Contingent Convertibles – Liability or Equity?

A study of the CoCo market's reaction to banks' earnings announcements

Master's thesis (15 credits) in financial accounting

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Abstract

A rapid development of complex compound financial instruments, that share characteristics of both debt and equity, has put the IASB's and the FASB's currently used dichotomous classification approach under stress. In June 2018, the IASB issued the *Financial Instruments with Characteristics of Equity* discussion paper (FICE DP), which aims towards improving IAS 32 and the current classification approach. Contingent convertibles (CoCos) are one compound financial instrument that is brought up for discussion in the FICE DP. CoCos became popular after the global financial crisis and their purpose is to make sure that banks meet regulatory capital requirements in times of financial distress. This study examines if holders of CoCos perceive the instrument as liability or equity, to add to the current accounting discussion. This is done by measuring the relationship between different components of 78 banks' income statements and cumulative abnormal CoCo returns, between 2009 and 2018. The income statement is disaggregated into loan loss provisions (LLP) and operating income adjusted for LLP (OI). LLP, a measure of probability of default, is proven to have a greater impact on bondholders while OI is proven to have a greater impact on equity holders. Research on the market perception of compound financial instruments is ambiguous, and a two-sided hypothesis is therefore developed. The first hypothesis states that holders of CoCos react to a greater extent to changes in OI than to changes in LLP, and the second hypothesis states that holders of CoCos react to a greater extent to changes in LLP than to changes in OI. The empirical findings suggest that holders of CoCos react to a greater extent to changes in LLP, thus reacting in accordance with debtholders and the economic substance of the instrument can be seen as a liability. This implies that the current balance sheet classification might lack transparent information and representational faithfulness, which calls for an improvement of the accounting regulation.

Keywords: Contingent Convertibles, CoCos, compound financial instruments, balance sheet classification, IAS 32, FICE discussion paper, banks

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1. Introduction

There is an ongoing debate regarding the underlying rationale of the distinction between liability and equity. This distinction plays a significant role in how entities provide information in their financial statements (IASB, 2018)[31]. Historically, this was not an issue. The classification between liability and equity stems from a traditional convention in accounting. The dichotomous approach that the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) use for classification complies with this traditional convention. In the *Conceptual Framework for Financial Reporting* (Conceptual Framework), the IASB defines equity as a residual between assets and liabilities. Therefore, only limited guidance on the classification is presented (Fargher, Sidhu, Tarca & Van Zyl, 2019)[23]. This is currently under discussion, partly due to the development of complex hybrid instruments, but also because the adoption of International Financial Reporting Standards (IFRS) resulted in situations where the current classification approach has led to less useful information for users of financial reports (Schmidht, 2013)[49].

Current accounting regulation has been widely criticized for providing limited information about how to classify a transaction or an event as representing liability or equity. This has resulted in application challenges and accounting diversity in practice. The issue is important because the classification of a financial instrument as liability or equity affects how an entity's financial position and performance is depicted (Fargher et al., 2019)[23]. The classification affects the solvency ratio of an entity, whether debt covenants are met, if periodic payments on the financial instruments are classified as interest (impacting the income statement) or dividends (not impacting the income statement) and, often within the banking industry, whether regulatory capital requirements are met (Picker, Clark, Dunn, Kolitz, Livne, Loftus & Van Der Tas, 2016)[46]. Since the classification has an impact on the content of the balance sheet and the income statement, it also affects key performance indicators (Falkman & Klasson, 2018)[22]. Today, guidance on how to classify an instrument according to IFRS can be found in IAS 32, *Financial Instruments: Presentation*, and the Conceptual Framework (IAS 32[33]; Conceptual Framework[32]). After the issuance of IAS 32, market participants have been taking advantage of the classification principle and developed complex financial instruments that meet the technical criteria of equity, even though the underlying substance of the instruments is structured as liability (Picker et al., 2016)[46].

On the 28th of June 2018, the IASB issued a discussion paper, *Financial Instruments with Characteristics of Equity* (FICE DP). The project addresses challenges with applying IAS 32 in practice and aims towards improving IAS 32, hence improving the information that entities provide in their financial statements about issued financial instruments. The project regarding *Financial Instruments with Characteristics of Equity* (FICE) is important because it puts up a discussion regarding the distinction between liability and equity, and the role it plays in what entities provide in their financial statements (IASB, 2018)[31]. Investors have expressed their concern regarding the limited information that is provided about the instruments and how they should be classified. IAS 32 and the Conceptual Framework have been criticized for not providing a clear rationale on how to classify financial instruments. Even though the application of IAS 32 sometimes is straightforward, questions usually arise from stakeholders about the

financial reporting consequences and whether they provide all the useful information. In addition, the lack of a clear rationale has led to less specific guidance regarding instruments that are more complex, resulting in a larger accounting diversity in practice. Because of this, the FICE project is important for the IFRS Interpretations Committee and this makes for interesting research (IASB, 2018)[31].

A growing number of challenges have emerged since IAS 32 was implemented. The challenges are mainly due to some financial instruments sharing characteristics of both liability and equity. One of the financial instruments that the IASB brings up for discussion, which faces the previously mentioned problem, is contingent convertibles, also known as CoCos. CoCos are convertible securities that convert into equity when a trigger point has been reached (Marquardt & Wiedman, 2007b[41]; Pazarbasioglu, Zhou & Le Leslé & Moore, 2011[45]; De Spiegeleer, Marquet & Schoutens, 2018[19]). Because of the global financial crisis in 2007/2008, governments had to support banks to keep them from bankruptcy. This resulted in new capital requirements for the banking industry. With this new regulation in place, banks had to find new financing solutions, which triggered them to issue CoCos (Pazarbasioglu et al., 2011[45]; IASB, 2018[31]). The first CoCo bond was put out by Lloyds Banking Group in 2009 (De Spiegeleer et al., 2018)[19] and the instrument has grown in popularity ever since, due to its ability to make sure that banks have access to capital during times of financial distress (BIS, 2013)[9]1.

IAS 32 lacks sufficient guidance on how to classify CoCos, which means that guidance must be found in the overall rationale of IAS 32. However, since the rationale is inadequate, it has led to challenges in applying the standard for some types of CoCos (IASB, 2018)[31]. Even though this accounting challenge only affects some entities, the instrument makes up for a large part of these entities' financial statements, and the classification as liability or equity therefore has a great impact on how their performance is depicted (IASB, 2018)[31].

There is a stream of research in the liability/equity split area that examines how the market reacts and responds to compound financial instruments (Fargher et al., 2019[23]; Frischmann, Kimmel & Warfield, 1995[24]; Chan & Seow, 1997[11]; Cheng, Frischmann & Warfield, 2003[12]; Kimmel & Warfield, 1995[35]; Cheng, Liu, Newberry & Reichelt, 2007[13]; Cheng, Liu & Reichelt, 2011[14]; Terando, Shaw & Smith, 2007[53]; Barth, Hodder & Stubben, 2013[5]; Ammann, Blickle & Ehmann, 2017[2]; Liao, Mehdian & Rezvanian, 2016[38]; Schmidt & Azarmi, 2015[50]; Marquard & Wiedman, 2005[40]; Patel, Emery & Lee, 1993[44]; Godfrey, Chalmers & Navissi, 2010[26]). Research that investigates how the market perceives various financial securities is useful for standard setters such as the IASB and the FASB (Cheng et al., 2003)[12]. Moreover, research also points towards that accounting regulation that requires financial instruments to be classified in accordance with their economic substance instead of their legal form, significantly lowers the systematic risk, since it creates more transparent information and thus reduces information asymmetry (Godfrey et al., 2010[26]). These results indicate that it is important to understand the economic substance of financial instruments, to be able to classify them correctly. How the market perceives CoCos is therefore of great importance for improving the accounting regulation.

