Bernd Skiera, Manuel Bermes, & Lutz Horn

Customer Equity Sustainability Ratio: A New Metric for Assessing a Firm's Future Orientation

Securitization is a remarkable financial instrument; it enables securitizers to increase their short-term profits at the expense of the long-term value of their customer base. This ability might be tempting for firms, especially because it does not need to be disclosed transparently to stakeholders. The authors show how their newly developed customer equity sustainability ratio (CESR) complements customer equity reporting and creates more transparency about the consequences of securitization for future earnings and the riskiness of the underlying business model. Their model compares the future value of an existing customer base with current earnings. In an empirical study of 38 banks in ten countries, the authors demonstrate the limited transparency of long-term value creation in financial statements. Next, they outline the adequacy of CESR for creating more transparency in empirical cases of Countrywide Financial Corporation and nine firms from nonbanking industries. They recommend that marketing should play a prominent role in providing stakeholders with substantial information about the long-term value of the customer base.

Keywords: customer equity, financial reporting, sustainability, securitization, financial crisis, customer equity sustainability ratio

The financial crisis currently disrupting the economic system and banking worldwide is often attributed to securitization (Ryan 2008), an instrument that pools assets with an inherent stream of future earnings to support debt instruments, called asset-backed securities (ABSs), for sale to investors (Greenbaum and Thakor 1987).[1] 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 (Santomero and Babbel 1997). In return, the banks do not hold the loans until maturity in their own books but instead receive earnings from them directly at their present value (PV).

Unfortunately, as the global financial crisis makes clear, the inherent risk of ABSs is difficult to calculate because of their frequent repackaging; most market participants grossly underestimated it (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 more detailed descriptions, see Demyanyk and Van Hemert 2009; Franke and Krahnen 2008).

These risks are well known, if not fully solved; however, additional problems result from moves toward short-term profit realizations that 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 the PV of earnings immediately rather than doing so over the lifetime of the loan.

Securitization is not limited to the banking industry. Airlines and sport clubs can securitize earnings from ticket sales that will occur over the next few years to realize the earnings in the present rather than spreading them over time. Although it remains particularly prevalent in banking, securitization enjoys great popularity in other industries such as telecommunications, utilities, and the music business; it is even used by national governments and other public institutions (Brinkworth 2004; Downey 1999; Ketkar and Ratha 2008).

Supported by accounting rules, managers do not need to make the consequences of securitization for long-term value creation transparent. They have incentives to adjust their firm's earnings stream through securitization and reach their own goals, such as greater personal wealth (Dechow and Shakespeare 2009). However, the problems that arise from such adjustments in customer management

[1]We use ABS to refer to the whole group of structured products, which can be classified into asset-backed commercial papers, mortgage-backed securities, and collateralized debt obligations.

Bernd Skiera is Chair of Electronic Commerce, Department of Marketing, Faculty of Business and Economics (e-mail: skiera@skiera.de), Manuel Bermes is a doctoral student, E-Finance Lab, House of Finance (e-mail: bermes@wiwi.uni-frankfurt.de), and Lutz Horn is a doctoral student, Retail Banking Competence Center, House of Finance (e-mail: lutzhorn@gmx.de), Goethe University Frankfurt. The authors thank Andreas Hackethal, Clemens Jochum, Wolfgang König, Jan Pieter Krahnen, Christian Leuz, Steffen Meyer, Anita Mosch, Philipp Schmitt, Christian Schulze, Thorsten Wiesel, seminar participants at the University of Technology Sydney and Maastricht University, and three anonymous *JM* reviewers for their valuable comments on earlier drafts of the article.

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strategies and earnings streams continue to be largely ignored in current discussions of the financial crisis (e.g., Coval, Jurek, and Stafford 2009; Franke and Krahnen 2008). Not surprisingly, metrics that allow for easily detecting shifts in earning streams are scarce.

This article outlines the problems associated with this shift in earnings and proposes customer equity reporting (CER) along with a new ratio, the customer equity sustainability ratio (CESR), as means to increase the level of transparency in financial statements. We emphasize the importance of reporting forward-looking marketing metrics in financial statements, thereby extending the role of marketing: It should supply firm stakeholders with substantial information about the long-term value of the current customer base (see also Joshi and Hanssens 2010; Tuli, Bharadwaj, and Kohli 2010). In line with Wiesel, Skiera, and Villanueva's (2008) recent proposal, which postulates that CER can complement financial statements, we argue that greater transparency, achieved by reporting more forward-looking marketing metrics, might have reduced the devastating consequences of the current financial crisis for banks and might lead to a suitable use of securitization in industries outside banking.

We begin by describing securitization, its advantages, and its disadvantages. Next, we show how CER and CESR can capture some of the effects of securitization previously neglected by first focusing on banking business and its extensive use of securitization. Then, we empirically analyze the transparency of long-term value creation in the financial statements of 38 banks in ten countries and apply our reporting technique, including CESR, to the former U.S. market leader in mortgage lending and origination, Countrywide Financial Corporation. We also explore industries outside banking and show, for nine securitizations of firms and institutions in diverse industries, how CESR can detect differences in the extent of shifts in earnings across time. We conclude with a discussion of the results.

Securitization

Basic Idea of Securitization

Securitization is best known as the pooling and repackaging of a group of assets (e.g., loans) and the subsequent sale of tranches, which are the new divisions of the group of assets classified by asset quality, of this pool to new investors (Ryan 2008; Santomero and Babbel 1997). For example, banks commonly sell a variety of financial products, from mortgages to student loans to credit cards to leasing claims, which provide the underlying loans for their securitization (Ketkar and Ratha 2008; Santomero and Babbel 1997). They transfer the loan assets for regulatory and accounting purposes into a separate business unit, called a special purpose vehicle (SPV), and group them into tranches (Greenbaum and Thakor 1987). Each tranche receives a rating from a rating agency, from senior (AAA to A rating) to equity (no rating/residuum). Then, these tranches can be priced and sold to new investors (Coval, Jurek, and Stafford 2009; Luo, Tang, and Wang 2009), who receive all earnings from the tranche they own, which means they also confront any risks arising from the underlying loans (see Franke and Krahnen 2008).

