁷ ISDA, Overview of US and EU OTC derivatives regulatory reforms (2014), at p. 7.

4 Banning Naked Sovereign CDSs?

In March and April 2010, the German regulator BaFin and the Chair of CESR commented that there was no evidence of CDSs being used to speculate on government bonds.⁹⁸ Despite this, both Chancellor Merkel and President Sarkozy started to raise concerns as to the possible role played by CDSs in relation to the price of Greek government bonds. Subsequently, in May 2010, concerns that naked sovereign CDSs were being used to ‘gamble’ on the health of sovereigns led to BaFin introducing a ban on naked sovereign CDSs on euro-area government bonds.⁹⁹ BaFin justified the ban on the basis of exceptional volatility in euro-area bonds and the danger that excessive price shifts could trigger significant disadvantages for financial markets and threaten the stability of the entire financial system.¹⁰⁰ Nevertheless, given the unilateral nature of the act, it was likely to have been politically driven, especially caused by pressure on Chancellor Merkel within her own political party in relation to the German response to the Greek debt crisis. Indeed, the feeling that Germany had also acted to improve its own finances was compounded by its ability to simultaneously issue new debt at the cheapest rate since 1998, aided by the short squeeze created by the ban.¹⁰¹

4.1 Impact of the German Ban

A 2012 paper by Pu and Zhang specifically analysed the global impact of the German ban on the sovereign CDS market and examined five-year sovereign CDS spreads over the period 12 October 2000 to 5 April 2011.¹⁰² The authors considered the time trend of CDS spreads, volatility, liquidity, and macroeconomic conditions across fifty-four countries, including the ‘PIIGS’ countries (Portugal, Ireland, Italy, Greece and Spain).¹⁰³ In line with the majority of the wider short selling literature that analysed the impact of short selling bans during the financial crisis, the authors

⁹⁸ In April 2010, CESR Chair Eddy Wymeersch was quoted as saying that CESR had not seen clear signs of any speculation or abuse in these markets. See, e.g., AFME, ISLA and ISDA Joint Response to the European Commission’s Public Consultation on Short Selling (9 July 2010), at p. 13. Equally, the German regulator BaFin came to a similar conclusion in March 2010. It clarified that, based on its monitoring of the markets for government bonds and CDSs of selected countries within the euro area, it had not found any evidence of CDSs being used to speculate against Greek government bonds, see BaFin Federal Financial Supervisory Authority, ‘BaFin clarifies: so far no evidence of massive speculation against Greek bonds’, BaFin News Release 8 March 2010.

⁹⁹ The ban also covered naked short sales on sovereign debt, and naked short sales of shares in particular banks and insurers. See A Crawford, ‘Germany to temporarily ban naked short selling, some swaps of euro bonds’, Bloomberg, 18 May 2010.

¹⁰⁰ S-M Ishmael, ‘BaFin statement on Germany’s naked short selling ban’, FT Alphaville, 18 May 2010. Germany subsequently made the ban permanent in July 2010.

¹⁰¹ H Wilson, ‘Markets crash as German short-selling ban bites’, The Telegraph, 19 May 2010. Indeed, it is likely that such a ban created more of a preference for ‘safe’ German bonds (a ‘flight to safety’), meaning lower funding costs for Germany compared with other countries.

¹⁰² Pu and Zhang (2012), at pp. 176–7.

¹⁰³ *Ibid.*, at pp. 172–176. The sample included the PIIGS countries, seven other eurozone countries, fifteen non-eurozone European countries, nine Asian countries, seven Middle Eastern countries, eight South American countries, Australia, New Zealand and South Africa.

found that CDS spreads continued to rise after the ban in the debt crisis region and that market liquidity was also impaired for the PIIGS countries.¹⁰⁴ However, in contrast to the effect of short sale bans on the equity markets, the authors did observe that the ban helped reduce CDS volatility.¹⁰⁵ The authors also observed that sovereign CDS spreads were closely related to a country's macroeconomic conditions: for instance, the PIIGS countries, whose CDS spreads had increased considerably since early 2010, had slower economic growth, lower reserves and higher debt in gross domestic product (GDP).¹⁰⁶

Overall the authors' findings demonstrated that where a sovereign entity could not improve its economic condition, banning speculation on naked CDSs or short bond positions was not capable of 'suppressing the rampantly rising sovereign yields'.¹⁰⁷

4.2 Impact of a Permanent Prohibition?

With this in mind, before turning to examine the provisions now introduced by the Regulation, it is also helpful to reflect on the possible implications of a permanent prohibition on naked sovereign CDSs. First, it is likely that a permanent prohibition would destroy the market.¹⁰⁸ For instance, if the CDS market consisted of only hedgers, these market participants would not find counterparties, as the market would have no liquidity.¹⁰⁹ Indeed, the presence in the market of those who previously purchased naked sovereign CDSs and were then able to take the other side and sell protection could also help mitigate volatility during crisis times.¹¹⁰ Hence, the absence of such market participants could in fact lead to less rather than more stability.¹¹¹ Further, in a 2010 paper, Stulz observed that there was no evidence that removing naked purchases of CDSs would help the economy 'any more than attempts to reduce stock short-sales did during the crisis'.¹¹²

A 2010 paper by Duffie reiterated these points, noting that regulations restricting speculation in the CDS market could have the unintended consequence of reducing market liquidity and this would raise trading execution costs for other investors who were not speculating.¹¹³ Indeed, in line with Pu and Zhang's findings, imposing

¹⁰⁴ *Ibid.*, at p. 173. The majority of the short selling literature reported that short selling bans usually lead to an increase in bid-ask spreads for banned stocks, see, e.g., Boehmer et al. (2013), at p. 1363; Clifton and Snape (2008).

¹⁰⁵ Pu and Zhang (2012), at pp. 172–3. The authors noted that this could be due to shrinking speculation activities after the ban. Due to the ban, investors could be cautious as to using CDSs to express their view on the sovereign credit risk and might be forced to unwind their position.

¹⁰⁶ *Ibid.*, at p. 173.

¹⁰⁷ *Ibid.*, at p. 172.

¹⁰⁸ Stulz (2010), at p. 85.

¹⁰⁹ *Ibid.*, at p. 85.

¹¹⁰ AIMA (2011), at p. 15.

¹¹¹ *Ibid.*, at p. 15.

¹¹² Stulz (2010), at p. 85.