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1 A more detailed description of CoCos can be found in section 2.1.

Given the previous discussion, the purpose of this study is to examine whether holders of CoCos[2] perceive the financial instrument as liability or equity, to be able to add to the discussion on how they should be classified in the balance sheet. The purpose is reached by measuring the association between cumulative abnormal CoCo returns and changes in loan loss provisions (LLP) and operating income adjusted for LLP (OI), in quarterly earnings announcements of banks following IFRS. Recent research has shown that LLP, a measure of probability of default, have a greater effect on bond markets, while OI has a greater effect on equity markets (Papadopoulos & Marton, 2019[43]). This stems from a vast amount of research suggesting that earnings announcements provide both bond and equity holders with relevant information (Hayn, 1995[27]; Dechow, Ge & Schrand, 2010[17]; Merton, 1974[42]; Elton, Gruber, Agrawal & Mann, 2004[21]; Kothari, Ramanna & Skinner, 2010[36]; Defond & Zhang, 2014[18]; Watts, 2003[54]; Plummer & Tse, 1999[47]; Easton, Monahan & Vasvari, 2009[20]; Basu, 1997[3]; Papadopoulos & Marton, 2019[43]). Bondholders and equity holders however value information differently since the underlying instruments differ in both pay-off structure and liquidation. In general, bondholders are more conservative than stockholders and bond prices are thus relative to stock prices more impacted by bad news that affects the probability of default (Elton et al., 2004[21]; Merton, 1974[42]; Kothari et al., 2010[36]; Defond & Zhang, 2014[18]; Watts, 2003[54]; Plummer & Tse, 1999[47]; Hayn, 1995[27]). Hence, it is possible to make use of Papadopoulos and Marton's (2019)[43] conclusions to measure how holders of CoCos react to banks' earnings announcements. Do they react in line with a debtholder or an equity holder?

The empirical findings of the study show that holders of CoCos react to a greater extent to changes in LLP than to changes in OI. These results are valid when cumulative abnormal CoCo returns are measured over a short time period. This indicates that holders of CoCos react in line with a debtholder and thus perceive the instrument as liability rather than equity.

However, this study faces some limitations. There is research showing contradicting findings regarding what impact the balance sheet classification of compound financial instruments has on investors' perceptions (Hopkins, 1996[30]; da Costa, Neto & da Silva, 2016[16]; Clor-Proell, Koonce & White, 2016[15]). Some research shows that the classification matters and does have an impact when financial analysts make forecasts of prices (Hopkins, 1996)[30], while there is evidence showing that analysts are generally conservative and treat compound financial instruments as liability, despite of how the instrument is classified (da Costa et al., 2016)[16]. However, recent research indicates that the balance sheet classification of hybrid instruments is not the primary source of information regarding credit-related judgements of experienced finance professionals. Instead, the experts mostly base their judgment on the special features of the instruments (Clor-Proell et al., 2016)[15]. In this study, the classification of CoCos is not taken into consideration. Even though prior research shows contradicting results, this can possibly have an impact on the empirical findings of this study. Further, due to constraint when accessing data, it was almost exclusively possible to observe banks following IFRS and other national GAAPs. It might have been useful, to increase the sample size, to include US GAAP banks as well.

Finally, our study contributes to the FICE project and the current discussion on how financial instruments that share characteristics of both debt and equity should be classified in the balance

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[2] Current and potential holders, that is, the CoCo market.

sheet. If the accounting for compound financial instruments is in accordance with their economic substance, more transparent information is presented, which in turn reduces information asymmetry and creates a balance sheet with representational faithfulness. The type of research we perform is therefore important for improving the accounting regulation, and thus useful for standard setters, such as the IASB and the FASB. Further, we contribute to the field of research that investigates compound financial instruments and how they are perceived by the market, by providing enhanced knowledge on the market perception of CoCos.

This study is structured as follows. First, a description of contingent convertibles is outlined, followed by the current and proposed accounting regulation they are affected by (section 2.1 and 2.2). In section 2.3, prior research is discussed and hypotheses are built. This is followed by a description of the chosen research design and sample selection in section 3. In section 4, descriptive statistics are presented along with the empirical findings, subsequently followed by a discussion of the results in section 5. Finally, section 6 concludes the most important findings of this study, contributions and suggestions for future research.

2. Background and hypothesis development

2.1. Contingent Convertibles (CoCos)

A contingent convertible capital instrument is a financial instrument that is used by banks and other financial institutions to increase equity during times of financial distress (BIS, 2013)[9]. During the global financial crisis of 2007/2008, governments had to support banks to keep them from bankruptcy, and to protect their financial stability. Most hybrid instruments during that time did not do their job to absorb losses as they should. Due to the problems that arose during that time, proposals for contingent capital became popular. CoCos gained interest in the investing world due to its potential to reduce the risk for the investors and the risk for a public bail out. Many countries now see CoCos as a way of improving crisis management (Pazarbasioglu et al., 2011)[45].

The instruments are engineered like a regular bond with principal and scheduled payments, with a built-in conversion to equity or write down if a trigger event, that is predetermined, occurs (Pazarbasioglu et al., 2011[45]; De Spiegeleer et al., 2018[19]). CoCos are structured to absorb losses earlier than, or at the point of, insolvency. Further, the mechanism that activates the loss absorption has to be a function of the issuing banks capitalization level. The instrument absorbs losses in accordance with their contractual terms when the capital ratio falls below a certain point, called the Tier 1 level. If the bank's capital level falls below this point, the debt is reduced and the instrument is converted from a liability to equity (BIS, 2013)[9].

Research has been performed to establish how CoCos contribute to a more stable banking industry. In situations where the probability of conversion is high enough, the CoCo bonds reduce the issuer's default risk, that is, acting in a similar way as equity in the aspect of how it affects the resilience of the issuer (Jaworski, Liberadzki & Liberadzki, 2017)[34]. In addition, risk shifting incentives of a bank are reduced when they issue contingent capital, which is not the case when financing through subordinated debt or additional equity. Therefore, CoCos reduce the probability of default and stabilize the banking industry (Hilscher & Raviv, 2014)[29].

In contrast to the previously mentioned research, Kozoil and Lawrenz (2012)[37] point out that there are some conditions where financing via CoCo bonds increase investors' wealth, and at the same time increase the banks' probability of financial distress. This does not occur in situations where complete contracts are written and bank managers are unable to impact the business risk. However, when incomplete contracts are allowed, it can create situations where CoCos maximize value for equity holders and at the same time trigger them to take excessive risk. This may lead to a destabilization of the banking sector (Kozoil et al., 2012)[37].

2.2. Accounting regulation and FICE Discussion Paper

2.2.1. Conceptual Framework and IAS 32

The Conceptual Framework defines the five components of a financial statement: assets, liabilities, equity, income and expenses. An asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity. A liability is a present obligation to the entity arising from past events, the settlement of which is expected to result in an outflow of economic resources from the entity of resources embodying

economic benefits (Conceptual Framework, paragraphs 4.4(a) and (b))[32]. Equity is defined as the residual interest in the assets of the entity after deducting all of its liabilities (Conceptual Framework, paragraphs 4.4 (c))[32].