Not just banks and other financial institutions but virtually all firms and even state and national governments can and do use securitization. The main prerequisite to sell claims to investors is an underlying asset that currently is generating earnings or will generate them in the future (for further details, see Kendall 1996; Kothari 2006). A wide variety of assets from different industries can be used for securitization, such as future revenues from cellular phone contracts or electricity consumption, ticket sales from future soccer games, airline ticket sales, tax revenue receivables, and royalties of intellectual properties (Brinkworth 2004; Downey 1999; Ketkar and Ratha 2008). Prominent recent securitization transactions include musicians such as David Bowie, who issued the first music royalties future receivables securitization (Burke Sylva 1999); soccer teams such as Leeds United (United Kingdom), Tottenham Hotspurs (United Kingdom), and Schalke 04 (Germany), which have used securitization to fund their entire businesses (Brinkworth 2004); and U.S. football teams such as the Denver Broncos, which financed a new stadium by using securitization "backed by about 4,000 stadium-related contracts, such as luxury box seats, club seats, a portion of concession fees and other cash flows" (Gregory 2002, p. 6). Some banks helped Greece improve its short-term financial situation and hide its debt level by providing cash in return for Greece's government payments in the future, meaning that Greece has traded away its revenue from the rights of airport fees and lotteries (Story, Thomas, and Schwartz 2010).

Numerical Example to Outline the Effects of Securitization

Despite the widespread popularity of securitization, we concentrate on banks because loans provide a clear illustration of its effects. We depict a loan example to show the effects of securitization on the earnings stream (for comparable arguments, see Fabozzi, Davis, and Choudry 2006). In this example, we use a bank that issues one five-year loan volume of $100,000 to customers at the beginning of each year, with an annual interest rate of 5% paid at the end of each year. The customers repay the loan linearly over its lifetime, so the effective loan volume reduces to $80,000 in Year 2, $60,000 in Year 3, and so on. During the lifetime of the loan, the bank receives annual interest income of $5,000 in Year 1, $4,000 in Year 2, $3,000 in Year 3, 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, $2,100 in Year 3, and so on. We also deduct loan loss provisions, equal to .5% of the loan volume, to account for potential default of these customers. So the bank realizes a margin of 1% (5% – 3.5% – .5%) of the loan volume. Although specific terms of loans, such as prepayments, deductions, servicing, and other costs, might increase the complexity of this illustration in practice, we avoid additional complexity for ease of exposition. We also assume that annual redemptions repay the corresponding financial debt.

Table 1 includes the results for a non-securitizing bank, and Table 2 depicts the outcome for a securitizing bank. To show the time-shifting effects of securitization on the earnings of the bank in the second part of our example, we assume that from Year 8 onward, the bank does not issue any new loans and the existing loans expire. Until Year 7, expiring loans are permanently renewed by new issuances, and for ease of exposition we assume that the bank has reached a steady state, so that its total loan volume remains stable. The earnings of $3,000 in Year 1 comprise $1,000 from loans issued in Year 1, $800 from loans of the prior year (Year 0), $600 from the next to last year (Year –1), $400 from the remaining loans of Year –2, and $200 from those of Year –3. In Year 2, the bank issues new loans generating earnings of $1,000, earnings of loans from Year –2 to Year 1 decline by $200 each, and loans from Year –3 expire.

The bank can either distribute the obtained earnings as dividends to its shareholders (distribution case) or keep and reinvest them (reinvestment case). In the distribution case, the initial equity of $30,000 remains stable over time. Because earnings also are constant, the bank realizes a return on equity (ROE) of 10% each year. In the reinvestment case, we assume an annual return rate of the reinvestment of 10%, equivalent to the discount rate. The bank reinvests its earnings each year for a one-year period, repeated until the end of the loan contract, and does not distribute any earnings, so the earnings from previous years are permanently reinvested. For example, in Year 3, the bank can reinvest the sum ($6,300) of the earnings of the previous year ($3,000); the earnings of this year ($3,000), which are labeled as new reinvestment; as well as the earnings from the reinvestment in Year 2 (10% × $3,000 = $300). Its equity increases from $33,000 ($30,000 + $3,000) to $36,300 because of the new reinvestment ($3,000) and the earnings from reinvestment ($300). Thus, the bank's starting equity of $30,000 grows every year from the retained earnings from loans and reinvestment. The ROE still amounts to 10% because the relative increase in earnings equals the rise in equity.

We also consider a securitizing bank (Table 2) that decides, in Year 3, to transfer the whole loan volume and related earnings to new investors.[2] We assume the bank does so at fair market value, or the PV of earnings at the end of Year 3. Thus, the bank receives the earnings from the loan securitization of $6,397. This amount reflects the PV of new loans issued in Year 3, or $2,660, plus the PV of the remaining loans of Years –1 to 2, equal to $3,737 ([$800 + $600 + $400 + $200] + [$600 + $400 + $200]/1.1 + [$400 + $200]/$1.1^2$ + $200/$1.1^3$), that were securitized in Year 3 as well. However, in considering the PV of future years, the securitizing bank realizes only $2,660, equal to the PV of the new loans acquired and securitized each year ($1,000 + $800/1.1 + $600/$1.1^2$ + $400/$1.1^3$ + $200/$1.1^4$).

[2]We assume a direct origination and distribution of loans to new investors. However, an indirect sale through a bank-owned SPV, which is a separate legal entity, is common as a means to obtain various accounting reliefs, though it has no influence on the results in our example.

We again distinguish between distributing and reinvesting the bank's earnings. In the distribution case, equity remains constant at $30,000. The securitizing bank reaches an ROE of 10% in Years 1 and 2, which increases to 21.3% in Year 3 because of the shift to short-term profit realization through securitization. However, the increase in ROE in Year 3 comes at the expense of a lower ROE from Year 4 onward; it falls back to a steady-state level of 8.9%.

