



Tight bank lending, lush bond market

New trends in European corporate bond issuance

April 15, 2014

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Bank lending in the euro area contracted sharply following the Lehman shock and during the euro debt crisis. Sluggish loan origination is both a symptom and catalyst for economic weakness. Typically, a loan squeeze is a consequence, not cause, of a downturn. During the euro debt crisis, however, banks' balance sheet constraints and rising funding costs featured more prominently.

Boom in corporate bond issuance is driven by substitution and favourable market conditions. We investigate the substitution between weak lending and lush bond markets. Our empirical analysis of 66,000 individual deals shows that rising bank CDS spreads are consistently associated with positive growth in securities underwriting and negative growth in loan syndication. This suggests that banks and clients switch funding instruments in times of financial stress.

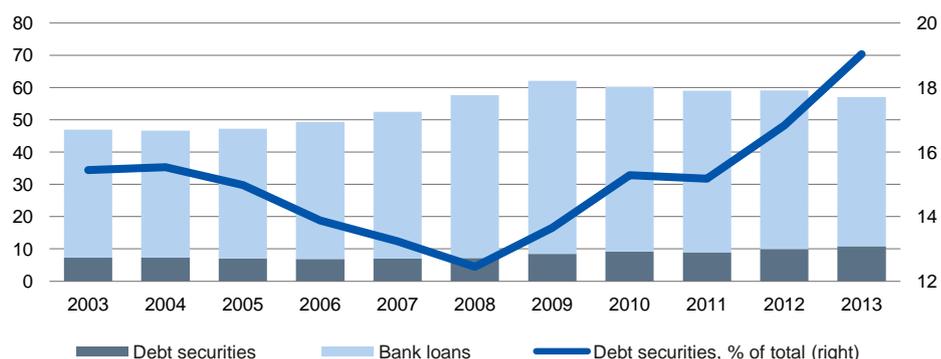
The corporate bond market cushioned about a third of the impact from the credit squeeze – at first glance. A well-developed bond market is thus an important element to increase financial resilience as it offers an alternative source of funding for the real economy and an alternative source of revenue to banks. But there are limits. We also note a worrying trend towards financial fragmentation during times of stress – the impact from rising CDS spreads on underwriting volumes is twice as large when the issuer resides in the home market of the bank – which limits diversification potential.

Firms which are being denied loans are not necessarily the same companies that tap the bond market successfully. In fact, we count less than one thousand non-financial corporations in our sample that have issued bonds. This is a fairly exclusive circle. Not every firm is fit for the capital market.

Market environment is favourable for issuers. We expect rising corporate bond yields going forward as economic recovery gains traction. This means that current conditions are attractive for potential issuers.

Funding mix shifts towards capital market instruments

Outstanding amounts with non-financial corporations in the euro area, % GDP (left)



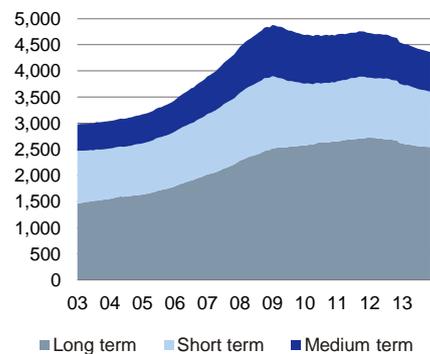
Sources: ECB, Deutsche Bank Research



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1 Contraction in bank lending

Outstanding bank loans to non-financial corporations in EMU, EUR bn

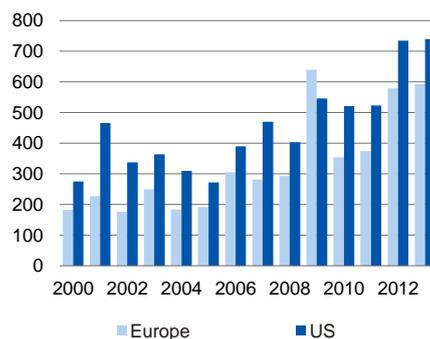


Working day and seasonally adjusted

Source: ECB

2 Boom in bond issuance

Non-financial corporate bond issuance, USD bn



Sources: Dealogic, Deutsche Bank Research

Bond market compensates a third of the credit squeeze – at first glance

Ever since the financial crisis erupted in 2007/08, bank lending has been through tough times. In the euro area, bank lending contracted by EUR 200 bn following the collapse of Lehman Brothers, an investment bank, and then by another EUR 400 bn since the start of the euro debt crisis (see chart 1). Weak loan origination is both a symptom of and a catalyst for sustained economic stagnation and low investments. Indeed, it was fear of a credit crunch – not sympathy – that motivated governments to bail out troubled banks to begin with. Judged by such figures, these efforts may not have been entirely successful. Indeed, much work by academics, regulators, supervisors and financial institutions themselves is geared towards making the financial system more resilient to economic shocks.

Surprisingly, the corporate bond market has turned out to be a potential source of resilience. This is a surprise because the bond market was the epicentre of the financial crisis. Nevertheless, companies facing tight lending conditions during the last few years were often able to tap the capital market directly and raise funds via bond issuances. By the same token, banks could generate fee income from bond underwriting without stretching balance sheets or taking on more risks – this may have helped to support income and thus capital ratios. Investors, in turn, got access to higher yielding assets at times when benchmark yields were super low.

Indeed, the crisis year 2009 – when economic growth was at a low point and loan growth collapsed – saw a record in corporate bond issuance. Particularly in Europe, bond issuances shot up, surpassing US issuances for the first time. A similar development happened over the last two years. As bank lending contracted sharply during the euro debt crisis, corporate bond issuance jumped up again. According to Dealogic, a data provider, non-financial corporations issued bonds worth USD 593 bn in Europe and USD 739 bn in the US in 2013. These are all-time records in both regions (see chart 2).¹

Such developments deserve closer examination. This study builds on our work from last year (Kaya and Meyer 2013a, 2013b, 2013c; Kaya and Wang 2013). In particular, we take a closer look at four issues. Firstly, we examine the contraction in bank lending during the last two crisis periods and discuss the driving factors. Specifically, we investigate what may have been the main sources of bank deleveraging. It is important to know whether the loan squeeze was cause or consequence of the economic downturn in order to get the crisis response right.

Secondly, we investigate the substitution effect between bank lending and bond issuance which is driven to no small degree by constraints of individual lenders. Indeed, we compare loan syndication to bond underwriting behaviour at sixteen large commercial and investment banks and a sample of more than 66,000 individual transactions. We find that banks under stress tend to curtail loan syndication and increase bond underwriting volumes. This is evidence of a substitution effect between lending and bond issuance. At first glance, the bond market appears to cushion about a third of the blow coming from the loan contraction.

