C NEW ECB SURVEY ON CREDIT TERMS AND CONDITIONS IN EURO-DENOMINATED SECURITIES FINANCING AND OVER-THE-COUNTER DERIVATIVES MARKETS (SESFOD)[1]

In the run-up to the global financial crisis that began in mid-2007, leverage and risk-taking in the financial system increased substantially, in particular in the shadow banking system. This increase was facilitated by an erosion of credit terms in securities financing and over-the-counter (OTC) derivatives markets, which served as important conduits for leverage in the financial system. Recognising the lack of information on such developments, a number of major central banks, including the ECB, have started to conduct regular qualitative surveys on changes in credit terms and conditions in these wholesale credit markets.

This special feature presents the key features and some of the first results of the recently launched quarterly ECB survey on credit terms and conditions in euro-denominated securities financing and OTC derivatives markets (SESFOD). It also discusses how the survey could be used for macro-prudential monitoring purposes.

INTRODUCTION

The recently launched SESFOD has been developed to monitor…

In April 2013 the ECB published the first results of the new qualitative quarterly survey on credit terms and conditions in euro-denominated securities financing and OTC derivatives markets (SESFOD).[2] The SESFOD has been developed as part of an international initiative following a recommendation by the Committee on the Global Financial System's study group that macro-prudential authorities "consider the value of regularly conducting and disseminating a predominantly qualitative survey of credit terms used in these markets, including haircuts, initial margins, eligible pools of collateral assets, maturities and other terms of financing".[3] In addition to the ECB, the Bank of Canada, the Bank of England[4] and the Federal Reserve System[5] also conduct similar surveys, but at the time of writing only the ECB and the Federal Reserve were disseminating aggregate results publicly.

MOTIVATION FOR THE SURVEY

… the role of covered wholesale market segments as conduits for leverage in the financial system

The financial crisis highlighted the importance of the shadow banking system – which refers to credit intermediation involving entities and activities (fully or partially) outside the regular banking system – as a conduit for leverage and maturity/liquidity transformation and as a source of contagion risk stemming from increased interconnections in the financial system. The SESFOD covers both securities financing (lending collateralised by securities) and OTC derivatives transactions not only because of this conduit role, but also because derivatives in many cases are close substitutes for securities financing transactions – for example, derivatives can be and have been used to replicate a repo transaction through a "synthetic" repo.[6] Furthermore, the financial crisis and the ensuing regulatory initiatives prompted a greater preference for the collateralisation of credit exposures, including a shift from unsecured to secured lending, thereby elevating the importance of collateral management and collateralised markets for funding purposes.

1 Prepared by Tomas Garbaravičius.
2 See http://www.ecb.int/press/pr/date/2013/html/pr130430_1.en.html.
3 See Committee on the Global Financial System, "The role of margin requirements and haircuts in procyclicality", *CGFS Papers*, No 36, March 2010.
4 See http://www.bankofengland.co.uk/financialstability/Pages/survey/Qualitative.aspx.
5 See http://www.federalreserve.gov/econresdata/releases/scoos.htm.
6 See Bank of England, *Quarterly Bulletin*, Vol. 50, No 4, Q4 2010.

The survey will shed more light on the various associated potential risks to financial stability…

The survey should benefit financial stability monitoring in two ways. First, it will shed more light on the various potential risks associated with securities financing and derivatives markets, including, among others, a build-up of excessive financial leverage, increased interconnectedness, vulnerability to pro-cyclicality and "repo runs".[7] In particular, information on changes in credit terms for the important types of counterparty, collateral and derivatives should support empirical research on euro-denominated markets, which at least in the case of euro repo markets so far has been less advanced than for US dollar repos.[8]

… and should serve as a systematic and valuable market intelligence and monitoring tool