In Year 3, with earnings of $6,397, the securitizing bank surpasses the earnings of the non-securitizing bank by more than 100%. After Year 3, the securitizing bank earns only $2,660, whereas the non-securitizing bank continues to earn $3,000 per year, with more future earnings already contracted. Comparing ROE leads to a similar result: The non-securitizing bank shows a stable ROE of 10%, so the securitizing bank outperforms it in Year 3 with a ROE of 21.3% but then realizes only 8.9% from Year 4 onward.

In the reinvestment case, equity increases by the earnings realized from loans, securitization, and reinvestment. When securitizing in Year 3, ROE grows to 19.4% because of the shift from long-term value creation to short-term profit realization. However, one year later, ROE falls back to a lower level of 9.2% and rises only slowly to 9.4% in Year 7. Compared with the distribution case, the differences in ROE result from the reinvestment of earnings and the compound interest effects of this reinvestment.

In this example, both the seller (i.e., securitizer) and the buyer of the loans have equal assessments of the underlying (risky) earnings and use the same discount rate, and the seller does not realize a higher return rate than the discount rate through reinvestment. Thus, securitization neither creates nor destroys value but again simply shifts the realization of value over time (Kothari 2006). Differences in value accrue only when the seller and buyer differ in (1) their assessments of the underlying (risky) earnings or (2) their discount rates, because (1) and (2) yield to different PVs, or (3) the seller can use the earnings brought forward for reinvestment to realize a return rate greater than the discount rate. Still, securitizers increase their short-term profits at the expense of long-term value creation.

Treatment of Securitization by Reporting Standards

Reporting standards 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. The U.S. Financial Accounting Standards Board (FASB) introduced FAS 125 and FAS 140, which obligate firms to publish more detailed information about their securitization transactions and valuation principles (FASB 1996, 2000; Ryan 2008); comparable International Financial Reporting Standards call for less information about securitization in IAS 32 and 39 (McCreevy 2008). Therefore, current regulations require banks and firms, respectively, 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 noninterest or interest income, which do not need to be separated from

TABLE 1
Numerical Example of Loans of a Non-Securitizing Bank

Non-Securitizing Bank	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Noninterest income	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Net interest income from											
Loans issued in Year –3	$200										
Loans issued in Year –2	$400	$200									
Loans issued in Year –1	$600	$400	$200								
Loans issued in Year 0	$800	$600	$400	$200							
Loans issued in Year 1	$1,000	$800	$600	$400	$200						
Loans issued in Year 2		$1,000	$800	$600	$400	$200					
Loans issued in Year 3			$1,000	$800	$600	$400	$200				
Loans issued in Year 4				$1,000	$800	$600	$400	$200			
Loans issued in Year 5					$1,000	$800	$600	$400	$200		
Loans issued in Year 6						$1,000	$800	$600	$400	$200	
Loans issued in Year 7							$1,000	$800	$600	$400	$200
Net interest income	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$2,000	$1,200	$600	$200
Earnings	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$2,000	$1,200	$600	$200
Distribution Case											
Customer equity (as of 12/31)	$6,397	$6,397	$6,397	$6,397	$6,397	$6,397	$6,397				
Customer equity sustainability ratio (as of 12/31)	.531	.531	.531	.531	.531	.531	.531				
Loan volume to customers (at beginning of year)	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000				
Equity	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000				
Return on equity	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%				
Reinvestment Case											
Earnings from reinvestment	$0	$300	$630	$993	$1,392	$1,832	$2,315	$2,846	$3,331	$3,784	$4,222
New reinvestment	–$3,000	–$3,300	–$3,630	–$3,993	–$4,392	–$4,832	–$5,315	–$4,846	–$4,531	–$4,384	$42,222
Total result from reinvestment	–$3,000	–$3,000	–$3,000	–$3,000	–$3,000	–$3,000	–$3,000	–$2,000	–$1,200	–$600	$46,445
Customer equity (as of 12/31)	$6,670	$7,270	$7,930	$8,656	$9,455	$10,333	$11,299				
Customer equity sustainability ratio (as of 12/31)	.550	.546	.542	.539	.535	.532	.530				
Loan volume to customers (at beginning of year)	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000				
Equity	$30,000	$33,000	$36,300	$39,930	$43,923	$48,315	$53,147				
Return on equity	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%				

TABLE 2
Numerical Example of Loans of a Securitizing Bank

Securitizing Bank	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Noninterest income	$0	$0	$6,397	$2,660	$2,660	$2,660	$2,660	$0	$0	$0	$0
Net interest income from											
Loans issued in Year –3	$200										
Loans issued in Year –2	$400	$200									
Loans issued in Year –1	$600	$400									
Loans issued in Year 0	$800	$600									
Loans issued in Year 1	$1,000	$800									
Loans issued in Year 2		$1,000									
Loans issued in Year 3											
Loans issued in Year 4											
Loans issued in Year 5											
Loans issued in Year 6											
Loans issued in Year 7											
Net interest income	$3,000	$3,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Earnings	$3,000	$3,000	$6,397	$2,660	$2,660	$2,660	$2,660	$0	$0	$0	$0
Distribution Case											
Customer equity (as of 12/31)	$6,397	$6,397	$6,397	$2,660	$2,660	$2,660	$2,660				
Customer equity sustainability ratio (as of 12/31)	.531	.531	.000	.000	.000	.000	.000				
Loan volume to customers (at beginning of year)	$300,000	$300,000	$0	$0	$0	$0	$0				
Equity	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000				
Return on equity	10.0%	10.0%	21.3%	8.9%	8.9%	8.9%	8.9%				
Reinvestment Case											
Earnings from reinvestment	$0	$300	$630	$1,333	$1,732	$2,171	$2,654	$3,186	$3,504	$3,855	$4,240
New reinvestment	–$3,000	–$3,300	–$7,027	–$3,993	–$4,392	–$4,832	–$5,315	–$3,186	–$3,504	–$3,855	$42,404
Total result from reinvestment	–$3,000	–$3,000	–$6,397	–$2,660	–$2,660	–$2,660	–$2,660	$0	$0	$0	$46,645
Customer equity (as of 12/31)	$6,670	$7,270	$8,239	$5,568	$6,366	$7,245	$8,211				
Customer equity sustainability ratio (as of 12/31)	.550	.546	.147	.283	.310	.333	.353				
Loan volume to customers (at beginning of year)	$300,000	$300,000	$0	$0	$0	$0	$0				
Equity	$30,000	$33,000	$36,300	$43,327	$47,320	$51,713	$56,544				
Return on equity	10.0%	10.0%	19.4%	9.2%	9.3%	9.3%	9.4%				

other noninterest or interest income positions. Therefore, the shift from creating long-term value to realizing short-term profits can be hidden well (Dechow and Shakespeare 2009).