Thirdly, we take a closer look at new trends in European corporate bond issuances. While we find that scale and scope of issuance activity have increased since the Lehman shock, bonds remain a fairly exclusive funding instrument. The substitution effect favours large firms fit for the capital market.

Finally, we review how the scenarios we developed last year have held up. While the market has moved on in the meantime, we see similar developments

¹ In Europe, bond issuance was bigger in 2009 in USD terms but smaller when measured in EUR, which seems more appropriate.

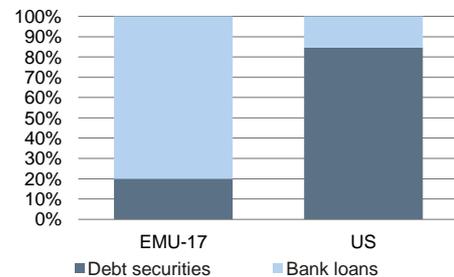


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European firms more vulnerable to a credit squeeze

3

Non-financial corporations, selected outstanding liabilities, 2013 Q4 or latest



Bank loans represent loans from domestic depository institutions. Loans from other financial institutions such as insurance corporations, pension funds, financial auxiliaries as well as loans from government, households, other non-financial firms and from foreign banks are excluded.

Sources: ECB, Fed, Deutsche Bank Research

Collapse in lending growth – supply and demand

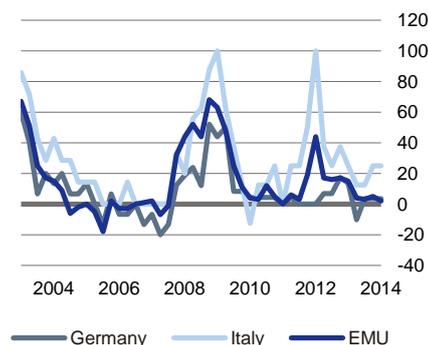
Traditionally, bank loans constitute the main source of debt financing for European firms. US firms by contrast rely much more heavily on debt securities (see chart 3). Clearly, European firms are more vulnerable when bank lending tightens.

As shown above, loan growth collapsed in the aftermath of the Lehman shock and then again during the euro debt crisis. Of course, such a process is driven by demand and supply factors at the same time. As in every economic downturn, households and firms cut spending and investments, reducing demand for loans. Deleveraging is thus a symptom of a downturn as much as it is a cause. However, banks have been at the heart of the last two crises. Hence, constraints in the supply of loans have been at the very least an amplifying factor.

Tight lending

4

Bank lending survey: Net tightening
Large enterprises, backward looking, % of banks



Sources: ECB, Deutsche Bank Research

A simple way to disentangle supply from demand factors is to ask banks directly whether they have tightened credit standards. This is to some extent independent of loan demand. The quarterly Bank Lending Survey (BLS) of the ECB collects such data. The figure of interest is the net share of banks that tighten credit standards on loans – a higher number signals more restrictive lending. Chart 4 shows the net tightening share of banks in the euro area, Germany and Italy. As to be expected, there is a sharp increase following the Lehman shock across all regions. During the euro debt crisis, banks in Germany showed only a modest response whereas banks in Italy tightened as aggressively as during the financial crisis. This is a clear illustration of the toxic sovereign-bank nexus that is at the heart of the euro debt crisis and that befell the banking system particularly in the periphery.

Why do banks tighten credit?

From a crisis management point of view, the reasons why banks have tightened lending is quite relevant because it may shed light on the question of whether a lending squeeze is cause or consequence of the economic downturn. Answering this question would help get the priorities of the crisis response right.

Factors that affect bank loan availability

5

Perception of risk

Expectations regarding general economic activity

Industry or firm specific outlook

Risk on collateral demanded

Cost of funds and balance sheet constraints of banks

Costs related to banks capital position

Banks liquidity position

Ability to access market financing

Pressure from competition

Competition from other banks

Competition from non-banks

Competition from market financing

To find out, we again turn to the BLS. Banks not only report whether they tightened credit standards but also why they did so. The BLS lists three main drivers (*“risk perception”*, *“cost of funds and balance sheet constraints”* and *“pressure from competition”*) as potential reasons that determine lending standards. Each driver is further split into several sub-categories that provide a very granular view (see table 5). For instance, *“banks’ balance sheet constraints”* is composed of costs related to banks’ capital positions, banks’ ability to access market financing and banks’ liquidity positions.

Even though sub-categories present a very detailed picture, they are highly correlated and analysing them one by one may lead to redundancy and misleading results. To overcome this problem, we use a standard econometric technique called factor analysis that allows deriving uncorrelated factors (see box 6 for a short explanation of factor analysis). We construct a composite indicator for each factor, i.e. for 1) risk perception, 2) balance sheet constraints and 3) competition, which nests the respective sub-categories of the BLS.

Chart 7 presents the trajectory of these indicators and displays the tightening of bank loan supply over time. The indicators measuring risk perception and bank

Source: ECB



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Factor analysis

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Factor analysis is an econometric technique that helps to remove redundancy or duplicated information from a set of correlated variables. In doing so, the observed correlations of the set of variables are used to find common obscured patterns within the shared variances. Put differently, it enables to construct new composite variables or indices, namely *factors*, by utilising the eigenvalue and eigenvector covariance transformations. Each variable loads on to each factor by a certain factor loading where factor loadings represent the magnitude of the correlation between variables and factors. As a result, a variable with factor loading close to absolute unity has a large impact on its corresponding factor.

balance sheet constraints co-move closely with the general degree of credit tightening, while the competition indicator moves along within certain bounds, but not as markedly as the other two.

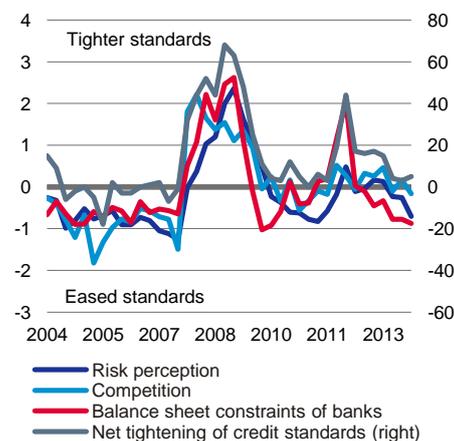
The analysis yields some interesting insights. The tightening period in the aftermath of the Lehman shock correlates highly with increases in risk perception and balance sheet constraints. By contrast, the competition factor shoots up early on but pulls back as the crisis unfolds. This suggests that competitive pressure eased in relative terms as some players exited the market and investors started to differentiate between weak and strong banks.

