

**Now or Never:
Using the Financial Crisis to Get Serious about Customer Equity in Financial Reporting**

*Bernd Skiera, Goethe University Frankfurt, skiera@skiera.de
Manuel Bermes, Goethe University Frankfurt, bermes@wiwi.uni-frankfurt.de
Lutz Horn, Goethe University Frankfurt, lutzhorn@gmx.de*

Abstract

Although securitization has become well known with the onset of the financial crisis, its use had been growing increasingly popular in diverse industries. Unknown securitization risks hinder the economy, but the move toward short-term profit realization, at the expense of long-term value creation, is also inherent to securitization. Current requirements for financial statements provide insufficient transparency about these effects. Marketing metrics such as customer equity, in the form of customer equity reporting (CER) and a newly developed customer equity sustainability ratio (CESR), could create more transparency in financial statements. In this empirical study of 38 banks in 10 different countries, the authors note the limited transparency about long-term value creation in financial statements, and apply the proposed reporting technique to Countrywide Financial Corporation to illustrate the usefulness of additional transparency.

Keywords: Customer Equity, Financial Reporting, Sustainability, Securitization, Financial Crisis

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1. Problem Definition and Aim of the Paper

The financial crisis currently disrupting the economic system and banking worldwide often gets blamed on securitization (Gorton 2008; Ryan 2008), an instrument that pools different assets with an inherent stream of future cash flows to support debt instruments, called asset-backed securities (ABS), and sells them to investors. Banks commonly use securitization to manage their portfolio risk and funding position by transferring loans and the credit risk of their loan portfolios to other investors (Ambrose, Lacour-Little, and Sanders 2005). In return, the banks do not hold the loans until their maturity in their own books but instead receive earnings from them directly at their present value (PV). That is, instead of following a "traditional" customer-oriented banking business model, called "buy and hold," these banks move toward an "originate and distribute" model.

Unfortunately, as the modern financial crisis has made clear, the inherent risk of ABS is fairly difficult to calculate and was underestimated by most market participants (e.g., Coval, Jurek, and Stafford 2009). As a consequence, prices for securities dropped dramatically, banks were forced to realize heavy write-downs on their asset bases, and they suffered huge losses and in some cases bankruptcies (for a more detailed description of the financial crisis, see Franke and Krahnert 2008; Gorton 2008). Researchers and practitioners therefore have demanded more transparency regarding asset quality and the inherent risk levels of both securitization and various banks (Franke and Krahnert 2008; Gorton 2008).

These risks are well known (if not fully solved), yet additional problems also result from moves toward short-term profit realizations, which are inherent to the securitization of loans and come at the expense of long-term value creation. The transformation of periodic loan payments into one down payment enables a bank to realize earnings immediately instead of doing so over the lifetime of the loan. Supported by accounting rules, managers do not need to make the consequences of securitization for long-term value creation transparent. Therefore, they have incentives to adjust the bank's earnings stream through securitization and reach personal goals, such as greater personal wealth (Dechow and Shakespeare 2006). And yet the problems that arise from such adjustments in customer management strategies and earning streams continue to be largely ignored in current discussions of the financial crisis (e.g., Coval, Jurek, and Stafford 2009; Franke and Krahnert 2008).

This article outlines the problems associated with a shift in earnings and proposes customer equity reporting (CER) and a new ratio, the customer equity sustainability ratio (CESR), as potential means to increase more transparency in financial statements. We emphasize the importance of reporting forward-looking marketing metrics in financial statements. Tuli, Bharadwaj, and Kohli (2010) suggest the disclosure of information about customer relationships in financial statements and consider "such disclosures [to] serve as signals about the credibility of marketing actions" (Tuli, Bharadwaj, and Kohli 2010). In this context, marketers can actively provide stakeholders with valuable information about the long-term value of a customer base. In addition, we argue that the reporting of more forward-looking marketing metrics might have reduced the devastating consequences of the current financial crisis. Furthermore, we empirically analyze the transparency of long-term value creation in the financial statements of 38 banks and apply our reporting technique, including the customer equity sustainability ratio, to the U.S. market leader in mortgage lending and origination, Countrywide Financial Corporation. With this study, we hope to motivate marketing researchers to take a more prominent role in transferring their knowledge about calculating the long-term value of the customer base to other areas, such as accounting and finance.