¹¹³ Duffie (2010), at p. 58. He also noted that it would lower the quality of information provided by CDS rates regarding the credit quality of bond issuers.

restrictions could in fact have the opposite effect to that which is intended and increase the borrowing costs for sovereign issuers.¹¹⁴ Equally, making the hedging of sovereign debt more challenging could also discourage the purchase of sovereign debt, which could also have knock-on effects on interest rates and public deficits.¹¹⁵ Further, by attempting to ban traders with negative information or beliefs, economic problems could also be delayed by ‘closing the collective eyes of the market’.¹¹⁶

Next, introducing a prohibition on naked sovereign CDSs would likely be ineffective. For instance, as will be discussed further in Sect. 5 below, as there are substitute strategies that can be used, such a ban (particularly in the absence of supranational coverage) may only encourage market participants to engage in regulatory arbitrage and move their positions into other assets correlated with sovereign risk that could also involve less transparent instruments, or to offshore jurisdictions.¹¹⁷ Indeed, spillover into other markets could come with the unintended consequence of reducing financial stability.¹¹⁸ With this in mind, if the intention of the regulators is to simply discourage all and any speculation against a sovereign issuer, then the net should in fact be cast much further than naked sovereign CDSs to also encompass all such instruments that allow taking positions on the credit risk of an issuer that benefit from the worsening of a country’s credit risk.¹¹⁹

Ultimately it is clear that a ban on naked CDSs will not prevent markets reacting to adverse information, and in the case of sovereigns it would seem far more prudent to focus on tackling the underlying fiscal problems of a country rather than seeking to ban the symptoms of the problem.¹²⁰

4.3 Burning Down Your Neighbour’s House?

It is also relevant here to observe an analogy that particularly surfaced in the media during the sovereign debt crisis. This suggested that the purchase of a naked sovereign CDS was akin to buying insurance on your neighbour’s house.¹²¹ It was argued that just as such a situation would give a policyholder an incentive to then

¹¹⁴ Ibid, at p. 58. For instance a ban on CDSs could actually add to the pressure on government bonds leading to increased bond selling, making it more expensive for governments to borrow or service their debt. See BBA, European Consultation on short selling: a response by the British Bankers’ Association (July 2010), at p. 13.

¹¹⁵ AFME, ISLA and ISDA, *supra* n. 98, at p. 20.

¹¹⁶ D Mason, ‘The Senator has no clothes: why a ban on “naked” credit default swaps is ill-advised and impractical. The Heritage Foundation, May 2010, at p. 2.

¹¹⁷ AIMA (2011), at p. 13. Indeed, the Commission observed that a ban could easily be circumvented by investors trading CDSs in non-EU countries and that there was very little the EU regulators could do about this. See Impact Assessment, *supra* n. 21, at p. 47; Juurikkala (2012), at p. 340.

¹¹⁸ IMF (2013), at p. 21.

¹¹⁹ Italian Treasury, EC Public Consultation on Short Selling, 9 July 2010, at pp. 3–4. This would include, for instance, futures and options.

¹²⁰ Deutsche Bank, Deutsche Bank research: credit default swaps (December 2009), at p. 23; AIMA (2011), at p. 13.

¹²¹ See, e.g., W Münchau, ‘Time to outlaw naked credit default swaps’, Financial Times, 1 March 2010.

burn down their neighbour's house, equally a purchaser of a naked sovereign CDS would prefer to then see the borrower default. This can also be described as creating a risk of 'moral hazard'. For instance, if a market participant purchased a sovereign CDS without having a proportionate insurable interest in the underlying debt obligation or exposure to the underlying credit risk, the holder of the CDS could have a perverse incentive to precipitate a default and obtain the pay-out from the CDS.¹²²

This analogy starts to break down, however, when one bears in mind that the buyer of the naked sovereign CDS is unlikely to be able to increase the chance of, or in fact trigger, a borrower defaulting. This is particularly the case given that, as already observed, the sovereign CDS market only represents a tiny fraction of the underlying bond market.¹²³ Indeed, as Duffie observed, Greece had already borrowed far more than it could pay back before CDS rates rose significantly.¹²⁴ Further, a greater moral hazard may also potentially arise if a CDS protection buyer is a lender who is hedging its large loan to a sovereign borrower using a sovereign CDS. Such a lender may no longer be as interested in monitoring the borrower's credit quality and could in fact have more of an incentive than a purchaser of a naked CDS to force the borrower to default: the 'empty creditor' problem.¹²⁵

4.4 Legal Recharacterisation as an Insurance Contract?

Separately, the relationship between naked CDSs and contracts of insurance should also be considered. Specifically it is clear that the economic effect of a naked CDS is similar to the effect of an insurance contract against the risk of default without an insurable interest. Consequently, if such a CDS contract were to be also legally characterised as an insurance contract it would be void, whereas if termed as a CDS (in the absence of a ban) it would be valid.¹²⁶

This question of whether credit derivatives might be legally recharacterised as insurance contracts was widely debated in the 1990s, and Robin Potts QC was instructed, on behalf of the International Swaps and Derivatives Association (ISDA), to provide an Opinion with respect to these concerns. Broadly, he advised that although insurance contracts and credit derivatives were functionally similar, credit derivatives were legally distinct as the payment obligation was not conditional on the payee's loss and there was no requirement for an insurable interest.¹²⁷ With this in mind he concluded that for regulatory purposes, entering

¹²² Impact Assessment, *supra* n. 21, at p. 25.

¹²³ Duffie (2010), at p. 58.

¹²⁴ *Ibid*, at p. 58.

¹²⁵ *Ibid*, at p. 58. See further Hu and Black (2008), p. 625. However, it is also acknowledged that, as assessment of sovereign creditworthiness largely rests on public information, this may not be of such relevance as for corporate entities.

¹²⁶ Hence, the legal treatment will differ depending on the parties' legal characterisation of the contract.

¹²⁷ Benjamin (2007), paras. 5.140–5.142.

them could not be characterised as insurance business.¹²⁸ The Potts Opinion was relied on by the whole industry as conclusive,¹²⁹ and it was subsequently observed that due to the huge growth of the credit derivatives market the point of no return had long passed: the consequences of a recharacterisation would be too far-reaching to be contemplated.¹³⁰ Further, the correctness of the Potts Opinion was also subsequently assumed in European legislation, where CDSs have been regulated as derivative rather than as insurance contracts.¹³¹

More generally, however, it should also be noted that the fact that CDSs resemble insurance is not sufficient to merit regulating them as such. First, many contracts contain an element of risk sharing or insurance but are not regulated as insurance contracts.¹³² Next, the reason insurance regulation does not extend to all such contracts is due to the precise purpose of insurance regulation.¹³³ In particular, one of the main justifications for a separate insurance law relates to concerns about unsophisticated consumers who need protection from entering contracts they do not understand, and such an argument does not extend to CDSs where the average market participant is sophisticated and capable of bearing losses.¹³⁴ Finally, even if one sought to regulate CDSs that look like insurance, there would be considerable difficulty in accurately drawing the dividing lines, and parties could simply contract around the lines and enter equivalent ‘synthetic’ and unregulated transactions that had the same economic effect.¹³⁵ Indeed, as will be observed below, this issue of regulatory arbitrage is now also of particular relevance with the new European rules.