The second tightening peak around the euro debt crisis correlates most closely with balance sheet constraints whereas risk perception and competition move rather little. It is probably no coincidence that this period overlaps with the implementation of capital requirements laid out by Basel 2.5 for European banks (see Schildbach and Wenzel, 2013 for a detailed discussion). Regulatory pressure could thus have been an amplifying force (see our discussion below).

Why do banks tighten lending?

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EMU: Composite scores (left), net tightening of credit standards, % (right)



Sources: Deutsche Bank Research, ECB

Risk perception is the dominant driver

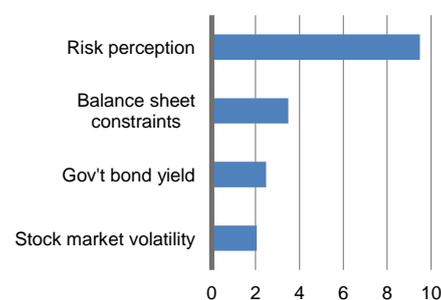
To answer our guiding question from above we need to find out which of the composite factors has had the biggest overall impact on tightening credit standards. To this end we perform a panel regression analysis using data from five Western European countries: Germany, France, Netherlands, Italy and Spain. The dependent variable is the net share of banks reporting tighter credit standards. Explanatory variables include the composite scores from the factor analysis as well as additional macroeconomic control variables such as long-term government bond yields and stock market volatility. To rule out contamination of the country-specific factors we control for country fixed effects in our specification.

Key results are shown in chart 8. All coefficients presented here are statistically significant at the 1% level. As it turns out, “perception of risk” is the dominant factor: a one standard deviation increase in the driver “risk perception” is associated with around 9 pp of tightening in credit standards. “Balance sheet constraints” follow with quite some margin. “Competition” is not a statistically significant driver.

Risk is the dominant lending constraint

8

Increase in net tightening of credit standards in pp given increase in expl. var. by one standard deviation



R²=80%. Countries in the sample are France, Germany, Netherlands, Italy, Spain

Sources: Deutsche Bank Research, ECB

Government bond yields and stock market volatility also exert tightening pressure on credit standards – but for very different reasons. Volatility is a typical measure of risk aversion. During risk-off periods (i.e. high volatility) banks tend to lend only to their best clients. By contrast, government bond yields are typically a counter-cyclical indicator, i.e. they go up in good times and down when the outlook darkens. They also serve as lower bound for interest rates that banks can charge to clients. An increase in yields is thus passed on by banks to clients, lowers firm profitability and increases the probability of default. This in turn motivates banks to be more selective. Note that the positive impulse from rising yields – i.e. a better economic outlook – is already captured by the risk perception driver.

Overall, the evidence presented here suggests that the contraction in bank lending is for the most part a consequence of an adverse economic outlook and fears that a greater share of clients will be unable to service loans in the future. As a response, banks limit loan supply to the best clients by tightening credit requirements. The collapse in lending growth is thus a symptom of a crisis rather than its cause.

The exception to this rule is the euro debt crisis. As argued above, balance sheet constraints play a much bigger role here. Therefore we take a closer look at this driver below.



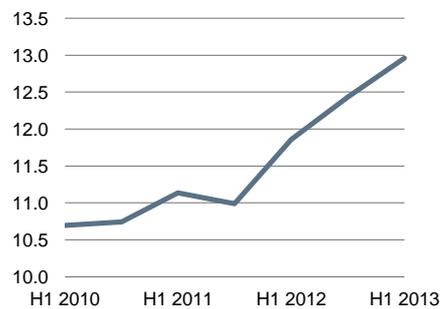
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Some progress

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Regulatory pressure and toxic sovereign-bank nexus

Tier-1 ratio of banks in the euro area, %



Source: ECB

A key regulatory response after the Lehman shock was to increase resilience in the financial system, for instance by demanding bigger capital buffers of banks. Moreover, public opinion now demands a tougher stance against bank bailouts. The effect of this can be seen for instance in the mandated bail-in of depositors and bondholders of two large Cypriot banks last year. While this has limited immediate costs to taxpayers it may have also increased funding costs for banks should times get tough because investors and large depositors may demand a premium to compensate for bail-in risks.

Inadvertently, these moves might have amplified lending constraints during the euro debt crisis because banks now have to cope with an adverse economy, higher capital requirements and rising funding costs all at the same time.

Banks in the euro area have made some progress in raising capital ratios over the last few years (see chart 9). In principle this could have been achieved by boosting equity (via retained earnings or equity issuances) or shrinking balance sheets. But European bank profits have been meagre since the Lehman crisis (see Schildbach and Wenzel, 2013) and equity issuances are unattractive because of shareholder dilution. This means that cutting assets is often the preferred choice for boosting capital ratios. Tight lending is thus a consequence.

Of course, it would be wrong to blame the decline in loan growth during the euro debt crisis entirely on regulatory zeal. Balance sheet constraints feature prominently during this episode also because banks in the periphery were on a self-reinforcing downward spiral (the toxic sovereign-bank nexus) and other countries were only belatedly willing to throw a lifeline.

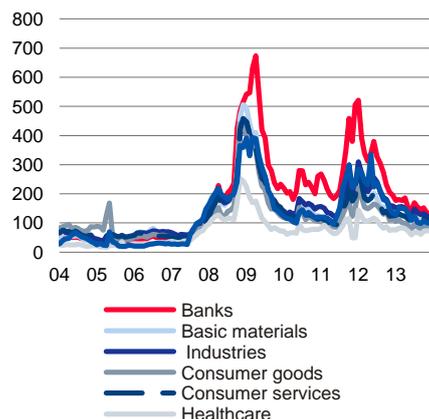
Funding costs play a key role in this respect. Since the Lehman shock, European banks in the aggregate have paid higher funding costs than many other industries whereas they paid less before the crisis (see chart 10). Particularly at crisis peaks, banks' funding costs overshoot those of other sectors by quite some margin.

Having higher funding costs than potential clients obviously puts banks in a tight spot. They cannot lend below cost, lest they lose money, nor can they charge more than the going rate. This does not mean the end of all loan business, mind. Only very few firms can raise money directly from the capital markets (see below) – the vast majority of firms relies on bank lending. Still, it would be strange if not more firms were to switch from bank loans to debt capital market instruments given that they might need to pay less than their potential lender.