Furthermore, we build on a recent proposal by Wiesel, Skiera, and Villanueva (2008), who postulate that customer equity reporting can complement financial statements. They attempt to align customer management with corporate goals and investors' perspectives by requiring firms to monitor their performance with respect to their customer assets. In contrast, we focus specifically on securitization and its inherent earnings shift to highlight the dangerous incentives that securitization creates and support customer equity reporting as an effective means to detect its effects. Our proposed comparative ratio, the customer equity sustainability ratio, helps quantify the intensity of long-term value creation by establishing a connection between bank's financial statements and the forward-looking customer equity reporting.

2. Securitization

We define securitization as the pooling and repacking of a group of assets, such as loans, and the sale of tranches of this pool to new investors (Ryan 2008). Banks commonly sell a variety of financial products which provide the underlying loans for their securitization (Ketkar and Ratha 2008). They group the loan assets into different tranches. These tranches then can be priced and sold to new investors, who receive all cash flows from their tranche, which means they also confront any risks arising from the underlying loans (see Franke and Krahen 2008).

Not just banks and other financial institutions but virtually all firms can use securitization, though few industries do so as intensively as financial institutions. The only prerequisite is an underlying asset with future earnings that the firm can sell to investors—future telecommunications usage, future soccer game tickets, future electricity consumption, future tax assets, future health care receivables, or future royalties of intellectual properties (Ketkar and Ratha 2008). For example, the Denver Broncos used securitization to finance their new stadium. In this case, the ABS "is backed by about 4,000 stadium-related contracts, such as luxury box seats, club seats, a portion of concession fees and other cashflows" (Gregory 2002).

We concentrate on banks because they use securitization extensively. In Table 1, we depict a basic loan example to show the effects of securitization on the earnings stream (for comparable arguments, see Fabozzi, Davis, and Choudry 2006).

Table 1: Numerical Example of a Loan

Non-securitizing bank	Year 1	Year 2	Year 3	Year 4	Year 5	Sum
Interest income	\$5,000	\$4,000	\$3,000	\$2,000	\$1,000	\$15,000
Interest expense	-\$3,500	-\$2,800	-\$2,100	-\$1,400	-\$700	-\$10,500
Loan loss provisions	-\$500	-\$400	-\$300	-\$200	-\$100	-\$1,500
Net interest income	\$1,000	\$800	\$600	\$400	\$200	\$3,000
Non-interest income	\$0	\$0	\$0	\$0	\$0	\$0
Earnings	\$1,000	\$800	\$600	\$400	\$200	\$3,000
PV of earnings (as of 12/31/year 1)	\$1,000	\$727	\$496	\$301	\$137	\$2,660
Loan volume to customer (at beginning of year)	\$100,000	\$80,000	\$60,000	\$40,000	\$20,000	
Securitizing bank	Year 1	Year 2	Year 3	Year 4	Year 5	Sum
Net interest income	\$0	\$0	\$0	\$0	\$0	\$0
Non-interest income	\$2,660	\$0	\$0	\$0	\$0	\$2,660
Earnings	\$2,660	\$0	\$0	\$0	\$0	\$2,660
PV of earnings (as of 12/31/year 1)	\$2,660	\$0	\$0	\$0	\$0	\$2,660
Loan volume to customer (at beginning of year)	\$100,000	\$0	\$0	\$0	\$0	

In this example, we use a bank that issues one five-year loan volume of \$100,000 to a customer at the beginning of year 1, with an annual interest rate of 5% paid at the end of each year. The customer repays the loan linearly over its lifetime, so the effective loan volume reduces to \$80,000 in year 2, and so on. During the lifetime of the loan, the bank also receives

annual interest income of \$5,000 in year 1, \$4,000 in year 2, and so on. We assume an interest rate of 3.5% for the financial debt to refinance the loan issuance, resulting in interest expenses of \$3,500 in year 1, \$2,800 in year 2, and so on. We also deduct loan loss provisions, equal to .5% of the loan volume, to account for potential default of this customer. Although we are well aware that loan specifics like prepayments, deductions or servicing, and other costs might increase the complexity in practice, we avoid additional complexity for ease of exposition. In addition, we assume that earnings from annual redemption repay the corresponding financial debt. The remainder is distributed to shareholders.

The present value (PV) of total earnings is the sum of the yearly PV of earnings. With a discount rate of 10%, the bank realizes a positive but declining yearly PV, which for ease of exposition we value as of December 31 in year 1. As we show in Table 1, it equals \$1,000 for year 1, \$727 for year 2, and so on. In total, we derive a PV of earnings of \$2,660, which also represents the "fair value" (Barlev and Haddad 2003; Campbell and Shiller 1987; Ryan 2008). If this loan is the only product owned by this customer, the PV equals what is commonly known in marketing as customer lifetime value (CLV).