4.5 Legal Recharacterisation as a Gaming Contract?

A related issue in this context is whether CDS contracts could be recharacterised as ‘gaming’ or ‘wagering’ contracts, as such contracts were historically

¹²⁸ This also had significance as, if they were so characterised as insurance, financial institutions would require to be authorised to carry out insurance business and would not be authorised to carry out other non-insurance business, Gullifer and Payne (2011), at pp. 204–5.

¹²⁹ *Ibid.*, at p. 205. The view has been questioned, however, see, e.g., Smith (2010), at p. 386, who observed that the two differences identified by Potts QC did not prevent a CDS being a contract of insurance.

¹³⁰ Benjamin (2007), para. 5.143.

¹³¹ See, e.g., Council Regulation (EU) No 236/2012 on short selling and certain aspects of credit default swaps, OJ L86/1, Art. 2(1)(c). Note, however, that the Regulation’s Recitals provide that sovereign CDSs should be based on the insurable interest principle, although it has been suggested that the choice of words reflects a policy intention rather than seeking to re-introduce questions about regulating CDSs as insurance contracts, see Slaughter and May (2012) *The European Regulation on short selling and CDS* (July 2012), at p. 4.

¹³² Henderson (2009), at pp. 4–5. Henderson provides the example of a farmer who enters into a contract to allow him to sell his crop at a fixed price in the future (a ‘forward’ contract) and is insuring against an increase in the price of wheat yet this is not regulated as an insurance contract.

¹³³ *Ibid.*, at pp. 4–6.

¹³⁴ Gullifer and Payne (2011), at p. 208.

¹³⁵ Henderson (2009), at p. 33; Gullifer and Payne (2011), at p. 208.

unenforceable.¹³⁶ It is unlikely, however, that naked CDSs could be so classified. First, English case law has held that speculation must be the sole purpose of both parties to the contract for the term to apply.¹³⁷ With this in mind it would be very difficult to show that both parties to a CDS contract were intending purely to gamble. For instance, many CDS purchasers would be using the contract as a hedge, whereas the sellers would be seeking to provide a service for a price to make a profit.¹³⁸ Further, and more practically, this is no longer an open question as the Gambling Act 2005 now provides that ‘the fact that a contract relates to gambling shall not prevent its enforcement’.¹³⁹

5 EU Regulation: A Ban on Naked Sovereign CDSs

5.1 Articles 4 and 14

Turning to then consider the precise rules introduced by the Regulation, the final rules are complex, reflecting the Parliament’s desire to prohibit naked sovereign CDS activity, whilst also seeking to try and enable legitimate hedging behaviour. Article 14 provides that a person may enter into sovereign CDS transactions only where the transaction does not lead to an uncovered position in a sovereign CDS as referred to in Article 4.¹⁴⁰ Article 4 then provides for two types of permitted hedging. First, hedging is permitted where the sovereign CDS serves to hedge against the risk of default of the issuer where the person has a long position in the sovereign debt of that issuer to which the sovereign CDS relates.¹⁴¹ Secondly, proxy hedging is permitted where the sovereign CDS serves to hedge against the risk of the decline of the value of the sovereign debt where the person holds assets, or is subject to liabilities, including but not limited to financial contracts, a portfolio of assets, or financial obligations, the value of which is correlated to the value of the sovereign debt.¹⁴²

Proxy hedging is crucial to hedging and risk management in the CDS market; however, in many cases it can be difficult to clearly distinguish between legitimate and illegitimate hedging activities.¹⁴³ Consequently, as will be considered in

¹³⁶ Benjamin (2007), para. 5.136. See, for instance, Section 18 of the Gaming Act 1845. If this were the case, there would be no naked CDSs, although there would still be short selling.

¹³⁷ See Hawkins J in *Carlill v. Carbolic Smoke Ball Company* [1892] 2 QB 489, 491.

¹³⁸ Smith (2010), at p. 406.

¹³⁹ Section 335(1); Benjamin (2007), para. 5.144.

¹⁴⁰ Regulation 236/2012, Art. 14(1). However, the Article 14 restrictions do not apply to market makers, see Art. 17(1). Further, to exclude retroactive effect, transactions resulting in an uncovered position in a sovereign CDS that were concluded before 25 March 2012 may be held to the maturity date of the CDS contract, see Art. 46(2).

¹⁴¹ *Ibid.*, Art. 4(1)(a).

¹⁴² *Ibid.*, Art. 4(1)(b).

¹⁴³ Moloney (2014), at p. 542; Commission Delegated Regulation (EU) 918/2012 supplementing Regulation No 236/2012 on short selling and certain aspects of credit default swaps with regard to definitions, the calculation of net short positions, covered sovereign credit default swaps, notification thresholds, liquidity thresholds for suspending restrictions, significant falls in the value of financial instruments and adverse events, OJ 274/1, Recital 6.

Sect. 5.2 below, the related technical rules introduce a complex set of requirements that are tricky for market participants to meet with complete certainty in practice.

5.2 Delegated Regulation 918/2012: Conditions

5.2.1 Geographical Scope

First, although a wide range of exposures can be hedged,¹⁴⁴ the use of sovereign CDS to hedge cross-border risks is not generally permissible. ESMA stated that it was the intention of the co-legislators that the geographical scope of the rules should not be drawn too broadly,¹⁴⁵ and there are only very limited exceptions to this (provided the correlation test is also met).¹⁴⁶

The geographical requirements are problematic, particularly as such constraints could limit responsible risk management. Specifically, there may be several legitimate reasons for hedging a risk in one Member State with a sovereign CDS related to a reference entity in another Member State.¹⁴⁷ For instance, a market participant may have sovereign debt exposure to Germany but may want to buy sovereign CDS protection on Denmark, as the Danish sovereign CDS is highly correlated with, but is also a cheaper proxy for, German debt.¹⁴⁸

Further, it is also likely that such geographical restrictions could contradict core principles of the EU's single market: for instance, even if market participants meet the correlation test, they could still be prohibited from trading in a particular sovereign CDS simply because the instruments were issued in a different Member State.¹⁴⁹ This sits uncomfortably with the vision of a single European financial market and could in fact provide a disincentive in relation to cross-border business.¹⁵⁰

Likewise, despite ESMA observing that it was the co-legislators' intention that the geographical scope of the rules should not be drawn too widely, when one considers the wording of the Regulation itself, it does not explicitly state that hedging can only be within one Member State.¹⁵¹ Article 4 is silent on this issue,

¹⁴⁴ See *ibid.*, Art. 17.