Banks face higher financing costs than their clients

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iBoxx generic spreads, bp

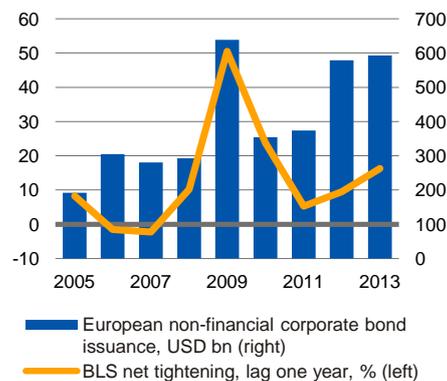


Sources: Markit, Deutsche Bank Research

Tight banks, lush capital market

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From tight banks to lush capital markets



Sources: Deutsche Bank Research, Dealogic, ECB

At first glance, a substitution effect from lending to bond issuance seems obvious. During the financial crisis and the euro debt crisis, bank lending growth collapsed and banks tightened credit standards. At the same time, bond issuance of non-financial corporations boomed (see chart 11). Evidently, there is some substitution between these funding instruments.

However, one needs to bear in mind that many other developments happened simultaneously which may overlap with any potential substitution effect. Monetary policy, for instance, switched from a tightening cycle prior to the financial crisis to a historically unprecedented expansionary stance post-Lehman. Also, the collapse of structured finance in 2007 and beyond has cut off an important route for managing a loan portfolio which may constrain banks' ability to lend. Finally, yields on benchmark government bonds contracted



Tight bank lending, lush bond market

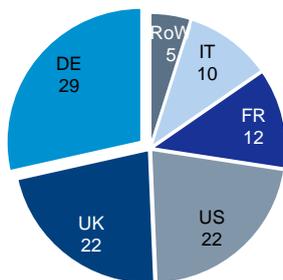
sharply as investors expected weak economic performance and low inflation for many years to come.

To gain a better understanding of the underlying dynamics we take a closer look at about 26,000 individual debt security issuances by non-financial corporations in Western Europe and the US between 1999 and 2013. For comparison we also look at close to 40,000 syndicated loan deals from the same sample universe. Our main interest is to see if and how stress in the banking system translates into lending and underwriting decisions.

A multinational business

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Issuances by German non-financial corporations 2013, by domicile of underwriting bank, weighted %



Sample: 30 large investment and commercial banks
All underwriters are allocated the same share of any bond issuance they take part in.

Sources: Bloomberg, Deutsche Bank Research

To this end, we must disentangle supply from demand factors and also take into account general market sentiment. Moreover, looking purely at country aggregates can be misleading. Firstly, a lot of bond underwriting and loan syndication is done cross-border. For instance, debt security issuances by German non-financial firms in our sample amounted to around USD 61 bn last year. However, of these only around 29% (weighted amount) were underwritten by banks domiciled in Germany. A large share was also underwritten by banks in the UK, the US and France. Even Italian banks had a non-trivial share (see chart 12). What happens in other countries cannot be ignored (Note: when there is more than one underwriter we allocate each underwriter the same share of the issuance volume).

Secondly, even within any given country banks may be in quite different shape. If one looks at spreads of credit default swaps (CDS), for instance, the difference between the best-performing and worst-performing bank can be substantial. In fact, the difference between weak and strong banks in a single country is often close to or even bigger than the difference between averages of weak and strong countries.

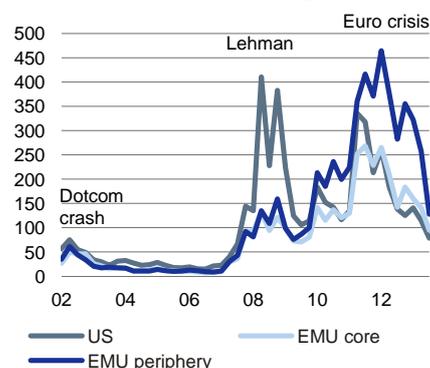
Three waves of banking stress

For these reasons, we examine bond underwriting and loan syndication per individual bank, not country. We use CDS spreads as a proxy for how much market pressure each bank in our sample is exposed to. CDS spreads have a number of advantages over other alternative indicators. They have a direct impact on funding costs of a bank. Since banks cannot lend permanently below their own funding costs high CDS spreads are important constraints on lending capacity. Also, high CDS spreads can be a market signal to boost capital ratios. Since raising fresh equity is often unattractive because of shareholder dilution, deleveraging via cutting the loan exposure is often the preferred choice.

Three episodes of stress

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5Y CDS spreads (EUR/USD) on large banks, bp



Sources: Deutsche Bank Research, Bloomberg

Looking back 10+ years, there are three clearly identifiable episodes of stress for the banking system as a whole (see chart 13). It all starts with the burst of the new economy bubble at the turn of the millennium and the shock following the attacks of 9/11. In hindsight, CDS spreads moved very little during this episode compared to what was to follow. The financial crisis and the collapse of Lehman Brothers triggered a much more aggressive market reaction. Clearly, the focus was on US banks whose CDS spreads exceeded those of European peers by a large margin. In fact, chart 13 even understates the market reaction because some of the worst performing banks are not in the sample anymore for they were taken over later on or went bust (we only look at banks that were in business for the entire period under examination). Next is the euro debt crisis with its toxic sovereign-bank nexus. Banks in EMU's periphery were the main target. But banks in the US and in core EMU were not spared either.

What does that mean for bond underwriting and loan syndication business? To find out, we take a closer look at the lending and underwriting behaviour of eleven large European commercial and investment banks and five US peers. For European banks, we further split the sample into general underwriting / syndication volumes and those volumes where the client is in the home market

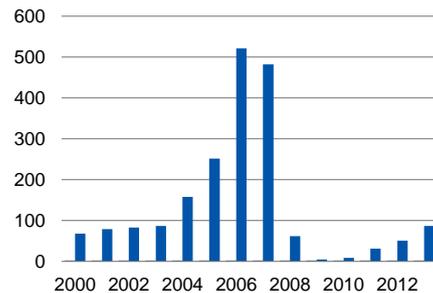


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Rise and fall of structured finance

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Global CDO issuance, USD bn



Source: SIFMA

of the bank, i.e. where the headquarters of the issuing firm (including foreign subsidiaries) is in the same country as the bank's. The reason for this split is that in times of financial stress banks might continue to support domestic clients but cut cross-border exposure. For US banks we look at general volumes but also at business done with European clients. After all, US banks play a very active role in Europe – thus it may be interesting to see how stress for US banks affects European firms.