Second, by drawing attention to significant changes in credit terms and conditions, the survey should also serve as a valuable monitoring and potential early warning tool to support risk identification and risk surveillance processes. The survey can be characterised as a systematic, high-quality and timely market intelligence and surveillance tool allowing for comparisons over time. During the build-up of financial vulnerabilities, survey findings should signal rising leverage, lower haircuts, increasing willingness to take counterparty credit risk and a stronger risk appetite more generally. Closer to the beginning of a financial dislocation, survey results may warn about pending problems through, for example, increased valuation disputes or a significant tightening of financing terms. Indeed, during the recent financial crisis, an increase in valuation disputes proved a good leading indicator of stress within the financial system.[9]

For monetary policy, funding conditions in interbank and repo markets are important

For monetary policy, information on changes in the cost and availability of funding in wholesale markets, and in repo markets in particular, will support the analysis of monetary policy transmission and interbank funding conditions. In this respect, the survey is a natural analogue to well-established bank lending surveys capturing supply and demand conditions for bank loans to the real economy.

The qualitative nature of the survey has a number of advantages

Despite limitations inherent to all qualitative surveys, the SESFOD is a very useful complement to still rather limited quantitative data on the covered markets.[10] It is fairly comprehensive and timely: in the future its results should be published around one month after each three-month reference period. Credit terms, such as collateral and margin requirements, are subject to changes in market practices and involve a large number of parameters, all of which, and some in particular, may not be easy to capture quantitatively. By contrast, a qualitative assessment can provide a strong directional indication without requiring the collection of quantitative details of the specific terms.[11] It would also be quite difficult and costly to monitor quantitatively changes in various non-price terms, such as credit limits or covenants and triggers. The experience during the financial crisis suggests that changes in non-price terms that affect the availability of funding, often in a binary way (for example, through cuts in credit limits or narrower lists of eligible collateral), usually have a much more adverse impact than changes in price terms, haircuts or initial margin requirements.

7 For an enumeration and description of risks associated with securities financing, see Section 1 in Financial Stability Board, "Consultative document: Strengthening oversight and regulation of shadow banking – A policy framework for addressing shadow banking risks in securities lending and repos", November 2012.

8 For a review of the academic literature on securities financing transactions, see Annex 3 in Financial Stability Board, "Securities lending and repos: Market overview and financial stability issues", April 2012.

9 See M. J. Eichner and F. M. Natalucci, "Capturing the evolution of dealer credit terms related to securities financing and OTC derivatives: Some initial results from the new Senior Credit Officer Opinion Survey on dealer financing terms", *Federal Reserve Board Finance and Economic Discussion Series*, No 2010-47, September 2010.

10 As in the case of OTC derivatives markets, a consensus among policy-makers has emerged that a centralised collection of information, e.g. through trade repositories, is the preferred way of ensuring adequate high-frequency data on securities financing markets. See V. Constâncio, "Shadow banking – The ECB perspective", speech given on 27 April 2012, Annex 2 in Financial Stability Board, "Consultative document: Strengthening oversight and regulation of shadow banking – A policy framework for addressing shadow banking risks in securities lending and repos", November 2012 and ECB, "Enhancing the monitoring of shadow banking", *Monthly Bulletin*, February 2013.

11 See M. J. Eichner and F. M. Natalucci, op. cit.

SCOPE AND COVERAGE

Focus on euro-denominated financial instruments…

The SESFOD is intended to monitor financing conditions and risk appetite in securities financing and OTC derivatives markets that are of particular relevance for the Eurosystem and, therefore, its focus is on credit terms for euro-denominated instruments. In the same vein, the Bank of Canada and the Federal Reserve surveys cover Canadian and US dollar-denominated instruments respectively. The Bank of England, however, given the role of London as a financial centre, asks respondents to cover three currencies, namely the pound sterling, the euro and the US dollar, but only for significant activities conducted from respondents' UK offices. By contrast, other central banks ask reporting institutions to report about their global credit terms so as to maintain a consolidated perspective on the applied price and non-price credit terms.