In the case of securitization, the bank generates the loan volume of \$100,000 at the beginning of year 1 but sells it to other investors. If these investors discount at the same rate (here, 10%), they pay the fair value of \$2,660 as non-interest income to the securitizing bank in year 1. For the following years 2 to 5 of the original loan lifetime, the securitizing bank receives no further earnings. Both banks realize a PV of total earnings of \$2,660; in this example, securitization neither creates nor destroys value but instead shifts the earnings from future periods to the current period. A proper evaluation of the increase in earnings in the current year from \$1,000 to \$2,660 requires transparency about the future decrease in earnings. In this example, both the seller (i.e., securitizer) and the buyer of the loans use the same discount rate, and the seller does not realize any additional return rate above the discount rate with the earnings brought forward. With these two conditions, securitization neither creates nor destroys value (Kothari 2006) but again just shifts the realization of value over time.

Reporting standards such as US GAAP and IFRS provide few opportunities to detect the earnings shift from long-term value creation toward short-term profit generation, because firms are not required to report quantitative outlooks of their future earnings (FASB 1996; FASB 2000; McCreevy 2008; Ryan 2008). Therefore, current regulations require banks to publish little information about their securitization activities; they might disclose securitization volume in the amendments of their financial statements, but it is not mandatory. The earnings derived from securitization may be registered as non-interest or interest income, which do not need to be separated from other non-interest or interest income positions. Therefore, the shift from creating long-term value to realizing short-term profits can be hidden well (Dechow, Myers, and Shakespeare 2009).

Securitization also affects marketers and their customers, because the lack of future earnings from current customers obliges the bank to sell more loans to future customers. Our empirical study shows that the average mortgage lifetime is 6.8 years; few customers need a new loan every year. The bank's marketers must concentrate on gaining new customers and intensify their customer acquisition efforts. In turn, they likely reduce their efforts to serve existing customers, which reduces cross-buying or repeat buying. This trend implies decreased customer satisfaction and negative word of mouth (e.g., Luo 2007). Too much pressure on customer acquisition also increases the chances of acquiring unprofitable customers (Cao and Gruca 2005; Lewis 2006; Reinartz, Thomas, and Kumar 2005; Thomas, Blattberg, and Fox 2004), a fact also recognized by research in finance: "As balance sheets expand, new borrowers must be found. When all prime borrowers have a mortgage but balance sheets still need to

expand, then banks have to lower their lending standards in order to lend to subprime borrowers. The seeds of the subsequent downturn in the credit cycle are thus sown" (Shin 2009).

3. Customer Equity Reporting and Securitization

A primary danger of securitization is that it enables securitizers to increase their short-term profits at the expense of long-term value. Therefore, reporting techniques should create more transparency about the consequences of securitization for future earnings. Customer equity reporting, recently introduced by Wiesel, Skiera, and Villanueva (2008), does so by reporting the value of the customer base (labeled customer equity) and its development over time. Similar to Wiesel, Skiera, and Villanueva (2008), we define customer equity (*CE*) as the sum of the customer lifetime value (*CLV*) of all of the firm's current customers *j*. If the total lifespan of a customer *j* is T_j , then *CLV* is simply the PV of customer *j*'s earnings ($Earn_{j,t}$) over time *t* (discounted at rate *i*):

$$(1) \quad CLV_j = \sum_{t=0}^{T_j} \frac{Earn_{j,t}}{(1+i)^t}$$

Customer Equity Sustainability Ratio (CESR)

We also propose the CESR as a new ratio to quantify the intensity of long-term value creation by establishing a connection between the bank's financial statements and forward-looking customer equity reporting. The CESR contrasts the future value of an existing customer base with current earnings, such that for an individual customer *j*, the future value is the PV of all earnings after the current year $t = 0$. Defining $CESR_j$ as the ratio of the PV of all future earnings to the corresponding *CLV* and rearranging it leads to:

$$(2) \quad CESR_j = \frac{\sum_{t=1}^{T_j} \frac{Earn_{j,t}}{(1+i)^t}}{\sum_{t=0}^{T_j} \frac{Earn_{j,t}}{(1+i)^t}} = \frac{CLV_j - Earn_{j,0}}{CLV_j} = 1 - \frac{Earn_{j,0}}{CLV_j}$$