Besides bank-specific stress, as measured by CDS spreads, we control for a number of market indicators in order to isolate the impact from other potentially overlapping influences.

The market indicators include **global issuances of collateralised debt obligations (CDOs)**. CDOs are important for two reasons. Firstly, they are an important option for banks to manage their loan portfolio. The inability to transfer loans to a CDO vehicle may thus have discouraged lending. Secondly, CDO vehicles are themselves relevant issuers of bonds. Of course, they are not non-financial corporations but their presence might still be relevant. Moreover, structured finance in general and CDOs in particular have been a close corollary of the pre-crisis boom years and the post-crisis collapse. At its peak, CDO issuance exceeded USD 500 bn per year (see chart 14).

Another important market indicator is **stock market volatility**, as measured by the implied volatility of the S&P 500 stock market index (VIX). The VIX index is a widely used proxy of general market risk aversion. It is important to control for this general risk aversion in order to isolate bank-specific stress from broader financial market stress.

Finally, we control for **10-year sovereign bond yields in the US and EMU**, the latter split into core EMU and EMU periphery. Long-term bond yields capture both the monetary policy stance as well as the economic outlook. Low yields on benchmark bonds may push investors to higher-yielding corporate bonds. Also the widening yield spread between EMU core and periphery during the debt crisis is itself a source of stress.

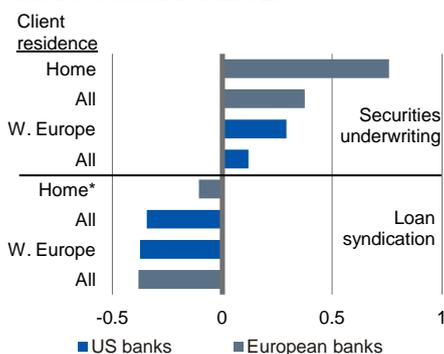
Clear evidence of a substitution effect

Chart 15 shows the key take-away from our empirical analysis. We have put the full regression table in the appendix for reference. The results allow a number of conclusions:

Substitution effect

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Impact of a rise in bank CDS spreads on securities underwriting and loan syndication based on coefficients in table 25



*Not statistically significant. All=Western Europe & US
Sources: Deutsche Bank Research, Bloomberg

- i. Bank CDS spreads have a robust statistically significant impact on underwriting and syndication business. Across different model specifications, they are the single most consistently significant explanatory factor – usually trumping general market indicators in relevance. This suggests that bank-specific stress has a dominant bearing on lending and underwriting decisions.
- ii. Rising bank CDS spreads are consistently associated with positive growth in securities underwriting and negative growth in loan syndication. This is clear evidence of a substitution effect between loan syndication and securities underwriting. More generally, this suggests that in times of stress banks extend debt capital market services but curtail lending.
- iii. For European banks, the impact from rising CDS spreads on underwriting volumes is twice as large when the issuer resides in the home market of the bank. This stronger focus on domestic clients is a worrying finding because it points to rising fragmentation in the financial landscape which could lower diversification potential and increase risk.



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- iv. By contrast, there is a fairly similar negative impact of CDS spreads on loan syndication volumes across specifications. One notable exception is the loan syndication volume by European banks for domestic clients. Here we find no statistically significant impact suggesting that banks cut overall lending but spare domestic clients. This adds to our concerns of higher financial fragmentation in times of stress.
- v. For US banks, we find a bigger impact on European clients than on US clients for underwriting activity. That finding is potentially spurious because it is likely driven by the larger size of the US corporate bond market and consequently smaller growth rates.

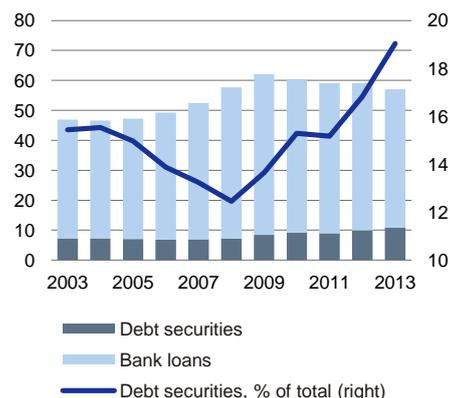
Yes, there is substitution – but is it enough?

Our analysis confirms the presence of a statistically and economically significant substitution effect between bank lending and debt capital market instruments. However, the question remains whether recourse to the bond market is sufficient to plug the holes in bank lending.

Bond market cushions loan squeeze

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Outstanding amounts with non-financial corporations in EMU, % GDP (left)



Sources: ECB, Deutsche Bank Research

There is of course no way to know the exact amount of lending that would have been done were banks not exposed to specific stress. This is an unknown counterfactual. However, a quick glance at the development of outstanding amounts might be instructive.

External debt funding, i.e. debt securities and bank loans combined, for non-financial corporations in the EU was around 47% of GDP in 2003. It increased during the pre-crisis boom and reached 62% in 2009. This boom was driven by bank lending; the share of debt securities to GDP remained fairly constant.²

Since the post-crisis contraction in credit unfolded, debt securities have assumed a bigger part of the funding pool. The overall funding level went down to 57% of GDP in 2013. However, the ratio of bank loans to GDP contracted 7.4 pp whereas the ratio of outstanding debt securities to GDP increased 2.4 pp (see chart 16). At first glance then, about a third of the blow from the credit squeeze was cushioned by the bond market.

There are of course important regional differences even if one focuses only on the four biggest EMU members (see chart 17). France had the biggest bond market already before the crisis. While loan funding has decreased since 2009, firms have compensated for that by taking recourse to debt securities: the overall funding level increased even. A similar development happened in Italy: loan financing contracted but bond funding increased by roughly the same amount, allowing the combined funding level to remain roughly unchanged. In Spain, by contrast, there was a sharp collapse in bank financing. This was also driven by write-downs and it is of course a strong illustration of the banking woes in Spain which ultimately required a rescue package.

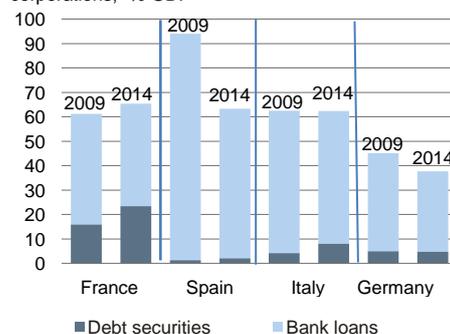
The share of bond financing in Spain almost doubled, but given that it only played a negligible role to begin with this was not enough to bring significant relief for overall funding. Moreover, the comparison also shows that the Spanish economy was much more leveraged than European peers in 2009 – and this does not even count residential housing loans. Hence, some pullback was arguably inevitable.