… and large banks and dealers active in targeted financial markets

SESFOD respondents are large banks active in targeted euro-denominated markets. They report changes in credit terms from the perspective of the firm as a supplier of credit to customers (rather than as receiver of credit from other firms). This pragmatic focus on the largest banks, both within and outside the euro area, ensures that the SESFOD covers as large a part of euro-denominated markets as practically feasible. To some extent, such a focused reporting approach is even necessary as survey responses are not weighted – the costs of designing a weighting scheme and of regularly collecting the required information for such a scheme may outweigh its benefits given the potential complexities involved.

The survey includes the responses of 29 large banks, 14 of which are euro area banks and the remaining 15 have their head offices outside the euro area. Institutions headquartered in the euro area report to the central bank of the country in which they have their headquarters, which in turn submits data to the ECB. Banks with head offices outside the euro area report directly to the ECB.

STRUCTURE AND QUESTIONS

The survey consists of three main parts…

The survey consists of three main parts and also envisages the possibility of adding special ad hoc questions that are of relevance at that particular point in time. The first group of questions covers credit terms for the various important types of counterparty across the entire spectrum of securities financing and OTC derivatives transactions.[12] The second group of questions focuses on financing conditions for the various collateral types, with a differentiation also made between credit terms offered to most-favoured and other clients. The third and last group of questions focuses on credit terms applicable to transactions involving various types of non-centrally cleared OTC derivatives, using underlying asset classes (underlyings) as a distinguishing criteria. The full version of SESFOD consists of 342 questions, although not all of them will be relevant for all participating banks if certain market segments are only of marginal importance for their business, and some of the questions will have to be answered only if a change in credit terms was reported.[13]

… and largely mirrors questions in the similar survey conducted by the Federal Reserve…

The SESFOD questions largely mirror questions in the Federal Reserve's Senior Credit Officer Opinion Survey (SCOOS)[14] on dealer financing terms for US dollar-denominated transactions and also include nearly all of the questions included in the "international" set of questions developed in order to allow for a possible construction and publication of global aggregates by the Bank for International Settlements. Many large global banks report to several central banks conducting

12 No differentiation is made between counterparties based on their residency.
13 The detailed list of all questions and further information is available in the survey guidelines, see http://www.ecb.int/press/pr/date/2013/html/pr130430_1.en.html
14 See http://www.federalreserve.gov/econresdata/releases/scoos.htm.

similar surveys and thus, in order to keep the reporting burden low, it is desirable that the central banks involved align their surveys as much as possible.

… although it was adapted to the euro area situation/needs

The SESFOD questions are nonetheless tailored in some aspects so as to better reflect the situation and needs in the euro area and therefore differ in part from those of the SCOOS and the international set of questions, mainly in relation to a few different types of counterparty, collateral and derivatives. By contrast, the surveys of the Bank of England and the Bank of Canada are largely confined to and thus much more closely aligned with the international set of questions. The SESFOD has also benefited from consultations with banks, which took place in the summer of 2012. Banks, for example, suggested, and the suggestion was accepted, adding sovereigns as an important counterparty type – some of the banks had non-negligible (uncollateralised) exposures to sovereigns through OTC derivatives trades and/or through securities financing transactions.

FIRST RESULTS: SELECTED HIGHLIGHTS

Two surveys have already been conducted

The December 2012 and March 2013 surveys, the first two that were conducted, collected qualitative information on changes over the three-month reference periods ending in November 2012 and February 2013 respectively – during this time frame, conditions in financial markets had been improving amid easing concerns about the euro area sovereign debt crisis. A review of the responses to the March 2013 survey suggests a number of important findings that are presented below.

In the March 2013 survey a very small overall net tightening of credit terms for wholesale counterparties was reported

In the March 2013 survey, banks indicated that offered price terms (such as financing rates/spreads) had remained basically unchanged, on balance, for the important types of counterparty covered in the survey over the three-month reference period. Nevertheless, modest net percentages of respondents[15] reported eased price terms for large banks and dealers, insurance companies and investment funds, pension plans and other institutional investment pools. In the case of non-price terms, including, for example, the maximum amount of funding, haircuts, covenants and triggers and other documentation features, the net shares of banks that reported tightening were small and also smaller than in the previous December 2012 survey. All in all, a small net tightening of non-price terms for a sub-group of covered client types outweighed the net easing of price terms for some client groups, resulting, on balance, in a marginal overall net tightening of credit terms (see Chart C.1). Furthermore, and as in the previous survey, respondents expected that price and non-price credit terms would continue tightening for each of the covered client types over the next three months.