IAS 32 provides definitions of financial assets, financial liabilities and equity instruments. A financial liability is defined as a contractual obligation to deliver cash or another financial asset to another entity or to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavorable to the entity. Also, a financial liability is a contract that will or may be settled in the entity's own equity instrument and meets the criteria of (a) and (b). An equity instrument is defined as any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities (IAS 32, paragraph 11)[33].

The principle of defining equity is the same in the Conceptual Framework and IAS 32. However, the underlying principle in IAS 32 has not been applied adequately. A possible explanation to this is that the standalone principle cannot deal with the increasing complexity of financial instruments (Fargher et al., 2018)[23].

2.2.2. Accounting for CoCos

CoCos are in accordance with IAS 32 classified as a liability if the instrument converts into a variable number of shares, but as equity if the number of shares is fixed. A CoCo converts into ordinary shares when a trigger event occurs, for example at a certain capital level. When classifying a CoCo, the entity does not have to consider the likelihood of this event occurring. Thus, even though the likelihood of the event occurring is small, the instrument could be classified as equity even in cases when it should be classified as a liability. CoCos are most commonly used in the banking sector, where they usually are classified as equity due to banking regulation requirements (Fargher et al., 2019)[23].

Some instruments, like CoCos, have a contingent settlement provision. This is when the instrument requires an entity to deliver cash or other financial assets, the terms of the settlement are dependent of the occurrence or non-occurrence of uncertain future events that are beyond the control of both the issuer and the holder. The issuer does not have the unconditional right to avoid delivering cash or other financial assets. These types of instruments should be classified as financial liabilities, unless the criteria of (a), (b) or (c) are met (IAS 32, paragraph 25[33]; Picker et al., 2016[46]).

Overall, the classification however depends on how the contractual terms are formulated and how they are interpreted under IAS 32, which differ in practice (IASB, 2018)[31].

2.2.3. FICE Discussion Paper

In the FICE discussion paper, the IASB builds an approach for classifying financial instruments as either liability or equity, without changing the fundamental principles in IAS 32. The IASB claims that developing a more explicit rationale for the distinction between a financial liability and equity will help to explain a lot of the current classification outcomes. This approach also addresses the challenges with accounting diversity, that IAS 32 has caused (IASB, 2018)[31].

The IASB's proposed model will classify a financial instrument as a financial liability if it contains:

- An unavoidable obligation to transfer economic resources at another time than at liquidation (*the timing feature*), and/or
- An unavoidable obligation independent of the economic resources of the firm at the certain time (*the amount feature*) (IASB, 2018)[31].

Figure 1 summarizes the approach.

Figure 1: The proposed classification approach (IASB, 2018)[31]

Amount feature *Timing feature*	Obligation for an amount independent of the issuer's available economic resources (such as fixed contractual amounts, or an amount based on an interest rate or other financial variable)	No obligation for an amount independent of the issuer's available economic resources (such as an amount indexed to the firm's own share price)
Obligation to transfer economic resources required at a specified time other than liquidation (such as scheduled cash payments)	**Liability (1)** (Such as simple bonds)	**Liability (2)** (Such as redeemable at fair value)
No obligation to transfer economic resources at a specified time other than at liquidation (such as settlement in a firm's own shares)	**Liability (3)** (Such as bonds with an obligation to deliver a variable number of a firm's own shares with a total value equal to a fixed amount of cash)	**Equity (4)** (Such as ordinary shares) .

In accordance with the Conceptual Framework, the model classifies equity as a residual. According to IAS 32, there are situations today where an instrument can be classified as equity when it meets the criteria of box 2 and 3 (Falkman & Klasson, 2018)[22].

There is no specific guidance in IAS 32 on how to classify CoCos. Since there is an absence of a clear rationale for classification of financial instruments under IAS 32 in general, it has resulted in differences in the accounting for CoCos in practice. In IAS 32, paragraph 25, there are requirements for contingent settlement provisions that arise due to the occurrence (or non-occurrence) of uncertain future events that are beyond the control of both the issuer and the holder. For example, these events can be changes in stock market index or changes in a firm's capital ratio. The IASB mention CoCos as a particular instrument that has been questioned whether the liability component should include the conditionality of the settlement outcome or not (IASB, 2018)[31].

The IASB's proposed approach aims to increase comparability and thus the usefulness of financial statements. To achieve this, the classification of financial instruments that share the same or similar contractual rights and obligations should be consistent, independent of the financial arrangement. The two features that Figure 1 describes should therefore be applied on the accounting for compound financial instruments such as CoCos (IASB, 2018)[31].

2.3. Development of hypotheses

2.3.1. The differences between bond and equity investors

There is a vast amount of research showing that financial statements, and earnings in particular, contain information for both bond and equity markets (Hayn, 1995[27]; Dechow, Ge & Schrand, 2010[17]; Papadopoulos & Marton, 2019[43]; Merton, 1974[42]; Elton et al., 2004[21]; Kothari et al., 2010[36]; Defond & Zhang, 2014[18]; Watts, 2003[54]; Plummer & Tse, 1999[47]; Easton et al., 2009[20]; Basu, 1997[3]). However, there are several differences between bond and equity markets, partly differences in how the instruments are engineered, such as pay-off structure and liquidation, but also differences in how bond and equity holders react and value the information content of earnings announcements (Elton et al., 2004[21]; Merton, 1974[42]; Kothari et al., 2010[36]; Defond & Zhang, 2014[18]; Watts, 2003[54]; Plummer & Tse, 1999[47]; Hayn, 1995[27]).

The contracting literature claims that bondholders are more conservative than stockholders (Kothari et al., 2010)[36]. Bondholders care about the required rate of return on riskless (in terms of default) debt, the various provisions and restrictions contained in the indenture and the probability of default when valuing a corporate debt. The stock market uses earnings announcements for estimating equity value, while the bond market most likely uses it to revise beliefs of default risk (Merton, 1974[42]; Elton et al., 2004[21]). Overall, bond prices not only reflect bad news in a more timely manner than they reflect good news, they also impound bad news in a more timely manner compared to stock prices (Kothari et al., 2010[36]; Defond & Zhang, 2014[18]). The findings of Kothari et al. (2010)[36] and Defond and Zhang (2014)[18] are also in line with Easton et al. (2009)[20], who claim that bond prices react more strongly to bad earnings news than to good earnings news. Furthermore, the conservatism literature suggests that due to bondholders' asymmetric payoff function, they are likely to be more concerned with lower earnings (Watts, 2003)[54]. Unlike stockholders, bondholders only receive the agreed principal and interest payments, whether there is an upside in the firm's performance or not. Since they cannot take advantage of a firm's upside, bondholders tend to be less impacted by news that indicate an increase in a firm's value and more impacted by news that indicate a decline. Stock prices on the other hand increase when investors become more positive about a firm's future performance (Kothari et al., 2010[36]; Hayn, 1995[27]; Merton, 1974[42]; Elton et al., 2004[21]).