Finally, there is also a reduction in overall funding levels in Germany, which may seem strange given that Germany was a safe haven and economically stable during the crises. Indeed, the bond market gained in absolute terms but could not keep up with nominal GDP growth which increased 16% since 2009; thus

Substitution effect at work

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Outstanding amounts with non-financial corporations, % GDP



Sources: Deutsche Bank Research, ECB, IHS

² Also, the deep recession in 2009 reduced the denominator (GDP) and thus inflated the overall funding level in percentage terms.



Tight bank lending, lush bond market

the ratio of bond funding to GDP contracted slightly. By contrast, the amount of bank funding contracted in relative and absolute terms, illustrating that Germany could not isolate itself from broader deleveraging trends.

Bond market cushions the credit squeeze – but less than headline figures suggest

In terms of sheer volume, debt securities were able to make up part of the contraction in loan volumes (see also Schilbach 2013). Unfortunately, the relief was probably less than headline figures suggest.

Bond issuances may be inflated by precautionary or opportunistic activities. Since the market environment is exceptionally favourable for bond issuers (see below), many firms might seek to issue bonds now without having immediate financing needs. They might want to lock in currently low rates and prepare a buffer should market conditions deteriorate.

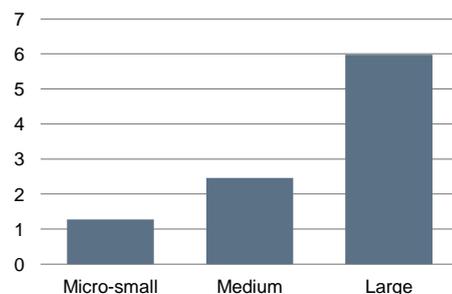
Moreover, companies that are being denied loans are not necessarily the same companies that tap the bond market successfully. As we argue below, only a very select group of firms has access to debt capital market instruments. Small firms and SMEs typically have almost no recourse to the bond market. So while there is substitution in the aggregate, not each and every firm can make use of it.

Not every firm is fit for the capital market

No market for small firms

18

Survey: Firms saying they have used debt securities for financing during the past 6 months, by size (%)



Sources: ECB, Deutsche Bank Research

Naturally, only a fairly exclusive circle of firms in Europe issues corporate bonds. They need to be large enough to warrant the fixed costs of using debt capital market (DCM) instruments, for instance commissioning an external rating. Also, the firm needs to be big enough that each individual bond issuance is sufficiently large to attract the attention of underwriters, investors and analysts. Too small issuances are often rather illiquid, leading to additional volatility that may deter investors.

DCM instruments are thus a prerogative of mostly large firms fit for the capital market. According to survey data collected by the ECB, there is a clear bias against small and medium-sized firms. While 6% of large firms say they use debt securities for financing, only about 1.3% of small and micro firms make use of them (see chart 18).³

This may even understate the actual bias. Indeed, in our sample of individual securities issuances in five Western European countries we find that the median size of a bond-issuing firm was between ten thousand employees in Italy and more than a hundred thousand employees in Germany (see table 19). Clearly, this is not a market for small firms.

An exclusive circle of firms

19

Median values of bond-issuing firms, 2013

	France	Germany	Italy	Netherlands	Spain
Number of employees ('000)	66	106	11	18	27
Turnover, EUR m	21,298	53,453	4,476	8,443	16,568
Assets, EUR m	30,575	64,382	11,945	12,203	36,540

Median by number of employees of firms where data is available. In case of subsidiaries we use data of the parent company

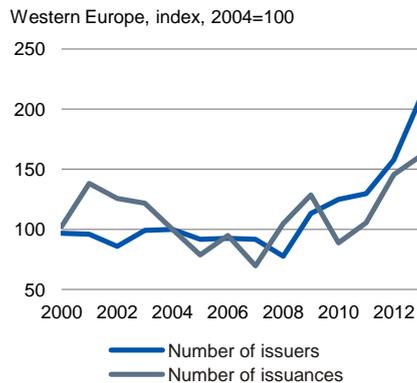
Sources: Bloomberg, Deutsche Bank Research

³ Sometimes there is a holding company that issues debt securities which is rather small in itself but represents a much bigger firm.



Tight bank lending, lush bond market

More firms issue bonds 20



Western Europe = Germany, France, Italy, Spain, Netherlands
Sources: Bloomberg, Deutsche Bank Research

Yet, there is some change. Over the last few years did not only the number of security issuances increase but also, consistently, the number of individual firms issuing corporate bonds. In other words, usage of DCM instruments gained not only in scale (i.e. higher issuance volumes) but also in scope (i.e. a bigger group of issuing firms).

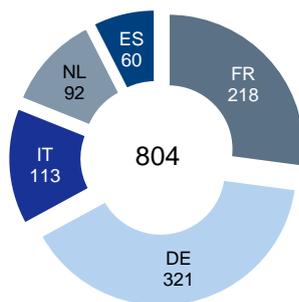
The number of yearly issuers doubled from pre-crisis levels

In fact, the annual number of firms that tap into the bond market has more than doubled compared to pre-crisis levels (see chart 20). While the fact remains that only a few hundred firms turn regularly to DCM instruments in the euro area, this number has grown considerably since the outbreak of the financial crisis.

In our sample, we count 804 individual non-financial firms in Germany, France, Italy, Spain and the Netherlands that have issued some type of debt security since 2000 – obviously a fairly limited number. Most firms reside in Germany, followed by France and Italy (see chart 21).⁴

An exclusive but growing circle 21

Number of individual non-financial corporate issuers of debt securities since 2000



Sources: Bloomberg, Deutsche Bank Research

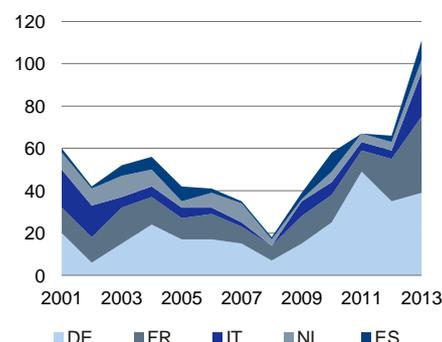
Since the financial crisis, however, the number of first-time issuers (defined as having issued the first debt security since 2000) has increased substantially (see chart 22). New German issuers entered the market particularly in the direct aftermath of the Lehman shock whereas French, Italian and Spanish firms flocked in greater numbers to the bond market during the euro debt crisis.