The use of leverage by hedge funds had somewhat increased

Both the use and availability of additional financial leverage under agreements currently in place with hedge fund clients were reported to have somewhat increased by one-quarter and one-tenth of respondents respectively. By contrast, the use of financial leverage by insurance companies and investment funds had remained unchanged.

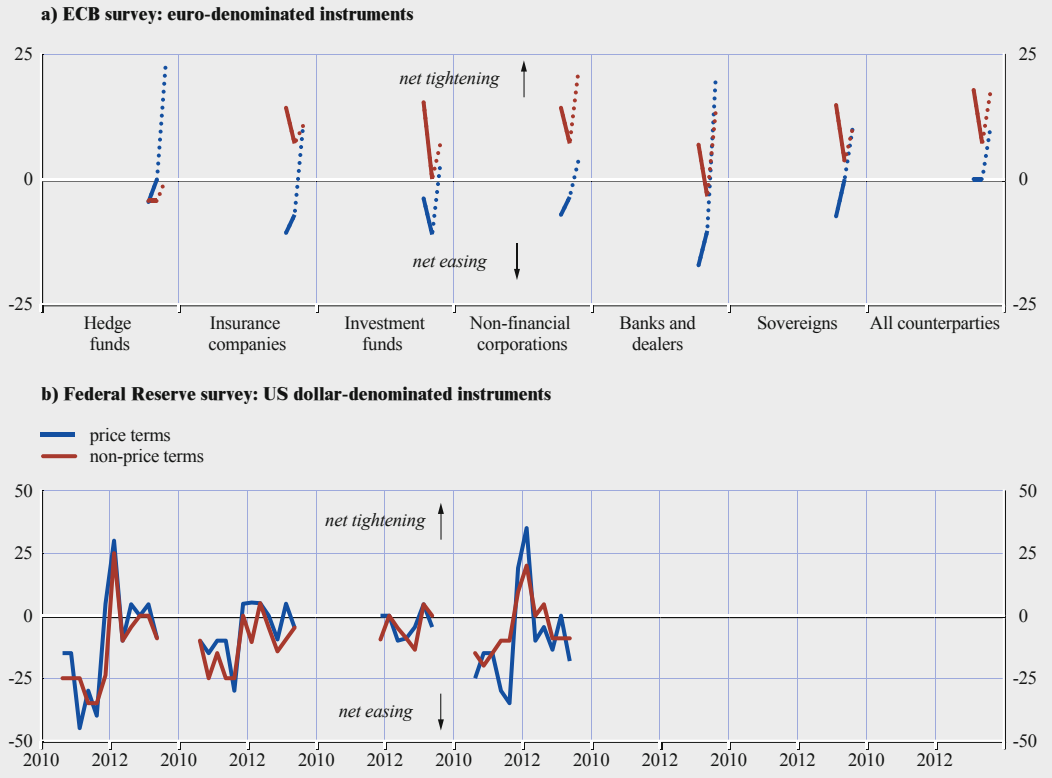
Financing rates/spreads at which securities are funded had decreased, on balance

With a few exceptions and amid some improvement in market liquidity and functioning, respondents indicated that financing rates/spreads at which securities are funded had decreased, on balance, for the various collateral types covered in the survey, but especially so for euro-denominated government bonds, high-quality financial and non-financial corporate bonds and covered bonds. For each type of collateral included in the survey, the net percentages of banks that reported changes in financing rates/spreads were largely the same for both average and most-favoured clients.

15 The net percentage is defined as the difference between the percentage of respondents reporting tightening/deterioration and those reporting easing/improvement.