Moreover, as long as the default risk of a firm is low, bondholders are less interested in a firm's financial condition. However, as the default risk increases, the importance of the financial condition increases as well. Consistently, the usefulness and relevance of earnings information for bondholders also increase as the financial strength declines (Plummer & Tse, 1999)[47]. A downturn of a firm in terms of future cash flows will have a greater negative impact on bond investors compared to equity investors. This holds true provided that the downturn will increase the probability of default and thus the ability of the issuer to pay the agreed coupon payments (Papadopoulos & Marton, 2019)[43].

Papadopoulos and Marton (2019)[43] investigate whether bond or equity markets react differently to different components of banks' income statements. The hypotheses are that bond markets will have a greater reaction on LLP and that OI will have a larger effect on equity markets. The results confirm the hypotheses and show that debt holders seem to be the primary users of accounting for credit losses. Papadopoulos and Marton (2019)[43] argue that LLP relates to negative earnings surprises and will hence capture conditional conservatism[3]. Several previous studies show that credit losses are the primary reason for bank failures (Ahmed, Takeda & Thomas, 1999[1]; Gebhardt & Novotny-Farkas, 2011[25]; Hess, Grimes & Holmes, 2009[28]). OI will consist of both positive and negative earnings surprises. The conclusion is therefore that LLP is more important to bondholders and that OI is more important to shareholders. This is due to LLP giving a stronger signal about default risk than other operating income items that have a negative effect on operating income (Papadopoulos & Marton, 2019)[43].

2.3.2. The market perception of compound financial instruments

Over the years, research has been made on how the market perceives various compound financial instruments. However, the results are not entirely unanimous. Arguments can be made about that the rapid development of innovative financial instruments oversteps generally accepted accounting principles. Frischmann et al. (1995)[24] prove this statement by showing how accounting principles fail when applied to redeemable preferred stocks. The financial statements do not show the underlying economic substance of the security and the classification of a compound instrument as debt or equity can therefore be somewhat misleading. Hence, there is a risk for investors to solely rely on the information presented in the financial reports regarding these types of financial instruments, since they differ from the economic reality (Frischmann et al., 1995)[24]. Moreover, research show that if a compound financial instrument is classified in accordance with its economic substance instead of their legal form, the systematic risk becomes substantially lower. These results indicate that this kind of regulation provides more transparent information and thus, information asymmetry is reduced (Godfrey et al., 2010)[26].

One financial instrument that, like CoCos, shares characteristics of both debt and equity is mandatorily redeemable preferred stock (MRPS). When it comes to the question how MRPS is perceived by the market, research has shown that MRPS in general seems to share key characteristics of both debt and equity (Chan & Seow, 1997[11]; Cheng et al., 2003[12]). Thus, this indicates that the instrument should not be classified in the financial statements as either liability or equity (Chan & Seow, 1997)[11]. Therefore, the dichotomous classification approach, as the one adopted by the IASB and the FASB, lacks representational faithfulness (Cheng et al., 2003)[12]. Further, Kimmel and Warfield (1995)[35] examine the association between firm leverage and systematic risk of US firms, to determine the economic substance of redeemable preferred stock. The study shows that redeemable preferred stock does not affect systematic risk in the same way debt does (Kimmel & Warfield 1995)[35].

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[3] Basu (1997 s.7)[3] defines conditional conservatism as: "*accountants' tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses.*" This stems from Bliss' (1924)[10] expression of conservatism as the rule: "*anticipate no profits but anticipate all losses*".

However, research also points in the other direction. When measuring how the market integrates variants of preferred stock into cost of common equity, an increase of preferred stock (regardless if the shares are redeemable, non-redeemable or convertible), increases cost of common equity. This suggests that the instrument is perceived as a liability (Cheng et al., 2007)[13]. In addition, a high preferred stock to asset ratio is perceived as risky according to common shareholders. This also indicates that the market views preferred stock as liability (Cheng et al., 2011)[14].

In the light of the adoption of SFAS 150, *Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity*, Terando et al. (2007)[53] examine whether investors' perception of put warrants that contain cash-only settlement terms, and put warrants that also allows share-settlement, coincide with how they are treated on the balance sheet. Both types of put warrants are treated as liability according to SFAS 150. The different put types might however have different effects on firm solvency since they might have an impact on investors' valuations. The results show that the balance sheet treatment is potentially misleading to investors, since investors do value cash and share-puts based on their solvency characteristics and not solely based on what is recognized in the balance sheet (Terando et al., 2007)[53].

Furthermore, Barth et al. (2013)[5] examine whether employee stock options are perceived as liability or equity. The results show that common equity risk and expected return have a negative correlation with the amount of outstanding employee stock options of a firm. The relationship for liability is the opposite, and the conclusion is therefore that employee stock options seem to be perceived as equity. Moreover, leverage measures are affected differently depending on if the options are treated like liability or equity in the balance sheet. If treated as equity, there is a stronger positive relationship with common equity risk in comparison to treating the option as a liability. Therefore, Barth et al. (2013)[5] argue that if the options are classified as liability, there is weakened representational faithfulness of the leverage measure with respect to common equity risk. Overall, the findings suggest that employee stock options act more as equity than debt (Barth et al., 2013)[5].

Moreover, there are some studies that examine the market perception of CoCos. Ammann et al. (2017)[2] investigate the announcement effects of CoCos that were issued by banks all over the world between 2009 and 2014. The findings show that the announcement of CoCos correlates with positive abnormal stock returns, which suggest that the issuance has a positive effect on the market value of the issuing firm. Equity investors see the issuance of CoCos as a positive signal, which can be explained by pecking order theory that states that, in the eyes of equity holders, debt financing is more favorable than financing through issuance of new equity (Ammann et al., 2017)[2].

Some research also points in the other direction. Liao et al. (2016)[38] investigate the reaction that investors have on the announcement of issuance of CoCos. They find that the issuing banks often see a negative abnormal return in the period after the announcement (Liao et al., 2016)[38]. In line with these findings, Schmidt and Azarmi (2015)[50] find that the market value of banks that are issuing CoCos declines post the announcement of the issuance. At the same time, the CDS spread increases. Based on these findings, the authors suggest that by issuing CoCos, the bank might face a negative effect on its firm value and creditworthiness. One of the highlighted reasons behind the negative reaction is the stockholders' fear of dilution of decision rights, if the CoCo

converts to common equity (Schmidt and Azarmi, 2015)[50]. Moreover, Marquard and Wiedman (2005)[40] inter alia examine if there are any differences between how the capital market responds to issuance of convertible debt and issuance of CoCos. The results show no significant difference in the market response (Marquard & Wiedman, 2005)[40]. Patel et al. (1993)[44] argue that issuance of convertible debt affects firm value in a similar way that issuance of common equity does.

In summary, the main predictions for this study is that bondholders will react to a greater extent to LLP and equity holders will react to a greater extent to OI. The assumption is therefore that if holders of CoCos react to a greater extent to changes in bank OI than to changes in bank LLP, they perceive the CoCo as equity. In contrast, if they react to a greater extent to changes in bank LLP than to changes in bank OI, they perceive the CoCo as a liability. Since there is no general consensus in how the market perceives different compound financial instruments, and in particular CoCos, a two-sided hypothesis is developed:

H1: Holders of CoCos will react to a greater extent to changes in OI than to changes in LLP.

H2: Holders of CoCos will react to a greater extent to changes in LLP than to changes in OI.