This dynamic illustrates that the bond market can be a more widespread funding tool given further development. In fact, recent experience suggests that even some small to mid-sized issuances have met with strong investor demand which in turn may have led to an underpricing of risk. Often retail investors were willing to buy bonds of firms with household names and a familiar and tangible product line – despite less than stellar rating and financial metrics.

Market environment remains favourable

Usage of DCM instruments spreads 22

Number of new non-financial corporate issuers* of debt securities



*Corporations that have not issued a debt security since 2000.

Sources: Bloomberg, Deutsche Bank Research

In our study last year (Kaya and Meyer, 2013a), we argued that the market environment for issuing corporate bonds was exceptionally good. Benchmark government bond yields were at a record low and credit spreads (i.e. the difference between corporate bond yields and benchmark bond yields) had tightened from crisis peaks. Indeed, we argued that in all plausible scenarios corporate bond yields had reached a low point and were set to increase going forward. The fact that markets were at a sweet spot for issuers clearly contributed to the exceptionally strong issuance activity in 2013.

Specifically, we argued in our baseline scenario (an emerging recovery) that benchmark government bond yields would increase whereas credit spreads would tighten further. The net effect would likely be positive, meaning that overall corporate bond yields would increase because the lift in benchmark yields would outweigh the spread tightening. In hindsight, this seems to have been a reasonable call as yields and spreads moved largely in the expected direction. Of course, exogenous events such as the pullback in some emerging markets in Q1 2014 and the Crimea crisis were not fully reflected. Moreover, we were too bullish on AA-rated and slightly too conservative with respect to BBB-rated bonds. All in all, however, actual direction and net effect were reasonably close to our scenario.

⁴ Subsidiaries are counted as individual firm.



Tight bank lending, lush bond market

Benchmark yields likely to increase

23

10Y sovereign bond yields, %



Source: Deutsche Bank Research

More of the same

What does that mean for spreads and yields in the near future? Clearly, fixed income markets are still far away from “normal” levels. Hence, we expect by and large to see a similar development as last year: benchmark government yields are likely to increase further as the economy improves. As a consequence, an increase of around 70 bp for German 10Y government bond yields until the end of 2014 seems plausible (see chart 23).

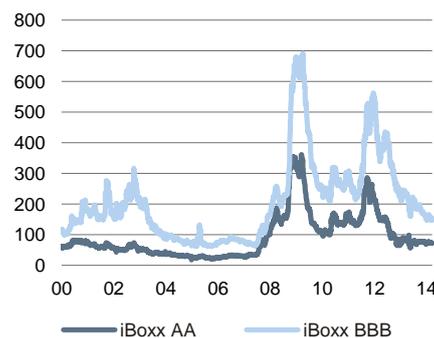
By the same token, bond spreads still have room for improvement. Spreads of AA and BBB-rated bonds are still above pre-crisis averages (see chart 24), suggesting that economic recovery should translate into further tightening (see also Reid et al, 2014).

The extent of further spread tightening is, however, limited because the difference to pre-crisis averages has narrowed already. Moreover, currently lush monetary conditions may suppress default rates particularly for lower-rated entities. As a consequence, bond spreads for lower-rated firms and high-yield instruments have already tightened quite substantially, leaving less room for further improvement – even posing some risk of a backlash.

Some room for further tightening

24

Corporate bond spreads to benchmark, bp



Source: Markit, Bloomberg, Deutsche Bank Research

Overall, we expect the European economy to gain speed in the course of this year. Benchmark government bond yields will likely increase and bond spreads will likely decrease further. As in last year’s scenario we believe that the net effect will be positive, meaning that the increase in the benchmark will more than outweigh the spread compression. Hence, the current market remains attractive for potential bond issuers, for they will likely need to offer higher yields in the future.

ECB willing to consider QE

The ECB has raised expectations quite a bit by announcing that the governing council is “unanimous in its commitment to also using unconventional instruments within its mandate to cope effectively with risks of a too prolonged period of low inflation” (Draghi, April 3). Such unconventional measures could include asset purchases (quantitative easing) of public or private debt securities. While the ECB is unlikely to jump to QE directly, this statement is an important hedge should the economy perform below expectations.

If push comes to shove, the ECB might be more comfortable purchasing private assets rather than public bonds in order to avoid potential moral hazard in the periphery. The ECB might focus on asset backed securities first but might also consider corporate loans held by banks directly. This would have a knock-on effect on non-financial corporate bonds. In sum, this could mean that the extent of spread widening in a potential downside scenario would be mitigated by monetary intervention. Such a safety measure could increase the appeal of corporate bonds right away.

Conclusions

Bank lending in Western Europe contracted sharply following the collapse of Lehman Brothers in 2008 and again during the euro debt crisis. Weak loan origination is both a symptom as well as a potential catalyst for a sustained economic downturn. It is therefore important to understand the drivers of the credit squeeze in order to get the crisis response right.

In the first part of our analysis, we looked at the reasons stated by banks for tightening credit standards – as reported in the Bank Lending Survey. A