Advantages and Disadvantages of Securitization

Securitization offers several major advantages to firms (for an extended discussion, see Franke and Krahnen 2008). First, securitization helps banks manage the various risks of underlying loan portfolios. They can construct well-diversified investments and lower or even avoid risks by transferring them to other investors. In risk transfers, banks might also be able to realize profits if the sellers and buyers of loans maintain different evaluations of the fair value. Second, firms can attain stronger capital, funding, and liquidity positions through securitization because it enables them to turn illiquid assets, such as mortgages, into more liquid assets. Third, securitization supports banks in their efforts to fulfill regulatory requirements such as Basel II, because they no longer need to hold equity for securitized loans (Calem and LaCour-Little 2004). Fourth, the lower equity requirements for securitized loans increase ROE.

However, securitization also produces two major disadvantages. First, the frequent repackaging and splitting of ABSs into tranches make it difficult to determine the appropriate value of those securities. This topic appears in extensive discussions elsewhere, so we do not detail it here (see Coval, Jurek, and Stafford 2009; Luo, Tang, and Wang 2009). Second, the short- and long-term effects of securitization are not equally transparent. The result of the short-term effect, usually an increase in earnings, is clearly described in financial reports, but the corresponding decrease in long-term value is less obvious and, as we show in our empirical study, is not well reported by the vast majority of firms. The low transparency causes various problems, including those related to management compensation when variable payments are linked to short-term profits (Dechow, Myers, and Shakespeare 2010; Dechow and Shakespeare 2009).

Customer Equity Reporting and Securitization

Customer Equity Reporting

Customer equity reporting creates the required transparency by reporting the value of the customer base (i.e., customer equity) and its development over time. Blattberg and Deighton (1996) define "customer equity" (CE) as the customer lifetime values (CLV) of the firm's current customers j:

$$\text{CE} = \sum_{j=1}^{J} \text{CLV}_j. \tag{1}$$

If the total lifespan of a customer j is T_j, CLV is simply the PV of customer j's earnings ($\text{Earn}_{j,t}$) over time t (discounted at rate i):

$$\text{CLV}_j = \sum_{t=0}^{T_j} \frac{\text{Earn}_{j,t}}{(1+i)^t}. \tag{2}$$

Blattberg and Deighton (1996), Gupta, Lehmann, and Stuart (2004), Rust, Lemon, and Zeithaml (2004), and Rust, Zeithaml, and Lemon (2000) lay a foundation for a deeper understanding and wider acceptance of the CE approach in science and practice (see also Srinivasan and Hanssens 2009). As Wiesel, Skiera, and Villanueva (2008) indicate, CER extends this field of application by connecting CE to financial reporting. We outline an opportunity to define CE more narrowly than Wiesel, Skiera, and Villanueva do for firms in industries with high shares of contracted business, such as banking, telecommunications, and electricity. In this contractual setting, in general, customer relationships span several years, and future earnings can be projected reliably because they are contractually assured. We consider only contracted future earnings for our calculation of CLV and CE (unless noted otherwise).

Customer Equity Sustainability Ratio

We propose the CESR as a new ratio to quantify the intensity of long-term value creation and establish a connection between a firm's financial statements and forward-looking CER. 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 leads to the following:

$$\text{CESR}_j = \frac{\sum_{t=1}^{T_j} \frac{\text{Earn}_{j,t}}{(1+i)^t}}{\sum_{t=0}^{T_j} \frac{\text{Earn}_{j,t}}{(1+i)^t}} = \frac{\text{CLV}_j - \text{Earn}_{j,0}}{\text{CLV}_j} = 1 - \frac{\text{Earn}_{j,0}}{\text{CLV}_j}. \tag{3}$$

Therefore, the CESR for all current customers is

$$\text{CESR} = \frac{\sum_{j=1}^{J}\sum_{t=1}^{T_j} \frac{\text{Earn}_{j,t}}{(1+i)^t}}{\sum_{j=1}^{J}\sum_{t=0}^{T_j} \frac{\text{Earn}_{j,t}}{(1+i)^t}} = \frac{\sum_{j=1}^{J} \text{CLV}_j - \sum_{j=1}^{J} \text{Earn}_{j,0}}{\sum_{j=1}^{J} \text{CLV}_j} = 1 - \frac{\sum_{j=1}^{J} \text{Earn}_{j,0}}{\sum_{j=1}^{J} \text{CLV}_j}. \tag{4}$$

If we define current earnings as $\text{Earn}_0 = \Sigma_{j=1}^{J} \text{Earn}_{j,0}$, we can rewrite Equation 4 as follows:

$$\text{CESR} = 1 - \frac{\text{Earn}_0}{\text{CE}}. \tag{5}$$

In the case of nonnegative earnings and positive CE, the CESR falls between 0 and 1. A higher CESR indicates that the future value of the current customer base is high. A CESR of 0 implies that all earnings occur in the current year, as in our securitization example, whereas a CESR of 1

presumes that all earnings will be realized in the future, with no current earnings.