Chart C.1 Actual and expected changes in credit terms for selected counterparty types

(Q2 2010 – Q2 2013; net percentage of respondents; dotted lines refer to expected changes)



Sources: ECB, Federal Reserve System and ECB calculations.
Notes: The net percentage is defined as the difference between the percentage of respondents reporting "tightened considerably" or "tightened somewhat" and those reporting "eased somewhat" or "eased considerably". In the Federal Reserve survey, up to the second quarter of 2011 the "hedge funds" group also included private equity firms and other similar private pools of capital, while the "insurance companies" group included pension funds and other institutional investors. In the ECB survey, "investment funds" also include pension plans and other institutional investment pools, whereas in the Federal Reserve survey, this group refers to "mutual funds, exchange-traded funds, pension plans and endowments".

Demand for funding of various types of collateral increased…

About one-fifth of respondents indicated that demand for the funding of euro-denominated government bonds and asset-backed securities had increased, on balance, over the three-month reference period, while less marked, but nevertheless across-the-board, increases were also reported for other collateral types. Furthermore, the net shares of banks that noted increased demand for funding were larger than in the December 2012 survey for all types of collateral covered in the survey. In addition, for many types of collateral, the net percentages of banks that reported higher demand for funding were larger for maturities greater than 30 days.

… as did the liquidity of most collateral types

Except for convertible securities and equities, liquidity and market functioning for the various types of collateral included in the survey were reported to have improved over the three-month reference period. Between one-fifth and one-third of banks indicated an improvement, on balance, for euro-denominated government bonds and high-quality corporate bonds.

Liquidity and trading of most OTC derivatives deteriorated

For most types of non-centrally cleared derivatives contract included in the survey, banks reported that their liquidity and trading had slightly deteriorated, on balance, over the three-month reference period. This deterioration, however, was less pronounced than in the December 2012 survey.

Credit terms were tighter, often considerably, than at the end of 2006

Responses to the special questions on the current stringency of credit terms relative to the end of 2006 were rather unanimous as the majority of respondents indicated that current credit terms applicable for the covered types of counterparty, collateral and OTC derivatives were tighter, often considerably, than at the end of 2006. This information provides some context for interpreting the main questions, especially at the time of the start of the survey. In the future, such special questions about the stringency of credit terms relative to those a year ago could be repeated every year – this would provide some information about the cumulative impact of reported quarterly changes.

CERTAIN ASPECTS RELATING TO MACRO-PRUDENTIAL MONITORING

The frequency of reported changes and disagreement among respondents…

In order to understand better the economic and signalling significance of survey responses for monitoring purposes, it is useful to compare the frequency of reported changes across different sets of questions. Some non-price terms do not change frequently and thus the average share of "no change" responses for such questions should be relatively high. In addition, the disagreement among respondents on trends may also vary by type of question or covered market segment. As can be seen in Chart C.2, this has indeed been the case, and thus the interpretation of quarterly results should take such longer-term patterns into account.

… should be taken into account when interpreting quarterly results

Banks did not often report changes when answering questions relating to OTC derivatives and this is not surprising given that, in addition to some questions on market functioning issues, the bulk of these questions refer to changes in non-price terms and trading agreements that do not tend to occur frequently and require time to implement. By contrast, both the frequency of reported changes and the disagreement among respondents tended to be higher for the questions in the other two main parts of the survey that focus on credit terms offered to important client groups and financing conditions for various collateral types respectively.[16] It is also noteworthy that for the last two three-month reference periods ending in November 2012 and February 2013, there was a lot more disagreement among SESFOD participants than among respondents to the SCOOS for the matched sample of identical questions in both surveys.[17]

Differences between reported changes for average and most-favoured clients…

Differences between reported changes for average and most-favoured clients may provide additional information regarding the severity of a market dislocation or, on the contrary, the willingness of market participants to take on higher risk. For instance, a joint and significant tightening of credit terms for both average and most-favoured counterparties could be interpreted as a sign of a serious market disruption, whereas a tightening for average clients only would be rather indicative of a moderate market shock that was not severe enough to prompt changes in credit terms for most-favoured clients. The same logic, but in the opposite direction, could be applied for an easing of credit terms where a joint and significant easing of credit terms for both average and most-favoured clients could be a symptom of an excessively buoyant risk appetite.