3. Research design

3.1. Value relevance study

To test our hypotheses, we carry out a value relevance study. Barth, Beaver and Landsman (2001)[4] define value relevance as an accounting amount having a predicted association with security prices. We examine whether CoCo investors find either LLP or OI more value relevant by estimating the variables' relation with abnormal CoCo returns. According to MacKinlay (1997)[39], the association between a certain economic event, such as earnings announcements, and the security market price is most correctly captured by abnormal return. The relations are measured over a 3-, 5-, 10- and 30-day quarterly earnings announcement window during 2009-2018.

First, the daily CoCo returns ($CR_{i,t}$) are calculated as follows:

$$CR_{i,t} = \frac{P_t - P_{t-1}}{P_{t-1}} \tag{1}$$

Thereafter, the abnormal returns are calculated as follows:

$$ACR_{i,t} = CR_{i,t} - \mu(CR_t) \tag{2}$$

where $\mu(CR_t)$ represents the mean of the quarterly CoCo returns, for each year respectively. This represents a quarterly adjusted index of the CoCo returns in our selected sample.

However, to be able to draw overall conclusions of the earnings announcement windows, the abnormal returns need to be aggregated (MacKinlay, 1997[39]; Strong, 1992[52]). We do this by calculating the cumulative abnormal CoCo returns ($CACR_{i,t}$) as follows:

$$CACR_{i,t} = [(1 + ACR_{i,1}) \times (1 + ACR_{i,2}) \times \ldots (1 + ACR_{i,t})] - 1 \tag{3}$$

First the abnormal CoCo returns are added by 1. Then the product of these abnormal CoCo returns is computed, and 1 is deducted to get the cumulative abnormal CoCo returns.

3.2. Regression

To test our hypotheses, the coefficients of the following regression will be estimated:

$$CACR_{i,t} = \beta_0 + \beta_1 \Delta LLP_{i,t} + \beta_2 \Delta OI_{i,t} + \beta_3 Size_{i,t} + \beta_4 MTB_{i,t} + \beta_5 Lev_{i,t} + \beta_6 EPS_{i,t} + \beta_7 DLoss_{i,t} + \varepsilon_{i,t}$$

where

$CACR_{i,t}$ = Cumulative abnormal CoCo return of bank i in quarter t over a 3-, 5-, 10- and 30-day earnings announcement window.

$\Delta LLP_{i,t}$ = Change in loan loss provisions of bank i in quarter t to t-1, scaled by net loans in the beginning of the period.

$\Delta OI_{i,t}$ = Change in other operating income adjusted for LLP of bank i in quarter t to t-1, scaled by net loans in the beginning of the period.

$Size_{i,t}$ = The natural logarithm of total assets of bank i in quarter t.

$MTB_{i,t}$ = Market-to-book-ratio of bank i in quarter t.

Lev$_{i,t}$ = Leverage of bank *i* in quarter *t*.

EPS$_{i,t}$ = Earnings per share of bank *i* in quarter *t*

DLoss$_{i,t}$ = A dummy variable that equals 1 if bank *i* reports losses in quarter *t* and 0 if bank *i* does not report losses in quarter *t*.

$\varepsilon_{i,t}$ = Error term

Operating income is disaggregated into loan loss provisions and other operating income adjusted for LLP, to be able to measure the relative impact these two variables have on cumulative abnormal CoCo returns. The change of these two variables is used, with the assumption that investors will react if the variables change from one quarter to another. The variable *Size$_{i,t}$* is the natural logarithm of total assets, which is a proxy for size. Size is expected to have a correlation with returns (Runesson, 2015)[48] and is therefore a necessary and commonly used control variable in this type of study (Strong, 1992)[52]. Earlier research, such as Papadopoulos and Marton (2019)[43], Runesson (2015)[48] and Beattie, Goodacre and Thomson (2000)[6], uses the logarithm of total assets to calculate firm size. *MTB$_{i,t}$*, *Lev$_{i,t}$*, *EPS$_{i,t}$* and *DLoss$_{i,t}$* are control variables chosen in accordance with Papadopoulos and Marton (2019)[43]. Market-to-book-ratio is used by Papadopoulos and Marton (2019)[43] as a proxy for unconditional conservatism[4]. Research show that conditional conservatism is affected by the level of unconditional conservatism (Beaver & Ryan, 2005)[7]. Since LLP is assumed to capture conditional conservatism, we use the market-to-book-ratio to control for unconditional conservatism. Leverage and earnings per share are assumed to impact the relationship between cumulative abnormal CoCo returns and change in LLP and OI. *DLoss$_{i,t}$* is used to control for the signaling effect that losses may have on the market. Table 1 summarizes the variables of the regression.

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[4] Xu and Lu (2008)[55] define unconditional conservatism as "*an accounting bias toward reporting low book values of stockholder equity*".

Table 1: Description of variables

Variable	Variable label	Description
Dependent variable		
$CACR_{i,t}$	Cumulative abnormal CoCo return	Cumulative abnormal CoCo return is the dependent variable, which is calculated by formula 1-3 section 3.1.
Independent variables		
$\Delta LLP_{i,t}$	Change in loan loss provisions	The change from period t to $t-1$ in quarterly bank loan loss provisions. Provision for loan losses is an expense that are set aside as an allowance for uncollected loans, resulting from troubled loans, customer defaults etc. The amount is scaled by net loans in the beginning of the period, and multiplied with 100 to make the interpretation easier, in line with Papadopoulos and Marton (2019)[43].
$\Delta OI_{i,t}$	Change in other operating income adjusted for loan loss provisions	The change from period t to $t-1$ in quarterly bank operating income, adjusted for loan loss provisions. Operating income is defined as Total Revenues – Total Operating Expenses. The amount is scaled by net loans in the beginning of the period, and multiplied with 100 to make the interpretation easier, in line with Papadopoulos and Marton (2019)[43].
Control variables		
$Size_{i,t}$	Bank size	Size is calculated as the natural logarithm of total assets of bank i in quarter t.
$MTB_{i,t}$	Market-to-book ratio	The market-to-book ratio of bank i in quarter t is calculated as Price Per Share/Book Value Per Share.
$Lev_{i,t}$	Leverage	The leverage of bank i in quarter t is calculated as Total Debt/Total Common Equity.
$EPS_{i,t}$	Earnings-per-share	Earnings-per-share of bank i in quarter t.
$DLoss_{i,t}$	Loss dummy	An indicator variable that equals 1 if bank i reports losses in quarter t and 0 otherwise.

3.3. Sample selection

We retrieve the accounting data from S&P Capital IQ and the capital market data from Bloomberg. The sample consists of banks issuing CoCos and following IFRS between Q1 2009 and Q4 2018. We choose banks since they are the primary issuer of CoCos. Also, to be able to use loan loss provision as a measure, banks are a necessary choice (Papadopoulos & Marton, 2019)[43]. The reason for choosing 2009 as the starting year is because this is the first year that CoCos were issued (De Spiegeleer et al., 2018)[19].

Our initial sample consisted of 275 firms that have issued CoCos during 2009-2018 (either one CoCo or several), which were retrieved from Bloombergs' fixed income search function. We manually made sure that the retrieved ISIN codes belonged to an issued contingent convertible. Thereafter, we collected the accounting data for these firms from S&P Capital IQ, and excluded those who did not operate in the banking sector and did not follow IFRS. This left us with a refined sample of 220 banks. Moreover, banks with no accounting data or earnings announcement date in S&P Capital IQ were excluded from the sample. The final sample therefore consists of 78 banks. Table 2 summarizes the sample selection process, and Table 3 presents the sample composition by country.