Tight bank lending, lush bond market

<p>Economic stabilisation is top priority</p>	<p>heightened sense of risk as recession unfolds and client ratings deteriorate appears to be the main driver behind the credit slowdown. Tighter credit standards seem to be the consequence of an economic downturn. From a policy point of view this means that stabilising the economy is in general top priority.</p>
<p>Balance sheet constraints feature prominently during euro debt crisis</p>	<p>The euro debt crisis is a different beast, though. During this crisis, banks have had to cope with an adverse economy, higher capital requirements and rising funding costs all at the same time. Consequently, we find that balance sheet constraints in the banking system feature much more prominently than before. Cleaning up the banking system, where necessary, and breaking the toxic sovereign-bank nexus is thus instrumental in stabilising the economy.</p>
<p>Clear evidence of a substitution effect between lending and bond issuance</p>	<p>During recent stress episodes the corporate bond market has been a mitigating force. This is somewhat surprising given that the great financial crisis had its origin in the bond market. However, our analysis of 66,000 individual issuances of debt securities and syndicated loan deals shows convincing evidence of a substitution effect. When CDS spreads for banks widen, we measure a negative effect on loan syndication and a positive effect on bond underwriting volumes. Evidently, banks and clients substitute funding instruments when the going gets tough.</p>
<p>Bond market compensates a third of the credit squeeze</p>	<p>In the euro area, the volume of outstanding bank loans to non-financial corporations contracted by 7.4% of GDP from its peak whereas the volume of outstanding debt securities increased by 2.4% of GDP. Hence, the bond market cushioned about a third of the impact from the credit squeeze at first glance. In some countries, France most notably, the increase in funding by debt securities could even more than compensate the credit contraction.</p>
<p>Bond market is thus an important element to support financial resilience</p>	<p>A well-developed bond market is thus an important element to increase financial resilience because it offers an alternative source of funding for the real economy in times of banking stress. By the same token, it offers banks an alternative source of revenue: banks can generate fee income from bond underwriting without stretching balance sheets or taking on more risks – this may have helped to support income and thus capital ratios. Investors, in turn, get access to higher-yielding assets at times when benchmark yields are super low.</p>
<p>Focus on home market is worrying</p>	<p>There are of course a number of important limitations. We note a worrying tendency to focus more strongly on the home market during periods of stress. While European banks in our sample cut overall lending when times are tough, they seem to spare domestic clients. By the same token, the impact from rising CDS spreads on underwriting volumes is twice as large when the issuer resides in the home market of the bank. This is a worrying finding because it points to rising fragmentation in the financial landscape which could lower diversification potential and increase risk. It also runs counter to the idea of having a fully integrated financial market in Europe.</p>
<p>No market for small firms</p>	<p>Another limitation is that firms which are being denied loans are not necessarily the same companies that tap the bond market successfully. In fact, only a fairly exclusive circle of rather large firms issues corporate bonds. We count 804 non-financial corporations in five Western European countries since 2000 in our sample. Not every firm is fit for the capital market.</p>
<p>But the bond market has gained reach since Lehman</p>	<p>Since the Lehman shock, bond markets have gained depth but also reach: the number of yearly bond issuers has more than doubled. This dynamic illustrates that the bond market can be a more widespread funding tool, but some structural hurdles will remain, of course.</p>
	<p>Corporate bond volumes may also have been inflated by precautionary or opportunistic issuances. The market environment has been favourable for bond issuers, particularly during the last year, and some firms might have wished to</p>



Tight bank lending, lush bond market

<p>The prospect of paying more in the future boosts opportunistic issuances</p>	<p>lock in such conditions without having pressing capital needs. This would make the cushioning effect look better than it actually is.⁵</p> <p>Indeed, in our study last year we argued that benchmark government bond yields would likely increase whereas credit spreads would tighten further. The net effect would likely be positive, meaning that bond issuers would have to pay more to investors going forward – in hindsight a fairly reasonable call. The prospect of paying more in the future surely helped boost issuance volumes last year.</p>
<p>Market remains favourable</p>	<p>The market has moved on in the meantime. The Federal Reserve has already started to phase out asset purchases (tapering), for instance. The sell-off in many emerging markets earlier this year (partly a consequence of tapering) and the Crimea crisis have infused new volatility and risk aversion. However, we think that the main trends will be the same as last year. We expect a further rise in benchmark government yields and there is further room for spread compression. The net effect will likely be positive again – (opportunistic) issuances should remain attractive for the time being.</p>
<p>Less impulse from the substitution effect but euro area is not out of the woods yet</p>	<p>Bank CDS spreads have tightened from recent crisis peaks – most strongly in Europe’s periphery but also in the US and core Europe. This means that there will be less impulse from the substitution effect. However, CDS spreads are still way above pre-crisis levels and the euro area, while on the right path, is not out of the woods yet. The realisation of downside risks, such as a negative surprise following the asset quality review and stress tests by the ECB and EBA, the inability to address the sovereign-bank nexus, or an external economic shock (e.g. a slowdown in China or an escalation of the Crimea crisis), could create new stress for European and global banks. Once again, the bond market could then be a welcome mitigating force.</p>
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⁵ Some countries (e.g. Spain) were likely over-leveraged before the crisis. Hence some de-leveraging was arguably healthy. This would make the cushioning effect even bigger than it looks.



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Appendix

Substitution effect: Rising bank CDS spreads associated with more bond underwriting and less loan syndication

25

Panel regression

Sample: 2005 to 2013, 11 Western European banks from Germany, France, Italy, Spain and the Netherlands, 5 US banks

Dependent variables in DLOGs

	European banks				US banks			
	Securities		Syndicated loans		Securities		Syndicated loans	
	All	Home	All	Home	All	Europe	All	Europe
C	0.325 ***	0.539 ***	0.396 **	0.472 ***	0.026	-0.205	0.362	0.454 *
CDS spreads (-1), chg	0.004 *** 0.001	0.008 *** 0.002	-0.004 *** 0.001	-0.001 0.003	0.001 *** 0.000	0.003 ** 0.001	-0.003 *** 0.001	-0.004 *** 0.001
CDO volume (-1), % chg	0.046 * 0.024	0.082 0.078	-0.052 *** 0.021	-0.048 ** 0.020	-0.008 0.061	0.162 *** 0.042	-0.079 0.057	-0.107 *** 0.035
VIX, chg	0.023 * 0.012	0.008 0.010	-0.064 *** 0.013	-0.056 *** 0.014	0.002 0.015	-0.001 0.017	-0.058 *** 0.014	-0.067 *** 0.009
10Y gov't yield, EMU core, chg	0.046 0.125	0.332 0.283	0.420 *** 0.106	0.325 * 0.193				
10Y gov't yield, EMU periphery chg	-0.029 *** 0.010	-0.025 ** 0.012	0.008 0.013	0.030 0.023				
10Y gov't yield, US, chg					0.022 0.163	-0.012 0.169	0.136 0.171	0.325 ** 0.153
Trend	-0.022 ** 0.011	-0.048 * 0.026	-0.016 0.018	-0.043 * 0.025	0.009 0.032	0.023 0.019	-0.016 0.025	-0.039 0.031
AR(1)	-0.529 0.084	-0.355 0.058	-0.363 *** 0.141	-0.432 0.063	-0.231 0.150	-0.533 0.112	-0.146 0.228	-0.485 0.105
N	99	93	99	99	45	45	45	45
R ²	45%	37%	64%	40%	16%	51%	59%	75%
DW	2.31	1.91	2.11	2.53	2.33	2.48	2.06	2.14

Standard errors below coefficients, White heteroscedasticity-robust standard errors
Statistical significance: *10%, **5%, ***1%

Source: Deutsche Bank Research



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Printed by: HST Offsetdruck Schadt & Tetzlaff GbR, Dieburg

Print: ISSN 1612-314X / Internet/E-mail: ISSN 1612-3158