… could be used as an indicator of the severity of market stress or, vice versa, as a symptom of excessive risk appetite

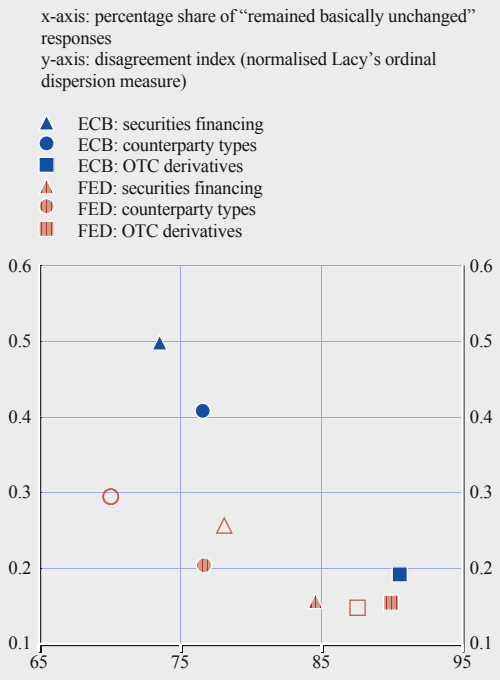
Each reference period may be different and require a separate analysis, but certain information presented in Chart C.3 provides some tentative support for the case of using differences between changes in credit terms for average and most-favoured clients as an indicator of market stress.

16 For each question and for each reference period, disagreement among respondents was measured using an ordinal dispersion measure described in M. Lacy, "An explained variation measure for ordinal response models with comparisons to other ordinal R^2 measures", *Sociological Methods and Research*, Vol. 34, 469-520, 2006. To calculate Lacy's ordinal dispersion measure, the shares of respondents reporting "tightened considerably" or "tightened somewhat" were combined into one group, as were the shares of those reporting "eased somewhat" or "eased considerably". Then the computed measure was normalised using its maximum value (4/9th) for three categories ("tightened", "unchanged" and "eased") to get a scale-free disagreement index ranging between 0 (full agreement) and 1 (full disagreement).

17 The SCOOS includes the responses of 22 banks and there is some overlap between the banks that provide responses to the SCOOS and those that provide responses to the SESFOD.

Chart C.2 Frequency of reported changes and disagreement among respondents by question type

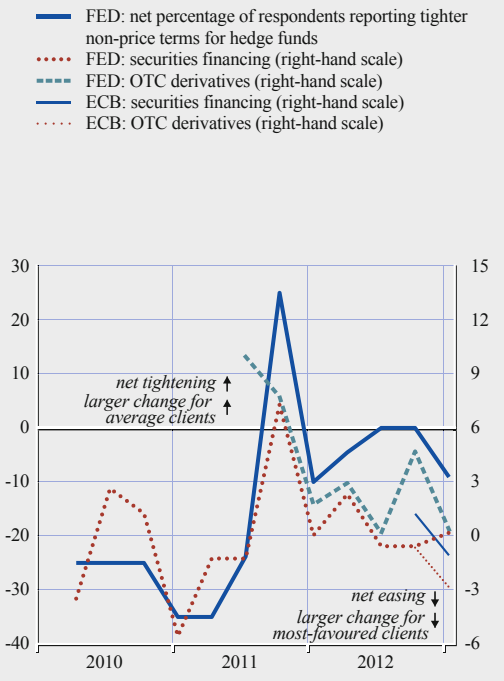
(Q2 2010 – Q1 2013; x-axis: average percentage share of "remained basically unchanged" responses; y-axis: average disagreement as measured by the normalised Lacy's ordinal dispersion of response)



Sources: ECB, Federal Reserve System and ECB calculations.
Notes: The analysis is based on a matched sample of 66 identical questions found in both the ECB and Federal Reserve surveys, which focus on financial instruments denominated in euro and US dollars respectively. 13 of these 66 questions are taken from the "securities financing" group and relate to the funding of high-yield bonds and equities, 35 questions are taken from the "counterparty types" group, and 18 questions from the "OTC derivatives" group. Filled data points refer to averages computed using data for the last two quarters, namely the fourth quarter of 2012 and the first quarter of 2013, whereas unfilled data points are averages for the last 12 quarters, i.e. since the inception of the Federal Reserve survey. See footnote 16 for a description of the disagreement index.