Table 2: Sample selection process

Selection criteria	Number of firms
Firms issuing CoCos with available price data in Bloomberg	275
Less:	
Firms not operating in the banking sector	5
Banks not following IFRS from Q1 2009 to Q4 2018	50
Banks with no accounting or earnings announcement date data in S&P Capital IQ	142
Final sample	78

Our selected sample of banks issues 270 CoCos, which gives a possible number of 10 800 (270 CoCos, for each quarter over ten years) observations. The number of observations decreases since all of the CoCos are not issued during the entire time period, thus we have missing values and the dataset is incomplete. For some banks, accounting data is not available during the entire time period (2009-2018), which also leads to missing values. Due to these constraints, the regression only consists of 1643 observations (for the 3-day window, see more details in Table 6).

Table 3: Sample composition by country

Country	Frequency	Percent
Australia	13	0,79
Austria	35	2,13
Belgium	4	0,24
Brazil	3	0,18
China	156	8,89
Colombia	4	0,24
Denmark	61	3,71
Finland	125	7,61
France	329	20,02
Germany	42	2.56
Ireland	14	0,85
Italy	88	5,36
Malaysia	23	1,40
Netherlands	21	1,28
Norway	175	10,65
Portugal	1	0,06
Russia	22	1,34
South Africa	12	0,73
Spain	127	7,73
Sweden	39	2,37
Switzerland	2	0,12
Turkey	1	0,06
United Kingdom	356	21,67
Total	1643	100,00

4. Empirical findings

4.1. Descriptive statistics

Table 4 presents descriptive statistics for the variables of the regression, followed by Pearson correlation matrices in Table 5.

Table 4: Descriptive statistics

Panel A: Distribution of cumulative abnormal CoCo returns (CACR)

Variable	N	Mean	Std.Dev.	Min	25th Pctl	Median	75th Pctl	Max
$CACR_{3\text{-}day}$	1643	-0,0001	0,006	-0,023	-0,002	-0,0001	0,002	0,027
$CACR_{5\text{-}day}$	1804	-0,0001	0,007	-0,026	-0,003	-0,0002	0,003	0,030
$CACR_{10\text{-}day}$	1856	-0,0001	0,009	-0,035	-0,004	-0,0002	0,004	0,035
$CACR_{30\text{-}day}$	1972	0,00004	0,017	-0,035	-0,004	0,0002	0,027	0,061

Panel B: Descriptive statistics of independent and control variables

Variable	N	Mean	Std. Dev.	Min	25th Pctl	Median	75th Pctl	Max
$\Delta LLP_{i,t}$	1643	-0,002	0,151	-0,691	-0,116	-0,001	0,027	0,672
$\Delta OI_{i,t}$	1643	-0,004	0,410	-1,870	-0,113	-0,0002	0,112	1,526
$Size_{i,t}$	1643	12,196	2,369	6,327	10,334	13,043	14,242	15,016
$MTB_{i,t}$	1643	0,971	0,585	0,096	0,565	0,837	1,239	3,178
$Lev_{i,t}$	1643	5,473	4,523	0,164	2,397	4,248	7,379	23,194
$EPS_{i,t}$	1643	0,428	1,197	-3,496	0,043	0,191	0,484	8,393
$DLoss_{i,t}$	1643	0,083	0,276	0	0	0	0	1

Table 4 presents descriptive statistics for the dependent variable (Panel A), the independent variables (Panel B) and control variables (Panel B) of the regression. Three decimal points are used. However, four or more decimal points are used if the value, with three decimal points, equals 0,000. $CACR_{3\text{-}day}$, $CACR_{5\text{-}day}$, $CACR_{10\text{-}day}$ and $CACR_{30\text{-}day}$ refer to windows of (-1,1), (-2,2), (-4,5), (-14,15) with day 0 being the earnings announcement date for bank i in quarter t. However, due to some earnings announcement dates being surrounded by non-trading days, some observations do not include price data for all days during the window. Information about how $CACR$ is computed can be found in section 3.1. The other variables are defined in Table 1. All variables are winzorised at the 1% and 99% distribution levels, to control for extreme values.

Table 4 reports descriptive statistics for the variables of the regression. Panel A displays the distribution of cumulative abnormal CoCo returns over a 3-, 5-, 10- and 30-day earnings announcement window. The mean is similar over all windows except for the 30-day window, with the mean ranging from -0,0001 (3-day window) to 0,00004 (30-day window). The standard deviation increases from the 3-day window up to the 10-day window, from 0,006 (3-day window) to 0,017 (30-day window). Overall, no clear indication is given whether CoCo prices move more around the earnings announcement dates or not. Since the median is relatively similar to the

mean over all four earnings announcement windows, the distribution does not seem to be skewed in any direction.

Panel B reports descriptive statistics of the independent variables and the control variables. The mean (median) of the change in LLP is -0,002 (-0,001), and for change in OI the mean (median) is -0,004 (-0,0002). However, $\Delta OI_{i,t}$ has a greater dispersion, with a standard deviation of 0,410 compared to 0,151 for $\Delta LLP_{i,t}$,. The natural logarithm of total assets, a proxy for size, shows that the banks of the sample has a mean (median) size of 12,196 (13,043) and a standard deviation of 2,369. This indicates that in terms of size, the banks in the sample are relatively similar to each other. Further, the market-to-book ratio has a mean (median) of 0,971 (0,837) and the leverage has a mean (median) of 5,473 (4,248). The leverage statistics suggest that the banks in the sample are highly leveraged. Finally, the mean (median) of $EPS_{i,t}$ is 0,428 (0,191) and for the indicator variable, $DLoss_{i,t}$, the mean of 0,083 indicates that 8,3 % of the banks report losses during the period.

Table 5: Pearson correlation matrices

		1	2	3	4	5	6	7	8	9	10	11
1	$CACR_{3\text{-}day}$	1,000										
2	$CACR_{5\text{-}day}$	0,821***	1,000									
3	$CACR_{10\text{-}day}$	0,708***	0,837***	1,000								
4	$CACR_{30\text{-}day}$	0,409***	0,385***	0,449***	1,000							
5	$\Delta LLP_{i,t}$	-0,043*	-0,026	-0,031	-0,038*	1,000						
6	$\Delta OI_{i,t}$	-0,008	0,004	-0,017	-0,005	-0,606***	1,000					
7	$Size_{i,t}$	0,010	-0,009	-0,046**	0,027	0,018*	0,003	1,000				
8	$MTB_{i,t}$	-0,021	0,005	0,001	0,058*	-0,016	0,063***	-0,049***	1,0000			
9	$Lev_{i,t}$	0,043*	0,021	0,004	0,033	0,017*	-0,017	0,327***	-0,263***	1,000		
10	$EPS_{i,t}$	-0,057**	-0,077***	-0,067***	-0,074***	-0,089***	0,143***	-0,114***	-0,142***	0,019**	1,000	
11	$DLoss_{i,t}$	0,015	-0,011	0,017	0,093***	0,141***	-0,272***	0,061***	-0,161***	0,147***	-0,321***	1,000

Table 5 shows Pearson correlations between the variables of the regression. The significance is denoted by * (0,1), ** (0,05) and *** (0,01), respectively. *CACR_{3-day}, CACR_{5-day}, CACR_{10-day}* and *CACR_{30-day}* refer to windows of (-1,1), (-2,2), (-4,5), (-14,15) with day 0 being the earnings announcement date for bank *i* in quarter *t*. However, due to some earnings announcement dates being surrounded by non-trading days, some observations do not include price data for all days during the window. Information about how the *CACR* is computed can be found in section 3.1. The other variables are defined in Table 1. All variables are winzorised at the 1% and 99% distribution levels, to control for extreme values.