¹⁴⁵ ESMA, Technical advice on possible delegated acts concerning the Regulation on short selling and certain aspects of credit default swaps ((EC) No 236/2012), Final Report ESMA 2012/263, April 2012, at p. 39.

¹⁴⁶ For instance, where the sovereign CDS references the sovereign Member State of a parent company that gives credit support to a subsidiary in another Member State, a sovereign CDS position will not be considered uncovered where it is to hedge exposure to the subsidiary, Delegated Regulation 918/2012, Art. 15(1)(a).

¹⁴⁷ AFME and ISDA, ESMA Call for Evidence, 15 March 2013, at p. 37.

¹⁴⁸ 'Short selling and CDS regulation in EU: less to nakedness than meets the eye, funds and firms argue', Reuters, 5 March 2012.

¹⁴⁹ AFME and ISDA, *supra* n. 147, at p. 37.

¹⁵⁰ *Ibid.*, at p. 37. For instance, it could encourage companies to conduct business in their home country as counterparties would be better able to hedge their exposures to entities in the home Member State.

¹⁵¹ Managed Funds Association, Response to Consultation on draft technical standards on possible delegated acts, March 2012, at pp. 11–12.

and Recital 21 states that such interests ‘include’ hedging against the risk of default of a sovereign issuer. Recital 21 then provides examples of a wide range of exposures that could be eligible for hedging and although the Recital does refer to hedging exposure ‘in the Member State concerned’ this is arguably an example rather than a requirement that hedging can only be within one Member state.¹⁵²

5.2.2 Proportionality

Next, there is a broad proportionality requirement: the size of the sovereign CDS position must be proportionate to the size of the exposure that is being hedged. As matching assets and liabilities to create a perfect hedge is difficult in practice due to the diverse characteristics of different assets and liabilities, as well as the volatility in their values, an exact match is not required under the rules.¹⁵³ If the exposure being hedged is liquidated or redeemed, however, it must either be replaced by equivalent exposures, or the CDS position must be reduced or otherwise disposed of.¹⁵⁴

The proportionality requirement reflects ESMA’s technical advice and has the benefit of avoiding overly narrow rules.¹⁵⁵ However, on a more practical note, the position holder cannot be hedged only when the transaction is entered into, it must maintain a continuously hedged position proportionate to the size of the exposure.¹⁵⁶

¹⁵² *Ibid.*, at p. 12. Indeed, when the Delegated Regulation was being drafted there were considerable differences of view as to whether cross-border hedging was permissible. For instance, a member of ESMA’s board of supervisors was quoted as saying that although it was not entirely clear from the wording of the Regulation whether cross-border hedging was exempt or not, ESMA had received a ‘very strong position’ from the Commission’s legal services that it was not exempt, see, e.g., ‘Short selling and CDS regulation in EU: less to nakedness than meets the eye, funds and firms argue’, *supra* n. 148, at p. 2.

¹⁵³ Delegated Regulation 918/2012, Art. 19(1). Limited over-provision is permitted in accordance with Art. 19(2).

¹⁵⁴ *Ibid.*, Art. 19(3). Art. 20 also provides for the method of calculation of an uncovered CDS position. The calculation of a person’s position shall be of the net sovereign CDS position (i.e., any sales of the relevant sovereign CDS shall be deducted from the purchased CDS). When calculating the value of eligible assets or liabilities hedged or to be hedged by the CDS, a distinction is also made between static and dynamic hedging strategies (for further details, see Appendix 1). The value of the eligible portfolio of assets or liabilities is then deducted from the value of the net CDS position and if the resulting number is positive (i.e., the CDS position exceeds the value of the portfolio of exposures to be hedged), the position shall be considered uncovered. See further ESMA, *supra* n. 145, at pp. 43-44; Credit Suisse, The Regulation on short selling and certain aspects of CDS, Fixed Income Research, October 2012.

¹⁵⁵ Juurikkala (2012), at p. 330.

¹⁵⁶ Sidley Austin (2012), at p. 5.

5.2.3 Correlation

Finally, correlation is a key test to eligibility. The test is one of ‘simple correlation’¹⁵⁷ and the Delegated Regulation sets out alternative quantitative or qualitative correlation tests.¹⁵⁸ ESMA’s earlier technical advice proposed a purely qualitative approach, but the Commission chose to include both tests, observing that this was in line with the only EU precedent: the unilateral German ban.¹⁵⁹

The quantitative correlation test is met by showing a ‘Pearson’s correlation coefficient’ of at least 70 per cent between the price of the assets or liabilities and the price of the sovereign debt calculated on a historical basis using data for at least a period of 12 months of trading days immediately preceding the date when the sovereign CDS position was taken out.¹⁶⁰ Although this test benefits from being precise and objective,¹⁶¹ the requirement that it be calculated on a historical basis fails to take into account the fact that past correlation may change over time, or the correlation may not yet exist in relation to situations of legitimate hedging of future risks.¹⁶²

The qualitative correlation test provides that the test shall be met by showing ‘meaningful’ correlation: this is a correlation which is based on ‘appropriate’ data and is not evidence of a ‘merely temporary dependence’.¹⁶³ However, it is unclear what will be sufficient to satisfy this test. Although the qualitative limb has likely been included so that market participants can capture a broader range of correlated assets, relying on this test could be risky in practice.¹⁶⁴ For instance, where a market participant is called on to justify that the qualitative test has been met, a party could breach the prohibition if it cannot then demonstrate to the regulator that the data

¹⁵⁷ ESMA, *supra* n. 145, at p. 39. Note that this contrasts with the degree of correlation prescribed in relation to calculating net short positions in sovereign debt, where the Regulation refers to a test of ‘high correlation’, see Regulation 236/2012, Art. 3(5). Likewise, the Regulation’s restrictions on uncovered short sales in sovereign debt do not apply if the transaction serves to hedge a long position in debt instruments on an issuer, the pricing of which has a ‘high correlation’ with the pricing of the sovereign debt, see *ibid*, Art. 13(2).

¹⁵⁸ Delegated Regulation 918/2012, Art. 18(1). Some self-evident cases where the correlation test is deemed to have been met are set out in *ibid*, Art. 18(2), such as where the exposure being hedged relates to an enterprise which is owned by the sovereign issuer.

¹⁵⁹ ESMA, *supra* n. 145, at p. 39; European Commission, Impact Assessment Accompanying the Proposal for Delegated Regulation 918/2012 SWD(2012) 198, at p. 28.

¹⁶⁰ Delegated Regulation 918/2012, Art. 18(1)(a). For further details on Pearson’s correlation coefficient, see Appendix 1.