Chart C.3 Market conditions and differences between changes in credit terms for average and most-favoured clients

(Q2 2010 – Q1 2013; left-hand axis: net percentage of respondents; right-hand axis: the modified difference between the net percentages of respondents for average and most-favoured clients)



Sources: ECB, Federal Reserve System and ECB calculations.
Notes: The analysis is based on a matched sample of 15 identical questions found in both the ECB and Federal Reserve surveys, which focus on financial instruments denominated in euro and US dollars respectively. Eight of these 15 questions are taken from the "securities financing" group and relate to the funding of high-yield bonds and equities, and seven questions are taken from the "OTC derivatives" group and relate to initial margin requirements. The modified difference between the net percentages of respondents for average and most-favoured clients is equal to the difference between absolute net percentages if the latter are of the same sign, or to the sum of absolute net percentages when they are of a different sign.

According to the SCOOS results covering changes over the three-month period ending in November 2011, i.e. before the ECB's announcement of the three-year longer-term refinancing operations in early December 2011, credit terms had tightened for hedge funds and other important client groups. In addition, credit terms under which US dollar-denominated high-yield bonds and equities were funded tightened for both average and most-favoured clients, but a larger net fraction of banks reported tightening for average than for most-favoured clients. Similar differential developments were also reported for changes in initial margin requirements for OTC derivatives contracts, but in this case terms for most-favoured clients did not change much, on balance. In this context and given a very small overall net tightening of credit terms for covered client groups in the March 2013 SESFOD, it is somewhat unexpected that, on balance, more SESFOD respondents reported tightening for most-favoured rather than for average clients.

Relationship between changes in price and non-price terms deserves further investigation

Another noteworthy aspect that deserves further investigation relates to the relationship between changes in price and non-price terms, despite the low (quarterly) frequency of SESFOD data. Non-price terms may often take more time to alter than price terms, and so one could expect that changes in price terms could lead changes in non-price terms. A visual inspection of Federal Reserve data presented in Chart C.1b reveals that changes in price and non-price terms for a specific type of counterparty usually occur in parallel, but not always. In some – albeit infrequent – cases, the net percentages of respondents for price and non-price terms were changing in different directions. Furthermore, there were also cases when changes in price and non-price terms for a client group were suggesting diverging developments – for example, the net percentage of respondents indicated a tightening of price terms for a certain group of counterparties, whereas an easing, on balance, was reported for non-price terms. It seems that an analysis of bank-level responses may be needed to fully explore these issues.

CONCLUDING REMARKS

The rich set of SESFOD questions provides plenty of research possibilities

The rich set of SESFOD questions should make a significant contribution to a better understanding of developments in euro-denominated securities financing and non-centrally cleared OTC derivatives markets, both of which are important conduits for leverage in the financial system. Some of the SESFOD questions, such as those on credit limits, liquidity and market functioning, differential terms for average and most-favoured clients and reasons behind changes in credit terms, provide qualitative information that would be quite difficult to track in a quantitative way. As the length of SESFOD time series data increases, this should spur research on the early warning properties of survey responses, their usefulness for monitoring purposes in general, and their links with related but currently still limited quantitative data on these wholesale financial markets. The first SESFOD results were broadly in line with other, albeit limited, available information on developments in targeted euro-denominated markets and, among other findings, pointed to some better financing conditions for euro-denominated government bonds.

The SESFOD should become an important data source and monitoring tool

All in all, the SESFOD represents a substantial step forwards in improving the monitoring of euro-denominated securities financing and OTC derivatives markets and, importantly, has the potential to become a useful source of information on credit terms and conditions in these wholesale financial markets.