Table 5 reports correlations between the variables used in the regression. $\Delta LLP_{i,t}$ has a significant (at the 10 % level) negative correlation with $CACR$ for the 3-day and 30-day window. $\Delta OI_{i,t}$ does not correlate with $CACR$. Overall, there is no correlation indicating that multicollinearity is a problem in the empirical analysis.

4.2. Regression results

Table 6 shows the regression results for the testing of *H1* and *H2*.

Table 6: Testing of Hypothesis 1 and Hypothesis 2

Panel A: Regression results

Dependent variable: CACR

Variable	(1)				(2)			
	3-day	5-day	10-day	30-day	3-day	5-day	10-day	30-day
$\Delta LLP_{i,t}$	-0,004*	-0,003	-0,007*	-0,004	-0,005**	-0,004	-0,006	-0,002
	(-1,71)	(-1,01)	(-1,78)	(0,63)	(-2,24)	(-1,21)	(-1,53)	(-0,33)
$\Delta OI_{i,t}$	-0,0003	-0,0004	-0,001	-0,0004	-0,001	-0,001	-0,002*	-0,001
	(-0,41)	(-0,42)	(-1,29)	(-0,21)	(-0,81)	(-0,73)	(-1,66)	(-0,48)
$Size_{i,t}$	-0,0001	-0,0001	-0,0003**	0,0002	-0,0001	-0,0002	-0,0004	0,0002
	(-0,97)	(-1,25)	(2,37)	(0,77)	(-0,06)	(-1,05)	(-1,55)	(0,37)
$MTB_{i,t}$	-0,00003	0,0001	0,0001	0,003***	0,0002	-0,0001	-0,0006	0,002
	(-0,10)	(0,33)	(0,14)	(3,27)	(0,44)	(-0,09)	(-0,73)	(1,40)
$Lev_{i,t}$	0,0001**	0,0001**	0,0001	0,0002*	0,0003***	0,0004***	0,0004***	0,0001**
	(2,16)	(2,27)	(1,47)	(1,71)	(2,78)	(3,74)	(3,37)	(2,18)
$EPS_{i,t}$	-0,001***	-0,0001*	-0,001**	-0,001	-0,001	-0,0004	0,0003	-0,001
	(-2,99)	(-3,23)	(-2,31)	(-1,62)	(-1,20)	(-0,62)	(0,45)	(-0,39)
$DLoss_{i,t}$	-0,001	-0,002	-0,0001	0,006***	-0,001	-0,002**	-0,0004	0,004*
	(-1,05)	(-1,63)	(-0,06)	(2,84)	(-0,79)	(-2,01)	(-0,35)	(1,83)
Country FE	No	No	No	No	Yes	Yes	Yes	Yes
Quarter FE	No	No	No	No	Yes	Yes	Yes	Yes
R^2	0,010	0,012	0,012	0,021	0,057	0,062	0,081	0,066
N	1643	1804	1856	1972	1643	1804	1856	1972

Panel B: F-statistics between $\Delta LLP_{i,t}$ and $\Delta OI_{i,t}$

	F-statistics (p-value) (1)				F-statistics (p-value) (2)			
	3-day	5-day	10-day	30-day	3-day	5-day	10-day	30-day
	2,04	0,84	3,26*	0,32	3,78*	1,42	2,96*	0,16
	(0,153)	(0,359)	(0,071)	(0,572)	(0,052)	(0,233)	(0,086)	(0,693)

Panel C: Test of multivariate normality

	Prob>chi2
Doornik-Hansen	0,000

Panel D: Test of multicollinearity

	Min	Mean	Max
VIF-test	1,04	1,29	1,73

Table 6 presents the results of the regression of *CACR* on quarterly changes in bank *LLP* and *OI*. Three decimal points are used. However, four or more decimal points are used if the value, with three decimal points, equals 0,000. Column (1) shows the results without country and quarter fixed effects and in column (2), country and quarter fixed effects are included. 3-day, 5-day, 10-day and 30-day window refer to windows of (-1,1), (-2,2), (-4,5), (-14,15) with day 0 being the earnings announcement date for bank *i* in quarter *t*. However, due to some earnings announcement dates being surrounded by non-trading days, some observations do not include price data for all days during the window. *Country FE* and *Quarter FE* represents country fixed effects and quarter fixed effects. *Quarter FE* is an indicator variable and a useful control variable in time series panel data, to control for time-series trends that can create systematic bias. *Country FE* is also an indicator variable that controls for effects resulting from country specific factors. All variables are winzorised at the 1% and 99% distribution levels, to control for extreme values. The coefficients are displayed for each variable and t-statistics are shown in parentheses. Statistical significance is denoted by * (0,1), ** (0,05) and *** (0,01), respectively. Panel B displays F-statistics to compare the coefficients between $\Delta LLP_{i,t}$ and $\Delta OI_{i,t}$. p-values are shown in parentheses. Column (1) shows the results without country and quarter fixed effects and column (2) shows the results with country and quarter fixed effects. In Panel C, the result of the Doornik-Hansen test of multivariate normality is displayed. Panel D shows a test of multicollinearity. *Size*$_{i,t}$ and *MTB*$_{i,t}$ has the lowest VIF, while the highest belongs to ΔOI.

Table 6 presents the empirical results of testing *H1* and *H2*. Column (1) shows the result of the regression between $\Delta LLP_{i,t}$, $\Delta OI_{i,t}$ and *CACR* over a 3-, 5-, 10- and 30-day earnings announcement window without country and quarter fixed effects. Column (2) shows the results for the same regression with country and quarter fixed effects. $\Delta LLP_{i,t}$ is statistically significant at the 5% level for the 3-day window, with country and quarter fixed effects, and at the 10% level for the 3-day window without the country and quarter fixed effects. F-statistics is used to compare the coefficients of $\Delta LLP_{i,t}$ and $\Delta OI_{i,t}$ within the regression (the control variables are the same as in the regression), which is displayed in Panel B. Regarding the 3-day window with country fixed effects and quarter fixed effects, $\Delta LLP_{i,t}$ is significantly different from $\Delta OI_{i,t}$ (p-value 0,052). This is not the case when country and quarter fixed effects are not included. Also, $\Delta LLP_{i,t}$ is significant at the 10% level for the 10-day window without country and quarter fixed effects, and $\Delta LLP_{i,t}$ significantly differs from $\Delta OI_{i,t}$ (p-value 0,071).