Numerical CER and CESR Example

To explain the relevance of CER and CESR in more detail, we adapt the concept to our numerical example in Tables 1 and 2. The non-securitizing bank keeps issuing loans at an annual volume of $100,000 and realizes earnings of $3,000 from the loans each year. In the distribution case, annual CE is $6,397, or the PV of all current ($3,000) and future, already contracted earnings ($3,397 = $2,000/1.1 + $1,200/$1.1^2$ + $600/$1.1^3$ + $200/$1.1^4$). The CESR is .531 (1 – $3,000/$6,397). The bank receives 47% ($3,000/$6,397) of its contracted earnings in the current year and 53% ($3,397/$6,397) in the future. In the securitization case, the bank realizes all future earnings (from Year 3 onward) immediately, so CE from Year 4 onward decreases to $2,660. Thus, the CESR drops from .531 to 0 (1 – $2,660/$2,660).

In the reinvestment case, the CE of the non-securitizing bank is $6,670 in Year 1, which comprises the PV of all current and future loan-related earnings of $6,397 and the PV of the current earnings in Year 1 reinvested for one year at a 10% return rate ($273 = [$3,000 × .1]/1.1). The reinvestment gains raise CESR to .550 compared with the distribution case. In Year 7, a CESR of .530 derives from the current earnings from loans ($3,000) and reinvestment ($2,315) and from the PV of future earnings from loans ($3,397) and reinvestment ($2,587), or .530 = 1 – ($3,000 + $2,315)/($3,000 + $2,315 + $3,397 + $2,587).

Again, the values of the securitizing bank differ from those of the non-securitizing bank. When securitizing in Year 3, CESR drops to .147 because all future earnings from securitization ($6,397) are realized immediately along with the reinvestment gains ($630). Only the reinvestment generates future earnings ($1,212 = $1,333/1.1). Until Year 7, CESR increases to .353 because gains from reinvestment rise but earnings from securitization remain constant. Note that CESR also reflects the investment horizon of the reinvestments, which is one year in our example. If this investment horizon was five years, it would correspond to the investment period of the (five-year) loans; therefore, the time horizon of both investments would be the same.

The major advantage of CESR is that it creates more transparency and highlights, in a single metric, whether firms increase their current earnings at the expense of their long-term value. Comparing the distribution with the reinvestment case for the non-securitizing and securitizing bank reveals an additional strength of CESR: If the bank chooses to keep and reinvest its earnings from loans and securitization, the bank concurrently fosters its future earnings position, and CESR increases.

Empirical Studies

Aim

First, we focus in our empirical studies on banking because of its extensive use of securitization. We determine whether banks provide sufficient information about the use of securitization to make their economic impact transparent. Then, we apply our reporting technique to the former market leader in mortgage lending and origination in the United States, Countrywide Financial Corporation, which made heavy use of securitization, and we show that CER and CESR could have provided much more transparency. Next, for nine securitizations of firms and institutions in diverse industries, we show that CESR can detect differences in the extent of the shift in earnings across time.

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 includes two market leaders (measured by market capitalization) from ten countries and some randomly selected smaller banks and public institutions. These banks offer wide service portfolios to customers to originate sufficient loan volumes for securitization. As we show in Table 3, nearly all banks are involved in securitization, but especially in the United States, few report the earnings that they realize separately. Instead, most banks follow the opportunity provided by current reporting standards and sum their "real interest earnings" plus "securitization earnings" as total interest income. This summary 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 what share of profit relates to the ongoing banking business and which part derives from the one-time effects of securitization.

Description of Countrywide Financial Corporation

Of this data set, we choose Countrywide for our detailed analysis because it fulfills our information requirements about securitization and other interest-bearing assets. In addition, Countrywide was the U.S. market leader in mortgage lending and origination between 2004 and 2007 (Countrywide Financial Corp. 2008). Because of its heavy engagement in subprime mortgage–backed security transactions and the debt market turbulence of the financial crisis, Countrywide needed a rescue from Bank of America in February 2008 (Countrywide Financial Corp. 2008) and no longer publishes its own financial statements.

Analysis of Countrywide Financial Corporation

To apply CER and CESR to Countrywide, we make a few assumptions and calculations to project future earnings. The contracted loans generate net interest income and net loan servicing fees. We assume that loans are amortized linearly and that contracted earnings are realized over the loans' lifetimes. We also assume no further earnings from insurance premiums and other business after 2007 and adopt the distribution and reinvestment policy of Countrywide.

In Table 4, we provide the resulting CE and CESR for 1998–2007 for the actual business of Countrywide, which includes securitization (labeled "Securitization Case"). The increase in CE from $2.567 billion in 1998 to $20.151 billion in 2006 may be affiliated with higher loan volumes origi-

TABLE 3
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	United Kingdom	√	√		
Standard Chartered	United Kingdom	√	√		
JPMorgan Chase & Co.	United States	√	√	√	√*
Wells Fargo	United States	√	√	√	√*
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	√	√		
Landesbank Hessen-Thüringen	Germany	√	√		
ABN Amro	Netherlands	√	√		
Rabobank	Netherlands	√			
Zürcher Kantonalbank	Switzerland	N.A.			
Barclays	United Kingdom	√	√		
HBOS	United Kingdom	√	√		
Lloyds TSB	United Kingdom	√	√		
Northern Rock	United Kingdom	√	√	(√)	
RBS	United Kingdom	√	√		
Bank of America	United States	√	√	√	√*
Countrywide	United States	√	√	√	√*
Wachovia	United States	√	√		

Notes: √ = Information is clearly available, √* = Information can be derived directly from the data, (√) = Information can be assumed from data, and N.A. = not available.

nated and sold, longer mortgage lifetimes within the servicing portfolio, or higher interest margins from the remaining business. Regardless of the cause, Countrywide created additional value for the future in 2006. The subsequent intense drop in earnings appeared in the 2007 CE of $9.647 billion, when the decreasing U.S. mortgage business reduced both total earnings and CE by approximately 50% in response to lower income levels and higher loan loss provisions.