¹⁶¹ Delegated Regulation Impact Assessment, *supra* n. 159, at p. 27.

¹⁶² AFME and ISDA, *supra* n. 147, at p. 36. For example, in general, it will not be possible to use sovereign CDSs to hedge ‘tail risk’ events, see further Appendix 1. See also Managed Funds Association, *supra* n. 151, at p. 15. Further, the adoption of a historic test is linked to an assumption that the past is the only guide to the future and in other areas of financial markets this is held to be unreliable (for instance, the phrase ‘past performance is not a guide to future performance’ is often used in the context of providing financial services to retail clients).

¹⁶³ Delegated Regulation 918/2012, Art. 18(1)(b). The time frame for the calculation is set out (broadly using the historical basis of the previous twelve months but an alternative time frame can be used).

¹⁶⁴ Credit Suisse, *supra* n. 154, at p. 8.

relied on was appropriate.¹⁶⁵ Indeed, due to the uncertainties as to whether either correlation test will be satisfied, sovereign CDSs may not be used to hedge exposures, and this will lead to a shift to other instruments.¹⁶⁶

These concerns have been borne out in practice. Specifically, from August 2011 onwards, volumes of net notional European CDSs started to sharply decline, and this could have been in part due to short positions being unwound in advance of the Regulation's introduction.¹⁶⁷ In fact, some market participants indicated that positions were being unwound as it was feared that the hedging rules were 'so vague' that they could be viewed as speculating even if they were not.¹⁶⁸ Market participants also observed anecdotally that Asian participation in the European bond market had fallen to under fifty per cent since the Regulation's introduction, suggesting that the restrictions could be driving investors away.¹⁶⁹

Further, there has also been a sharp decline in the volumes traded on the European sovereign CDS indices, resulting in significantly reduced liquidity. Broadly speaking, CDS contracts on a basket of reference entities are known as 'so called index and tranche' CDSs.¹⁷⁰ Such indices comprise of many reference entities with a theme in common (e.g., European sovereigns). The index is composed of the fifteen constituents with the largest sum of weekly trading activity, and entities are weighted equally in the index.¹⁷¹ Every 6 months, a new 'series' of the index is introduced, updating the set of constituents in the index. Since the Regulation came into force, volumes traded on the main European sovereign CDS index, the Markit iTraxx SovX Western Europe Index ('SovX' index), have declined one hundred per cent (i.e., the index has essentially been shut down).¹⁷² Markit (the index provider) also announced that, until further notice, no new series of the index would be published.¹⁷³ This has also resulted in the creation of a new sub-index for SovX, known as 'ex-EU': constituents that do not form part of the European Economic Area.¹⁷⁴ Again, this only serves to further demonstrate that the

¹⁶⁵ Travers Smith, Short selling: remember, remember the first of November, 26 October 2012, at p. 3. Separately, however, it should also be observed that the Regulation does not specify penalties for infringement and only requires that these be established by the Member States. This means that penalties may vary widely between countries and that the rules could ultimately be an ineffective deterrent. See Regulation 236/2012, Art. 41; Juurikkala (2012), at p. 340.

¹⁶⁶ AFME and ISDA, *supra* n. 147, at p. 11.

¹⁶⁷ ESMA, Technical advice on the evaluation of Regulation (EU) 236/2012 on short selling and certain aspects of credit default swaps, June 2013, at p. 90; IMF (2013), at p. 17. The IMF noted that Italy was the exception to this and that this could be due to Italy having substantial uncollateralised positions with a number of banks that were using sovereign CDSs to hedge the counterparty risk on these contracts.

¹⁶⁸ IMF (2013), at p. 17.

¹⁶⁹ AFME and ISDA, *supra* n. 147, at p. 11.

¹⁷⁰ IOSCO (2012), at p. 12.

¹⁷¹ Markit, Markit iTraxx Sovx: a global sovereign CDS index family, September 2014, at pp. 3–4.

¹⁷² Deutsche Bank, ESMA Call for Evidence (15 March 2013) at p. 9.

¹⁷³ Markit, *supra* n. 171, at p. 4.

¹⁷⁴ Deutsche Bank, ESMA Call for Evidence, *supra* n. 172, at p. 9.

Regulation's constraints have negatively impacted the use of sovereign CDS indices, including for responsible risk management.¹⁷⁵

5.2.4 Opt-out

Turning then to the ability to temporarily suspend the restrictions, the Parliament was forced to concede to this possibility during the Regulation's negotiations, and the rules provide for a temporary 'opt-out' provision. Consequently, the constraints may be temporarily suspended by a national competent authority (NCA) where it has objective grounds for believing that its debt market is not functioning properly and that such restrictions may have a negative impact on the sovereign CDS market, especially by increasing the cost of borrowing for sovereign issuers or affecting the ability to issue new debt.¹⁷⁶ Such grounds include high or rising interest rates on the sovereign debt, and a widening of sovereign CDS spreads compared with other issuers.¹⁷⁷

Before suspending any restrictions, the authority must notify ESMA and the other NCAs (and ESMA shall issue an opinion within twenty-four hours but has no veto option).¹⁷⁸ A suspension is valid for an initial twelve-month period and can be renewed for six-month periods.¹⁷⁹ Where an NCA suspends restrictions, notifications of uncovered positions will then be required on reaching or falling below relevant thresholds.¹⁸⁰ Further, it should also be observed that although ESMA has been granted broad powers in the Regulation with respect to other financial instruments in emergency situations, sovereign debt is expressly excluded.¹⁸¹ In such scenarios ESMA has very limited powers, including, for instance, the right to be fully informed of relevant developments.¹⁸²

It is somewhat ironic that an opt-out has been included in the rules in the event that the CDS restrictions increase the cost of borrowing for sovereign issuers when this was precisely the rationale behind introducing the provisions in the first place.

¹⁷⁵ ESMA, *supra* n. 167, at pp. 27–8. Indeed, and on a related point, the geographical constraints also preclude the use of such European sovereign CDS indices for general EU risks that do not include all Member States or pan-euro Member States in the index. In particular, the ability to use sovereign CDS indices for cross-country hedge credit valuation adjustments concerning exposures in several Member States has been restricted (broadly, such credit valuation adjustments account for the risk of possible changes to the credit quality of a counterparty in a derivatives transaction). Such a limitation is also counter to the post-crisis European banking reforms that include the use of index CDSs for the purpose of mitigating such risk, see Deutsche Bank, ESMA Call for Evidence, *supra* n. 172, at p. 9.

¹⁷⁶ Regulation 236/2012, Art. 14(2). Note that the relevant competent authority in relation to sovereign debt of a Member State is defined in Art. 2(1)(j)(i) as the competent authority of that Member State to which the CDS relates, see also Juurikkala (2012), at p. 334.