The coefficients are interpreted as follows. A unit change in LLP results in a 0,005 percentage (the values are multiplied with 100 in the regression, see Table 1) points decrease in *CACR* for the 3-day window with country and quarter fixed effects and similarly, a unit change in LLP results in a 0,004 percentage points decrease in *CACR* for the 3-day window without country and quarter fixed effects. Finally, a unit change in LLP decreases *CACR* by 0,007 percentage points for the 10-day window, not accounting for country and quarter fixed effects. $\Delta OI_{i,t}$ is statistically indistinguishable from zero across all windows, except for the 10-day window with country and quarter fixed effects, where it is statistically distinguishable at the 10% level, and also significantly different from $\Delta LLP_{i,t}$ (p-value 0,086). However, the sign of the coefficient is negative, which indicates that *CACR* declines when OI increases. This should not be the case if holders of CoCos perceive the instrument as equity and the results are thus inconclusive. Based on these findings, no further conclusions are made.

When adding more days around the earnings announcement dates, more noise is captured (Runesson, 2015[48]; MacKinlay, 1997[39]; Binder, 1998[8]; Sprenger, Sandner, Tumusjan & Welpe, 2014[51]). This is a possible explanation to why the results do not show statistical significance after the 3-day window, regarding the regression with country and quarter fixed effects. Also, when including country and quarter fixed effects as control variables, the results should be more robust. Taken together, since changes in LLP has a significant association with *CACR*, and significantly differ from changes in OI, the results confirm *H2* and reject *H1*. This concludes that holders of CoCos react significantly more negatively to changes in LLP compared to changes in OI.

4.3. Robustness test

The different regressions were all done with robust standard errors, to control for potential heteroscedasticity. Moreover, Table 5 displays a test of Pearson correlation, which does not indicate that there is any multicollinearity in the sample. This is confirmed by the VIF-test in Table 6, Panel C. Table 6, Panel B, presents the result of the Doornik-Hansen test, which shows no sign of multivariate normality. At last, the values of R^2 can be commented. The values are in general relatively low. However, the values are on average more or less similar to Papadopoulos and Marton's (2019) study. Therefore, we draw the conclusion that this is nothing that has a significant impact on the robustness of the test.

5. Discussion

Hypothesis 1 (*H1*) suggests that holders of CoCos will react to a greater extent to changes in OI than to changes in LLP, while Hypothesis 2 (*H2*) suggests that holders of CoCos will react to a greater extent to changes in LLP than to changes in OI. The results show that holders of CoCos react negatively to changes in LLP, and this reaction is significantly stronger than their reaction to changes in OI. These findings confirm *H2* and reject *H1* and holds true over a short earnings announcement window.

The literature shows that bond and equity investors react to financial information, particularly to earnings (Hayn, 1995[27]; Dechow, Ge & Schrand, 2010[17]; Papadopoulos & Marton, 2019[43]; Merton, 1974[42]; Elton et al., 2004[21]; Kothari et al., 2010[36]; Defond & Zhang, 2014[18]; Watts, 2003[54]; Plummer & Tse, 1999[47]; Easton et al., 2009[20]; Basu, 1997[3]). The fact that holders of CoCos react to information in the financial statement goes in line with this literature. However, research also suggests that bondholders and equity holders differ upon what kind of information they value the most. Overall, the conservatism literature claims that bondholders react more to bad news than good news, and they have a greater interest in probability of default (Elton et al., 2004[21]; Merton, 1974;[42] Kothari et al., 2010[36]; Defond & Zhang, 2014[18]; Watts, 2003[54]; Plummer & Tse, 1999[47]; Hayn 1995[27]). For the banking industry, LLP gives a strong signal of bad news and probability of default. Research shows that bondholders react more strongly to LLP, while stock holders react to a greater extent to OI (Papadopoulos & Marton, 2019)[43]. Holders of CoCos react significantly more negatively to changes in LLP compared to changes in OI, which suggests that they react in line with a bondholder (Papadopoulos & Marton, 2019)[43], and thus perceive the underlying economic substance of the financial instrument as a liability. These results line up with the findings of Ammann et al. (2017)[2], who suggest that the equity market perceive financing through CoCos as debt financing. However, the findings contradict other studies where the results instead point towards CoCos being perceived as equity (Liao et al., 2016[38]; Schmidt & Azarmi, 2015[50]; Marquard & Wiedman, 2005[40]; Patel et al., 1993[44]).

Moreover, due to the lack of specific guidance and a general clear rationale in IAS 32, the accounting for CoCos differs in practice (IASB, 2018)[31], and the banking industry often manage to classify them as equity (Fargher et al., 2019)[23]. The results of this study therefore suggest, as highlighted in the FICE DP (IASB, 2018)[31], that the accounting regulation of CoCos needs to be improved. The classification of CoCos as a liability, that is, in accordance with their economic substance, would provide more transparent information, reduce information asymmetry (Godfrey et al., 2010)[26] and create an accounting that is faithfully represented. The current balance sheet classification might be misleading to investors, as proven by previous research investigating compound financial instruments (Frischmann et al., 1995[24]; Cheng et al., 2003[12]; Terando et al., 2007[53]; Barth et al., 2013[5]).

However, our results both confirm and contradict earlier findings on the market perception of CoCos. Furthermore, former research on financial instruments that share characteristics of both debt and equity show contradicting evidence (Chan & Seow, 1997[11]; Cheng et al., 2003[12]; Kimmel & Warfield, 1995[35]; Cheng et al., 2007[13]; Cheng et al., 2011[14]). This might suggest that more comprehensive research need to be performed to state how to improve the accounting regulation of CoCos.

6. Concluding remarks

6.1. Conclusions

This study investigates the issue regarding accounting for financial instruments that share characteristics of both debt and equity, so called compound financial instruments, by examining how the market perceives CoCos. We seek to determine whether holders of CoCos perceive the financial instrument as liability or equity, to be able to add to the discussion on how they should be classified in the balance sheet. Research show that loan loss provisions (LLP) is a more relevant source of information for bond investors, while operating income adjusted for LLP (OI) is used to a greater extent by equity investors. We make use of these results by examining how holders of CoCos react to these two components of banks' income statements. The empirical findings show that holders of CoCos react to a greater extent to changes in LLP than to changes in OI. This holds true for a short window. The findings suggest that holders of CoCos react in line with a bond investor and thus perceive the financial instrument as liability. This indicates that the balance sheet classification of CoCos should be liability, to classify the financial instruments in accordance with their economic substance. To provide more transparent information, reduce information asymmetry and pave the way for an accounting with representational faithfulness, the accounting for CoCos needs to be improved.

6.2. Contributions

This study contributes to the FICE project and the current discussion on how financial instruments that share characteristics of both debt and equity should be classified in the balance sheet. Moreover, the study provides enhanced knowledge on how the market perceives CoCos, which adds to the stream of research in the liability/equity split area that examines the market perception of compound financial instruments. This kind of research is useful for standard setters, such as the IASB and the FASB. Also, to understand the economic substance of a financial instrument is vital to improve the representational faithfulness of the balance sheet.

6.3. Suggestions for future research

As mentioned in section 1, a limitation to this study is that the actual balance sheet classification of CoCos in the examined banks is not taken into consideration. Prior research shows different results when it comes to what impact the balance sheet classification of compound financial instruments has on analysts' judgements (Hopkins, 1996; da Costa, Neto & Da Silva; Clor-Proell, Koonce & White, 2016). A suggestion for future research is therefore to look deeper into the actual balance sheet classification and the impact this has on analysts and other market participants. Moreover, our results are only applicable on banks following IFRS. Thus, additional studies could be done including US GAAP banks as well, to possibly generalize the results. Also, research can be done when IAS 32 has been revised, to examine if the new classification approach leads to more transparent information and representational faithfulness.

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