In contrast to the immense fluctuations in CE from 1998 to 2007, CESR remained relatively stable, with values of .291 in 1998 and .372 in 2007. In other words, the earnings structure was not affected by the economic downturn, even when the business model suffered serious harm. Countrywide, with a CESR of .372 in 2007, still realized 62.8% of the earnings that it originated in the same year but only 37.2% in subsequent years. Because the average mortgage lifetime is 6.8 years, we believe it is fair to assert that Countrywide aimed to realize short-term profits.

Because we want to demonstrate that CER and CESR could have depicted the realization of short-term profits at the expense of long-term value creation at Countrywide, we ran a counterfactual analysis (labeled "Non-securitization Case" in Table 4) in which we examined what would have happened had Countrywide not securitized at all. In this analysis, CE and CESR would have increased strongly. The most extreme difference would have occurred in 2002, when 79.0% of Countrywide's CE was immediately realized, but that value would have been just 32.7% in the securitization case. (For further details on these calculations, see Web Appendix A at http://www.marketingpower.com/jmmay11.)

TABLE 4
Countrywide Earnings Structure

A: Countrywide: Securitization Case (Actual Business)										
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Originate and Distribute Business										
Earnings on sale of mortgage loans and securities	699,433	557,743	611,092	1,498,812	3,377,065	5,541,539	4,386,536	4,300,579	4,897,771	2,220,164
Earnings on sale of other loans and securities	623,531	406,458	398,544	103,178	94,153	345,897	455,546	561,201	784,076	214,559
Total earnings, originate and distribute business	*1,322,964*	*964,201*	*1,009,636*	*1,601,990*	*3,471,218*	*5,887,436*	*4,842,082*	*4,861,780*	*5,681,847*	*2,434,723*
Buy and Hold Business										
Net interest income	66,764	93,933	10,678	331,877	792,230	1,359,390	1,965,541	2,237,935	2,688,514	587,882
Net loan servicing fees	241,817	551,723	584,024	–2,146	–865,752	–463,050	465,650	1,493,167	1,300,655	909,749
Net insurance premiums earned	12,504	75,786	274,039	316,432	561,681	732,816	782,685	953,647	1,171,433	1,523,534
Other	175,363	202,742	195,462	248,506	358,855	462,050	510,669	470,179	574,679	605,549
Total earnings, buy and hold business	*496,448*	*924,184*	*1,064,203*	*894,669*	*847,014*	*2,091,206*	*3,724,545*	*5,154,928*	*5,735,281*	*3,626,714*
Total earnings	*1,819,412*	*1,888,385*	*2,073,839*	*2,496,659*	*4,318,232*	*7,978,642*	*8,566,627*	*10,016,708*	*11,417,128*	*6,061,437*
Customer equity	2,567,495	3,604,128	3,753,248	4,174,750	5,468,867	12,087,915	13,868,776	18,195,139	20,151,106	9,646,673
Customer equity sustainability ratio	.291	.476	.447	.402	.210	.340	.382	.449	.433	.372
Securitization ratio	58.9%	65.3%	72.1%	95.5%	95.9%	86.1%	89.4%	82.5%	86.1%	90.4%
Return on equity	15.3%	15.2%	11.6%	12.7%	18.2%	35.8%	23.9%	21.9%	19.7%	–4.9%
Nonprime loans as a percentage of total loan production	3.18%	2.69%	6.23%	4.50%	3.74%	4.56%	10.85%	8.94%	8.67%	4.09%
Delinquent mortgage loans as a percentage of total loan production	3.91%	3.55%	11.30%	14.42%	14.41%	12.46%	11.29%	15.20%	19.03%	27.29%

B: Countrywide: Non-Securitization Case (Counterfactual Analysis)										
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Total earnings	*1,307,973*	*1,645,620*	*1,900,767*	*1,422,166*	*2,459,488*	*5,539,118*	*8,453,218*	*10,656,583*	*11,859,540*	*8,304,510*
Customer equity	2,567,495	4,166,711	4,639,131	5,339,600	7,517,683	16,039,134	20,618,857	25,532,604	27,518,455	17,264,104
Customer equity sustainability ratio	.491	.605	.590	.734	.673	.655	.590	.583	.569	.519

Notes: Amounts listed are in thousands of U.S. dollars.

Application of the CESR to Industries Outside Banking

Although securitization is most commonly used in banking, it enjoys great popularity in many other industries as well. Few of these firms provide sufficient information to illustrate the shift from long-term value creation to short-term profit realization either. In Table 5, we provide an overview of nine securitizations from a wide range of industries, including three state governments and several nonprofit organizations, which provide enough information to calculate the effect of securitization on changes in CESR. (For more details on the calculations of securitization cases in industries outside banking, see Web Appendix B at http://www.marketingpower.com/jmmay11.)

According to Table 5, the transaction volume ranged from several million to billions of U.S. dollars, and securitization appears in diverse settings. The most remarkable result is that the effects of securitization on changes in CESR differ across the nine securitizations and hardly correlate with transaction volume. For example, the largest securitization of $1.8 billion, for EDF Group, diminished