¹⁷⁷ Regulation 236/2012, Art. 14(2)(a)–(e).

¹⁷⁸ *Ibid.*, Art. 14(2). Separately, note that in exceptional circumstances competent authorities can also restrict the ability to enter into covered sovereign CDS positions, see *ibid.*, Art. 21.

¹⁷⁹ *Ibid.*, Art. 14(2).

¹⁸⁰ *Ibid.*, Art. 8.

¹⁸¹ For a discussion of ESMA's powers in the Regulation and the related UK's constitutional challenge to these powers, see, e.g., Howell (2014), at p. 454.

¹⁸² Regulation 236/2012, Art. 29; Juurikkala (2012), at pp. 335–6.

Indeed, there is also an added paradox here in that it is precisely at the times when such opt-out powers can be exercised with respect to sovereign CDSs that regulators may also be restricting other forms of short selling.¹⁸³

5.3 Impact of the Sovereign CDS Restrictions

Regulatory intervention brings significant risks with it, and the imposition of restrictions in the area of sovereign CDSs is all the more concerning when there is little indication that such activity raises sovereign funding costs.¹⁸⁴ Indeed, there are many benefits to using sovereign CDSs, yet little to substantiate the allegations aired by governments and regulators during the sovereign debt crisis. With this in mind, the EU rules that have been introduced in this area are an example of a ‘misconceived response to a non-existent problem’.¹⁸⁵

It is recognised that, given the relatively short period the Regulation has been in operation, plus the improved situation in the sovereign debt markets, it is hard to fully ascertain the effect that the sovereign CDS restrictions have had.¹⁸⁶ Nevertheless, as ESMA’s evaluation of the Regulation (hereinafter ‘the Evaluation’) also demonstrates, it does appear clear that the sovereign CDS restrictions seem to be driving participants away from using the sovereign CDS market in practice. In particular, ESMA’s Evaluation illustrates that the sovereign CDS constraints have led to a predictable shift to other asset classes: for instance, open interest in futures contracts has increased (especially on French and Italian bonds).¹⁸⁷ Indeed, such activity will always occur when regulation covers only one aspect of a market: market participants will seek to avoid the additional costs of regulation and will redirect their market activity to the unregulated market: the ‘boundary problem’.¹⁸⁸

In the context of sovereign CDSs this poses a problem for regulators since there are ‘literally an infinite number of potential contracts and contract forms that can be used by investors to share and transfer credit risk’.¹⁸⁹ Indeed, aside from the observed shifts to government future contracts, participants can also choose to short

¹⁸³ Juurikkala (2012), at pp. 337–8. Further, such decisions may not necessarily be made by the same regulator. For instance, the relevant competent authority for sovereign CDSs are covered by the regulator of the Member State to which the CDS relates. In contrast, the relevant competent authority for shares and other financial instruments is the national regulator controlling the most relevant market in terms of liquidity for that instrument, see Regulation 236/2012, Art. 2(1)(j)(i) and (v).

¹⁸⁴ Moloney (2014), at p. 542; IMF (2013), at p. 2.

¹⁸⁵ Seretakis (2013), at p. 146.

¹⁸⁶ Indeed, it has also been observed that peripheral sovereigns were more stable following the announcement of the outright monetary transactions (OMT) plan by the European Central Bank (ECB) in September 2012. Broadly, this plan enables government bond buying by the ECB: it can engage in OMTs to address distortions in the government bond markets, provided the country complies with certain strict requirements in relation to their economic policies, see, e.g., ‘ECB’s Mario Draghi unveils bond-buying euro debt plan’, BBC News, 6 September 2012.

¹⁸⁷ ESMA, *supra* n. 167, at p. 94.

¹⁸⁸ Brunnermeier et al. (2009), Appendix; Henderson (2009), at p. 33.

¹⁸⁹ Henderson (2009), at p. 33.

the underlying bonds, use corporate CDSs¹⁹⁰ as a proxy for a sovereign CDS, and also utilise more opaque and customised OTC derivatives contracts. Further, there are also regulatory inconsistencies that enhance this issue through policymakers choosing to treat sovereign CDSs differently to corporate CDSs. With this in mind, regulators should not hold too much confidence in the European sovereign CDS restrictions proscribing contracting in the marketplace.¹⁹¹

It is also clear that the rules may reduce investor interest in the underlying bond market in many countries, and this could raise the cost of debt issuance for such sovereign issuers: precisely what the rules were seeking to prevent.¹⁹² Finally, although commercial parties may work out with time how to ‘game’ the rules to their advantage,¹⁹³ this does not excuse the introduction of an unreasonable ban in the first place.

6 Conclusion

The unsubstantiated accusations that speculative CDS activity aggravated the financial problems of sovereign issuers during the sovereign debt crisis resulted in the introduction of a permanent prohibition on all naked sovereign CDS activity. Indeed, the Regulation’s restrictions go much further than only prohibiting uncovered positions and also eliminate much legitimate hedging activity. Market participants are rightly anxious of not satisfying opaque correlation tests, and the geographical limitations are also of concern, running counter to the principles behind a single European market.

The paper suggests that this regulatory intervention is unjustified, and that market participants, including those not targeted by the ban, are withdrawing from the market.¹⁹⁴ Activity will simply be transferred to other, less transparent markets, and the restrictions may also have the unintended consequence of reducing interest in the sovereign bond market. The economic literature and evidence that the paper has considered does not support the introduction of a ban: rather, it would have been far more sensible to have engaged in tackling the underlying fiscal problems of particular Member States than simply seeking to prohibit the symptoms of the problem.

Finally, although commercial parties may work out how to use the rules to their advantage, this does not merit the introduction of the rules in the first place. One should always remain wary of ‘knee-jerk’ regulatory reforms, and in this regard it is perhaps the policymakers and not the speculators who have sold us short.

¹⁹⁰ Indeed, it has also been argued that the corporate CDS market faces a stronger theoretical rationale for regulation than the sovereign market, see Juurikkala (2012), at p. 331.

¹⁹¹ With thanks to Professors John Armour and Luca Enriques for their comments in this regard.

¹⁹² AIMA, AIMA/MFA Response to the Call for Evidence by ESMA, 15 March 2013, at p. 11; IMF (2013), at p. 17. This is particularly so where such countries do not have alternative markets for expressing views about negative sovereign credit risk.

¹⁹³ For instance, ambiguities inherent in the drafting of the rules could grant commercial participants more room to manoeuvre around the restrictions going forward.

¹⁹⁴ IMF (2013), at p. 21.