Therefore, the CESR for all current customers is:

$$(3) \quad CESR = \frac{\sum_{j=1}^J \sum_{t=1}^{T_j} \frac{Earn_{j,t}}{(1+i)^t}}{\sum_{j=1}^J \sum_{t=0}^{T_j} \frac{Earn_{j,t}}{(1+i)^t}} = \frac{\sum_{j=1}^J CLV_j - \sum_{j=1}^J Earn_{j,0}}{\sum_{j=1}^J CLV_j} = 1 - \frac{\sum_{j=1}^J Earn_{j,0}}{\sum_{j=1}^J CLV_j}$$

If we define current earnings as $Earn_0 = \sum_{j=1}^J Earn_{j,0}$, we can rewrite Equation (3) as:

$$(4) \quad CESR = 1 - \frac{Earn_0}{CE}$$

In the case of non-negative earnings and positive *CE*, the CESR falls between 0 and 1, and a higher CESR indicates that the future value of the current customer base is rather high. A CESR of 0 exists when all earnings occur in the current year, as in our securitization example.

4. Empirical Studies

We want to show in our first empirical study that most banks do not deliver sufficient information about the use and economic impact of securitization in their financial statements. In our second empirical study, we apply our reporting technique to the former market leader in mortgage lending and origination in the United States, Countrywide Financial Corporation, to show that Countrywide made heavy use of securitization, which had a strong impact on its earnings, and that CER and CESR could have provided much more transparency.

Analysis of Securitization Transparency in Financial Statements

We analyze 38 banks in the most important banking markets in the United States and Europe to determine how much information they provide about securitization in their financial statements (i.e., annual and quarterly reports). The sample encompasses the two market leaders (measured by market capitalization) from 10 different countries as well as some randomly selected smaller banks and public institutions from these countries. As we show in Table 2, nearly all banks are involved in securitization, but few, especially in the United States, report the earnings that they realize separately. This makes it difficult, if not impossible, to evaluate the extent of the shift toward short-term profit realization inherent in securitization. In turn, it remains unclear which share of profit relates to the ongoing banking business and which part derives from the one-time effects of securitization.

Table 2. Information about Securitization from 38 Banks

Bank	Country	General information	Securitization volume	Securitization earnings	Interest income from other interest-bearing assets
Largest national banks					
Erste Bank	Austria	√	√		
Raiffeisen International Bank	Austria	√	√		
BNP Paribas	France	√	√		
Société Générale	France	√	√		
Deutsche Bank	Germany	√	√		
Commerzbank	Germany	√	√		
Allied Irish Bank	Ireland	√	√		
Bank of Ireland	Ireland	√	√		
Unicredit	Italy	√	√		
Intesa San Paolo	Italy	√	√		
ING Group	Netherlands	√	√		
Fortis	Netherlands	√	√		
Santander	Spain	√	√		
BBVA	Spain	√	√		
Credit Suisse	Switzerland	√	√	√	√*
UBS	Switzerland	√	√		
HSBC	UK	√	√		
Standard Chartered	UK	√	√		
JPMorgan Chase & Co	USA	√	√	√	√*
Wells Fargo	USA	√	√	√	√*
"Random selection" banks					
Bank Austria	Austria	√			
Comdirect	Germany	n.a.			
DAB Bank	Germany	n.a.			
Deutsche Postbank	Germany	√	√		
Hamburger Sparkasse	Germany	n.a.			
KfW	Germany	√	√		
LB Hessen-Thüringen	Germany	√	√		
ABN Amro	Netherlands	√	√		
Rabobank	Netherlands	√	√		
Zürcher Kantonalbank	Switzerland	n.a.			
Barclays	UK	√	√		
HBOS	UK	√	√		
Lloyds TSB	UK	√	√		
Northern Rock	UK	√	√		
RBS	UK	√	√	(√)	
Bank of America	USA	√	√	√	√*
Countrywide	USA	√	√	√	√*
Wachovia	USA	√	√		
√	Information is clearly available				
√*	Information can be derived directly from the data				
(√)	Information can be assumed from data				

Description of Countrywide Financial Corporation

We have collected and analyzed data on Countrywide who was the U.S. market leader in mortgage lending and origination between 2004 and 2007 for the years from 1998 to 2007. The results highlight the feasibility of customer equity reporting in a real-world setting and shows that Countrywide substantially shifted the realization of profits. For example, in 2002, CESR had a value of 0.210, but would have had a value of 0.763 if Countrywide had not performed securitization. This means that the future value of its earnings was less than one third of the value in the non-securitization case. Hence, we conclude that the customer equity sustainability ratio can better identify shifts in value realizations over time.

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