TABLE 5
Securitization in Industries Outside Banking

Reference	Firm or Institution	Transaction Type	CESR Without Securitization	CESR with Securitization
Burke Sylva (1999)	David Bowie	In January 1997, David Bowie raised $55 million from the issue of ten-year asset-backed bonds, with collateral consisting of future royalties from 25 albums that he recorded before 1990.	(1997): .911	(1997): .230
Campbell and Hashimoto (2003)	Korean Air Lines	Korean Air Lines securitized 2003 future receivables from the sale of its tickets on routes between Japan and Korea worth ¥27 billion ($242 million) for a period of 36 months.	(2003): .833	(2003): .825
EDF Group (2003)	EDF (Electricité de France)	In 1999, EDF transferred receivables of €1.1 billion (US$1.2 billion in 1999) of employees' housing loans to the Electra mutual securitization fund. Since the end of 2000, EDF has transferred future trade receivables of energy supply contracts to a mutual securitization fund, reaching an amount of €2.1 billion ($1.8 billion in 2001) by 2001.	(1999): .908 (2001): .882	(1999): .905 (2001): .876
Everton Football Club (2002)	Everton FC (United Kingdom)	In 2002, Everton FC (UK soccer club) signed a securitization agreement serviced by future season ticket sales and match-day ticket sales. The £30 million ($45 million) loan must be repaid with the interest charge over a period of 25 years.	(2002): .989	(2002): .958
FIFA (2006)	FIFA	FIFA, world soccer's governing body, raised $420 million through a bond deal in 2001, using expected receipts of $536 million from the 2002 World Cup in Japan and South Korea and the 2006 World Cup in Germany as collateral.	(2001): .943	(2001): .876
Armstrong (2009)	Keele University (United Kingdom)	Keele University (UK) securitized future student housing income worth £55.4 million (US$83.8 million) to finance refurbishments of the student residences and repay existing debt.	(2000): .938	(2000): .891
Kasprak (2002)	State of Alaska	Beginning in July 2001, Alaska used 40% of the tobacco settlement revenue to get an infusion of cash to build, rehabilitate, and remodel schools. The 2001 legislature passed in addition a law to securitize an additional 40% of the settlement revenue so that the transactions together securitized 80% of the tobacco settlement revenue.	(2001): .906	(2001): .181
Kasprak (2002)	State of South Carolina	South Carolina passed legislation to securitize its MSA settlement dollars through 2018. The state established four funds to develop its water and wastewater infrastructure, compensate individuals for losses in tobacco production (25%), and fund a variety of health care programs and services (75%).	(2001): .906	(2001): .104
Kasprak (2002)	State of Wisconsin	Wisconsin sold $1.54 billion of bonds backed by state appropriations to refinance debt issued by Badger Tobacco Asset Securitization Corp.	(2001): .915	(2001): 0

CESR only from .882 to .876, and one of the smallest securitizations of $242 million, for Korean Air Lines, led to a comparable drop in the size of CESR. In contrast, the securitizations of David Bowie and the State of Wisconsin both prompted drops of CESR from approximately .900 to less than .250.

In summary, although securitization is widespread in banking and prominent in the context of the financial crisis, it also is used commonly outside banking business. The diversity of firms and institutions indicate that securitization is applicable in many settings. Although we acknowledge that the lack of transparency requires strong assumptions about the missing information in some of the securitization cases in Table 5, CESR describes well how strongly the earnings shifted over time.

Discussion and Conclusion

Discussion of Customer Equity Sustainability Ratio

Our empirical results illustrate that many banks and firms fail to provide sufficient transparency about their securitization activities, which makes it difficult, if not impossible, to evaluate which earnings come from ongoing business and which result from the one-time effects of securitization. Unfortunately, current reporting standards provide limited means to detect such behavior because firms are not required to report future earnings. Our empirical studies show that CER and the newly developed CESR provide more transparency and emphasize that firms that make extensive use of securitizations should increase their short-term profits at the expense of the long-term value of their customer base. As forward-looking marketing metrics, CER and CESR add another perspective to backward-oriented accounting and reporting practices, which provide mainly historic information. We argue that marketing researchers have accumulated enough knowledge in the past decade to determine future values (e.g., by calculating CLV, CE). Ignorance of future earnings is no longer justified, and marketing academics should lead the field in the drive to consider future earnings in financial reporting. Such reporting techniques may also hasten marketing's reentry into the boardroom.

Comparison of Customer Equity Sustainability Ratio with Other Performance Ratios

As a new key ratio, CESR requires comparisons with well-established performance ratios, such as ROE and return on risk-adjusted capital; efficiency ratios, such as the cost income ratio; and productivity ratios, including economic value added.[3] These ratios all use historic data and consider only the current level of a firm's profit or earnings, which means they neglect a possible shift from future (i.e., long-term) value creation to short-term profit realization. With securitization, the ratios exhibit better values in the respective year than they would otherwise because short-term profits decrease cost–income ratio and increase ROE, return on risk-adjusted capital, and economic value added. In contrast, securitization lowers CESR immediately and provides stakeholders with a reliable indicator that the firm has moved from long-term value creation to short-term profit realization.

Another contribution of CESR becomes obvious when we compare it over time with the development of earnings, CE, ROE, and the securitization ratio (i.e., proportion of the securitized loan volume to total loan volume in a particular year) of Countrywide. Except for 2007, earnings and CE increased constantly, suggesting a successful business and value-creation process. In this empirical case, ROE would increase only after the securitization intensity had risen and then would return to its former levels. Furthermore, ROE could increase in response to other determinants, such as higher issued loan volumes, greater efficiency, and better equity structures. Therefore, a high ROE value can, but does not necessarily, substantiate heavy securitization engagement or short-term profit realizations.

To determine the relationship between the securitization ratio and CESR, we use the results from our empirical study of Countrywide, which reveal an insignificant correlation of –.241 (p = .503, n = 10). This outcome indicates the securitization ratio cannot substitute for CESR. Although the changes in the securitization ratio point to a modification in the securitization strategy of Countrywide, it cannot indicate how much contracted business still gets realized in upcoming years, because this ratio usually measures the share of loans securitized in one particular year. Moreover, securitization ratios do not distinguish the case in which a firm distributes the earnings from securitization to its shareholders from one in which it reinvests these earnings and thus retains them in the firm.

As an early warning system, CESR translates information into an earnings-related metric and includes earnings from nonsecuritization businesses. At the moment of securitization, CESR instantly declines, alerting stakeholders to the firm's short-term profit realization. Furthermore, CESR enables stakeholders to recognize the firm's distribution or reinvestment strategy, as we show in our example. Information about developments in the firm's shift from long-term value creation to short-term profit realization and the comparisons with the values of other firms thus provide strong advantages. In particular, this ratio condenses important information without losing content and without limits on its applicability to a wide range of businesses. Legal and regulatory restrictions and the effort to keep competitive advantages have hindered firms from publishing a large pool of data on its future orientation, supporting the application of CER and CESR.