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Appendix 1

Basis points	One basis point is equal to 1/100th of one per cent. A one per cent change is equal to one hundred basis points
Basis trading	Arbitrage trading where traders try to exploit pricing differences between CDSs and the underlying debt obligations by taking offsetting positions between the two. For instance, depending on the basis, a trader can purchase the underlying bond and buy CDS protection and lock in a risk-free profit, and vice versa
CDS premium or spread	Specified fee payments the CDS purchaser is obliged to make on an annual basis. If the premium or spread increases, this means that the likelihood of an entity defaulting is increasing
'Dynamic' hedging strategy	A strategy that accommodates constant changes in risk exposure, such as credit value adjustments (such adjustments account for the risk that the creditworthiness of the counterparty deteriorates)
Granger causality tests	Broadly, this is a statistical concept of causality based on prediction that can be used in determining a weak form of causality. However, such tests can suffer from limitations where variables are omitted
Hedging 'tail risk' events	Tail risk is similar to an anticipated correlation. Although an asset may not be correlated with a sovereign CDS on a day-to-day basis, it would be expected to have a high level of correlation if there was a tail risk event, such as severe market turmoil. Such hedging is an important risk mitigation tool and is usually encouraged by regulators. In general, however, it is not possible to use a sovereign CDS to hedge against tail risk events
Notional amount	The level of CDS protection is usually expressed in terms of a notional amount being protected
Naked or uncovered sovereign CDS	Where an investor purchases a sovereign CDS without having some kind of exposure to the credit risk associated with the underlying bond
Pearson's correlation coefficient	Broadly, this is a statistic that measures the correlation between sets of data. It is a measure (between -1 and +1) of how well the sets of data are related
Proxy hedging	Hedging risks of other assets whose value is correlated to the value of the sovereign debt
'Static' hedging strategy	Where the sovereign CDS position is hedging a direct exposure to a sovereign or public sector body in the sovereign
'Trade tear-ups' (also referred to as 'portfolio compression')	This is an industry technique that broadly means that economically redundant derivatives trades are terminated early without changing the net position of each market participant
Vector Error Correction Model (VECM)	Cointegrated variables move together in the long run but there can be deviations from each other in the short run, which

continued

means they follow an adjustment process towards equilibrium. A model that considers this adjustment process is the VECM. This model also has its drawbacks however: it requires the CDS-bond basis to be sufficiently 'stable' or stationary and therefore limits it to those countries that have a stable basis (far from all countries)

Appendix 2: Overview of Main Empirical Studies: Interaction Between the Sovereign CDS and Bond Markets¹⁹⁵

Emerging Markets

Chan-Lau and Kim (2004)

Period	March 2001–May 2003
Purpose of study	The authors examine whether the bond or sovereign CDS market leads the other
Data set	They test a sample of 8 emerging market countries using daily data. ^a To undertake cross-country comparisons, they used country bond indices, ^b and CDS spreads were mid-price quotes on 5-year contracts
Main findings	Very mixed results and the authors state it is very difficult to conclude that one market particularly dominated in terms of price discovery

^a The authors use both VECM and Granger causality measures. It is recognised that, as these are emerging market countries, it is difficult to know how generalisable the findings are

^b Note that using indices lacks the transparency to enable a price comparison between the CDSs and the actual underlying bonds

Levy (2009)

Period	Approximately 4 years (between 2000–2008)
Purpose of study	To explain pricing deviations between sovereign CDS premiums and bond spreads, the author focuses on two frictions: liquidity and counterparty risk
Data set	The author uses daily data on 5-year sovereign CDS premiums (daily quotes) and 5-year sovereign bond yields (daily quotes) for 16 emerging market countries
Main findings	The findings strongly support the relevance of these two frictions to the pricing of CDSs. The relative illiquidity of CDSs has a positive effect on CDS prices, and counterparty risk has a negative effect on CDS prices. The findings also support the suggestion that changes in the relative liquidity of the two markets could explain why there was no consistent pattern of one market leading the other: price discovery took place on the market where there was higher liquidity on a given day

¹⁹⁵ Note that the literature largely adopts a common approach to testing whether the two markets are integrated, i.e., it considers whether they are characterised by a long-term stationary relationship and then looks at short-term deviations from this to work out which market adapts to the other. The literature uses either a standard information measure to assess contribution to price discovery (either a 'Hasbrouck' or 'Gonzalo and Granger' information measure) that is based on a VECM model, or a 'Granger causality' model (a statistical concept of causality based on prediction).

 Ammer and Cai (2011)

Period	February 2001–March 2005
Purpose of study	The authors examine whether the bond or sovereign CDS markets lead the other
Data set	They use daily data on 5-year dollar-denominated sovereign CDS premiums and daily estimates of the yield on a 5-year par coupon dollar sovereign bond. They examine 9 emerging economies
Main findings	Results suggest sovereign CDS market seems to lead bond market in price discovery only in some instances and lag bond prices in others. ^a The authors also conclude that the relative liquidity of the two markets is a key determinant of where price discovery occurred ^b

^a The authors use the VECM analysis. Again, given these are emerging market countries, it is difficult to know how generalisable these findings are

^b Broadly, they suggested that since much of the relevant information with respect to sovereign credit risk tends to be in the public domain, new information might be reflected in observed prices more quickly in the more liquid market (cf. corporate market: if this market is driven more by informed trading, then price discovery may occur in the least transparent market that might tend to be the less liquid market). This contrasts with Arce et al.'s findings that are discussed further below, which found that the degree of liquidity does not affect price discovery (Arce et al. 2013)

European Sovereign Debt Crisis

 Commission Task Force Report (2010)

Period	2008–1st quarter of 2010
Purpose of study	The authors examine sovereign CDS activity during the European sovereign debt crisis to establish whether the bond or CDS market preceded or lagged the other
Data set	Empirical analysis of 18 EU countries: (1) They authors use correlation analysis to show whether price changes on one of the two markets preceded the others between 2009–2010 (2) They then take this further using Granger causality tests. They examine the period between 2008–1st quarter of 2010 ^a
Main findings	No evidence of obvious mispricing in either the CDS or the bond market, and CDS spreads are cheap relative to bond spreads Correlation analysis shows that spreads in the two markets are mainly contemporaneous Granger causality tests find price discovery is equally likely to occur in either market (for Greece and Italy, the bond market seemed to be the more important market; for Spain and Ireland, the CDS market seemed to be more important; for Portugal, it went both ways)

^a The report noted the VECM analysis but also observed its drawbacks (i.e., requiring CDS-bond basis to be sufficiently stable and this would limit the analysis to those countries with such a stable basis)

 Fontana and Scheicher (ECB Working Paper 2010)

Period	January 2006–July 2010
Purpose of study	As part of a broader study the authors analyse which market leads in the pricing process
Data set	Although weekly data is used for other aspects of their research, they use daily data on CDS and bond spreads to obtain a better overview of the pricing dynamics. They examine 10-year CDS and bond spreads for 10 euro area countries ^a
Main findings	In line with the Task Force Report, the authors find that in half the sample countries price discovery takes place in the CDS market and in the other half it is observed in the bond market. (They found the bond market has a predominant role in Germany, France, the Netherlands, Austria and Belgium; and the CDS market has a major role for the PIIGS countries)

^a The authors use the VECM analysis and 10-year spreads as this is a common horizon for government bonds

 Delis and Mylondis (2011)

Period	January 2005–May 2010
Purpose of study	The authors examine the interrelation between government bond spreads and CDSs
Data set	Daily data on 10-year government bond yields and 10-year euro-denominated CDS mid bid-ask prices for Greece, Italy, Portugal and Spain ^a
Main findings	The authors suggest that in times of high stress, investors have a higher preference for less risky and more liquid securities and generally this benefits government bonds as they are typically regarded as less risky than other asset classes. During the debt crisis, however, South European bonds became more risky and their spreads to German government bonds soared. The authors conclude that in such times the 'flight to safety' to the German government bond market becomes more pronounced (fewer would be trading South European bonds and CDSs), disrupting the transmission mechanism from CDS to bond spreads. Notably they conclude that the findings mitigate the common conception of speculative attacks on countries' default

^a The authors use 'rolling' Granger causality tests and include an error correction term to account for the existence of cointegration between CDS and bond spreads

 Palladini and Portes (2011)

Period	January 2004–March 2011
Purpose of study	The authors examine the price discovery relationship between CDS spreads and sovereign bond yields
Data set	They examine 6 European countries using daily 5-year sovereign bond yields and CDS spreads ^a
Main findings	Findings suggest that the CDS market plays a leadership role in terms of price discovery. Results are more in line with those relating to corporate credit risk

^a The authors use the VECM analysis and Granger causality tests

 O’Kane (2012)

Period	January 2008–January 2011
Purpose of study	The author examines the relationship between sovereign CDSs and bonds
Data set	He considers the PIIGS countries and France and examines the daily close prices on 5-year CDSs and bonds ^a
Main findings	The author finds price discovery is evenly split between the CDS and bond markets. He finds the dominant direction was CDSs to bonds for Greece; bonds to CDSs for Italy and France; and Portugal and Ireland exhibit causality in both directions

^a O’Kane uses the Granger causality measure as he found that cointegration was ruled out for all countries aside from France and Spain

 Coudert and Gex (2013)

Period	January 2007–March 2010
Purpose of study	The authors examine the interaction between the CDS and bond markets
Data set	They use daily data: generic 5-year CDS premia and matching bond spreads for 18 countries (11 European and 7 emerging countries) ^a
Main findings	They find that bond markets tend to lead sovereign CDS markets in line with huge size of government debt markets compared with CDS markets. Results are more mitigated for high-yield countries however

^a The authors use the VECM measure; however, they investigate short-term interactions using Granger causality but note that cointegration can lead to spurious results when Granger causality is used

 Arce, Mayordomo and Peña (2013)

Period	January 2004–February 2012
Purpose of study	The authors examine which market leads the credit risk price discovery process
Data set	Daily 5-year sovereign bond yields and CDS spreads for 11 European Monetary Union (EMU) countries ^a
Main findings	<p>Analysis reveals that price discovery is ‘state dependent’ (broadly, this means that different market conditions and factors affect it). For instance, levels of counterparty risk affect the ability of the CDS market to lead the price discovery process, whereas funding costs (that affect bond buyers more than CDS buyers) worsens the efficiency of the bond market^b</p> <p>Findings suggest that the CDS market leads price discovery in most euro areas in normal times but during times of acute stress in the eurozone the bond market leads the price discovery process^c</p>

^a The authors extend the VECM analysis over time using ‘rolling windows’ (of 1000 days)

^b They also suggested that other factors impaired the ability of the CDS market to lead the price discovery process. Factors included the common volatility in the EMU equity markets (the authors suggested that information in bond spreads may be more reliable at such times) and banks’ agreements to accept losses on their holdings of Greek bonds without activating CDS contracts (they suggested this meant there was a lack of confidence in the CDS market after such agreements). Factors affecting the ability of the bond market to lead the price discovery process included investors’ flight to the safest financial assets (the authors suggested this could diminish the demand of most EMU countries’ debt) and ECB intervention in the bond market (they suggested that if the ECB’s demand for debt is relatively insensitive to price, the information embedded in prices formed could reveal less about the fundamental value of the bonds)

^c Notably the authors find that the degree of liquidity in the CDS market relative to the bond market does not affect the price discovery process (in contrast to, e.g., Ammer and Cai (2011)). They attribute this finding to the special features of the period (i.e., a period of financial stress and limited access to funding). The authors suggest that at such times a major determinant of the degree of investors’ participation in the bond market will be the availability and cost of funding rather than the size of the bid-ask spread. The relative importance of the bid-ask spread could also be of secondary importance when big players such as the ECB are buying bonds without regard to it

BIS (2013)

Period	October 2008–May 2011
Purpose of study	BIS examines which market is most important in terms of price discovery of sovereign credit risk
Data set	Intraday quotes for PIIGs, France and Germany. As the number of transactions of sovereign bonds is largely insufficient to conduct meaningful intraday analysis, BIS uses the trading book or ‘best proposal’ quotes from the respective domestic markets. It also uses 5 and 10-year USD-denominated sovereign CDS quotes ^a
Main findings	BIS finds that CDS prices tend to move first in response to news and that bond prices tend to adjust towards pricing in the CDS market ^b

^a BIS uses a VECM approach

^b BIS observed that its findings could not directly be used to address the extent to which higher CDS spreads were likely to result in higher bond market credit spreads and lower bond prices than would be warranted by fundamentals

IMF (2013)

Period	March 2009–September 2012
Purpose of study	The IMF examines, within a broader study, which market leads the price discovery process ^a
Data set	It examines 33 countries (advanced and emerging market economies). Statistics were estimated at country level ^b
Main findings	Informational value of CDSs has become more important but varies widely over countries and time. The IMF finds that sovereign CDSs incorporate information faster as CDS liquidity increases and that sovereign CDSs tend to reveal information more quickly in advanced economies during times of stress

^a The IMF also examines sovereign CDS spreads and suggests they reflect the same economic fundamentals and other factors (including market microstructure factors (i.e. bid-ask spreads) as the underlying bonds). The IMF observed that sovereign CDSs provided a good hedge to offset sovereign credit risk, thereby enhancing financial stability

^b The authors use the Hasbrouck statistic using the VECM method

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