Relationship Between Customer Equity and Customer Equity Sustainability Ratio

To deliver the necessary level of transparency, firms should report both CE and CESR and grant stakeholders insights

[3]Return on risk-adjusted capital = net income/allocated risk capital; this can be used to compare projects or investments under consideration on the basis of their implied risk profile. Cost income ratio = operating expenses/operating income—that is, the expenses needed to realize an income of $1. Economic value added = net operating profit – (capital × cost of capital); economic value added was developed to measure the real surplus a company generates in a specific period from an appropriate return on the capital invested.

into the value of their current customer base and the extent of their long-term value creation. As we highlight in Figure 1, a high CE value indicates a strong customer base, which is always better than a weaker one. In contrast, CESR indicates whether the firm pursues long-term value creation or short-term profit realization. We recognize explicitly that CESR has no per se optimal value and leaves normative conclusions up to stakeholders. For example, if the firm is able to attract investors that are willing to pay a price above the fair value of the underlying loans, the sale is beneficial for the firm and its stakeholders even though securitization reduces CESR. The reverse holds if buyers are only willing to pay a price that is lower than the value for the seller. Still, if a firm with low values of CE and CESR reports high earnings for the current year, stakeholders should recognize its weak customer base and drop in future earnings if the firm cannot acquire enough valuable new customers or generate more business with its current customers.

Even if sellers and buyers agree on the fair value of securities, extreme values of CESR could describe the best case for a firm under special circumstances. For example, a CESR of 0 can be the most desirable for a firm with liquidity needs that securitizes its entire future earnings to bridge the liquidity gap and likely prevent insolvency. For a project firm to develop and operate an office building with some lease contracts already signed at construction start, in the first years of development, CESR will be 1 because no earnings occur until the building is fully operational.

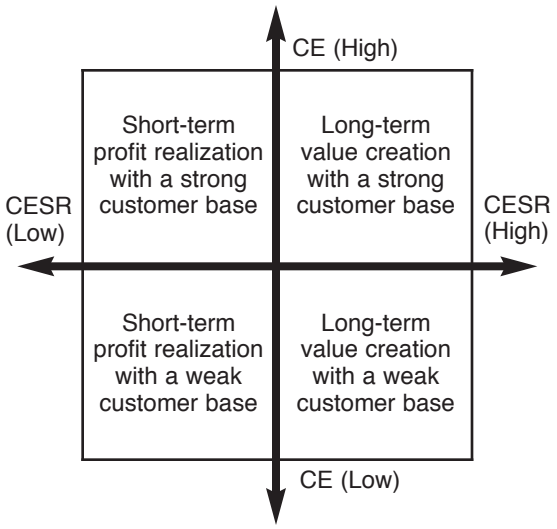
Thus, there are no general critical values of CESR per se because CESR is business specific. However, stakeholders should be alerted if their firm's CESR is fundamentally lower than the CESR in the firm's peer group and be aware that their firm is focusing on short-term profit realization. In addition, if the firm's CESR continuously declines over time, stakeholders should seriously consider a firm's intended shift from long-term value creation to short-term profit realization. Moreover, it is necessary to exercise caution if huge increases in compensation or large dividends go along with strong declines in CESR.

Limitations and Further Research

Our study is subject to some limitations that should prompt further research. First, the banking industry is complex, though we focus on simple standard loans in our example. Therefore, further research should identify the implied earnings structure of more complex products and business transactions so that CER and CESR can be implemented in diverse industries.

Second, the aim of this article is to present CESR as a new metric and outline its benefits in several empirical studies. Further research should observe how regulatory authorities, particularly in the financial industry, can best establish obligations to publish CER and CESR. Securitizations can have a dramatic impact on variable payments in management compensation if these are linked to short-term profits. Further research could more strongly analyze how CER and CESR can help develop more appropriate compensation plans and better disseminate information about managers' long-term value creation efforts.

FIGURE 1
Relationship Between Customer Equity (CE) and Customer Equity Sustainability Ratio (CESR)



Third, the quality of CER and CESR crucially depends on good forecasts, particularly in industries with high shares of noncontractual business. Marketing researchers have developed powerful methods to accommodate the greater amount of uncertainty in such situations (e.g., Reinartz and Kumar 2000), but the influence of such methods on current reporting standards is still limited. Determining the value of at least half of the nine securitizations displayed in Table 5 requires profound knowledge of the firm's ability to further market the underlying products; however, currently, marketing scholars seem to play only a minor role in determining the value of these securitizations. Thus, future studies could outline in more detail how current marketing knowledge could be used to increase the quality of forecasts and determine the value of these securitizations more accurately.

Fourth, current reporting standards already apply forward-looking information and develop accounting forecasts based on future earnings, such as the fair values of goodwill and financial assets. External auditors assess uncertainty and reliability, limiting the space for managerial arbitrariness and opening the floor to our reporting technique. Therefore, further research should examine if CER and CESR require more detailed rules to reduce the risk of managerial arbitrariness.

Fifth, securitization is likely to affect marketers and their customers, as we illustrate for a bank, though the effects hold equally for other firms. The lack of future earnings from the securitized loans of current customers obliges a bank to intensify its customer acquisition efforts and sell more loans to ensure that future earnings do not decrease, in particular if it distributes earnings to its shareholders. However, too much pressure on customer acquisition is likely to also increase the chances of acquiring unprofitable and high-risk customers (Cao and Gruca 2005; Reinartz, Thomas, and Kumar 2005), a factor that finance research

also recognizes: "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, p. 310). Further research could provide stronger support for this speculative, albeit likely, statement.

In summary, the lack of transparency in current financial reporting about the long-term effects of securitization is unacceptable. Customer equity reporting and the CESR provide more transparency to stakeholders and demonstrate the financial stability of banks and firms. Perhaps CER and CESR could have helped avoid some of the challenges of the current financial crisis; more important, perhaps they can provide insights into how investors and firms can be supported in their attempts to prevent the next one. In any case, marketing should not leave the field to finance and accounting; instead, it should emphatically assert its claim and provide stakeholders with substantial information about the long-term value of the customer base.

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