Insurance Acquisition Costs: Capitalizing Versus Expensing

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Abstract

This article examines whether the capitalization–amortization or the direct-expensing method for insurance acquisition costs and commissions better reflects the economic substance. We find that both the currently capitalized–amortized acquisition costs and the as-if asset balance of expensed commissions are positively associated with the market value of equity, and are closely related to the level and volatility of subsequent insurance premiums. Results also show that when explaining the market value of equity, the insurance commission is significantly negative if capitalized and amortized, but is insignificant if directly expensed. The authors are the first to examine how the insurance acquisition costs and commissions are related to subsequent economic benefits, and our results are consistent with IFRS 17 under which the acquisition costs shall not be immediately expensed.

Keywords

insurance acquisition cost, IFRS 4, IFRS 17, capitalization, expensing

Introduction

Insurance firms often incur significant costs in selling, underwriting, and initiating a new insurance contract, and these costs are commonly referred to as ''acquisition cost.''[1] This cost usually consists of commissions and costs such as underwriters' salaries and benefits, inspection and examination costs, and some fixed costs related to underwriting activities (Nissim, 2010). Substantial acquisition costs are typically incurred during early policy years to maintain or expand business, and commissions, which constitute one of the primary components of acquisition costs, are used as an incentive tool and set at very high levels ranging from 5% to over 100% of the premiums.[2] Under current U.S. GAAP (generally accepted accounting principles), some of the acquisition costs are capitalized and charged to expenses using a systematic approach (i.e., being amortized), whereas some are directly expensed when incurred. The capitalized–amortized commissions and other acquisition costs are commonly known as deferred acquisition costs (DAC) and are shown as an

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intangible asset. By contrast, the expensed commissions are presented separately as an expense in the income statement, whereas the expensed acquisition costs other than commissions are presented in combination with other operating expenses. This study aims to examine the value relevance of DAC and the directly expensed commissions.[3]

This issue is important at least for two reasons. First, theoretically, to reflect correct profit margin, revenues and expenses associated with such acquisition costs should be presented over the coverage period[4] in line with the pattern of services provided under the contract, rather than when the costs are incurred. Accordingly, the direct-expensing method may not be fully reflective of economic reality. Because many insurance policies would be in force over a fairly long period of time, reflecting correct periodic profit margin is particularly emphasized by insurers, as indicated by Klumpes (2002), which documents that the U.K. and Australian life insurers provide information about future profit expectations by voluntarily reporting the present value of actuarially calculated earnings. Second, as will be detailed in ''Institutional Backgrounds and Development of Hypotheses'' section, IASB (International Accounting Standards Board) and FASB (Financial Accounting Standards Board) have varying viewpoints regarding the capitalization criteria applied to insurance acquisition costs, and the commissions expensed by U.S. insurance firms are very likely to meet the capitalization criteria of IASB. Hence, our research has direct policy implications. Notably, although we agree that the insurance acquisition cost could be recognized as an intangible asset, the intangible asset literature does not appear to address the issue that IASB and FASB have varying capitalization criteria. In fact, many studies that extensively discuss issues related to intangible assets even do not mention acquisition cost at all (Barth, Kasznik, & McNichols, 2001; Brown & Kimbrough, 2011; Gu & Wang, 2005; Jones, 2011; Matolcsy & Wyatt, 2006; Powell, 2003; Wyatt, 2005; Zeghal & Maaloul, 2011).[5]

Based on data from U.S. stock insurance firms from 1995 to 2012, we conduct empirical analyses in the following ways. First, the as-if asset balance of currently directly expensed commissions is estimated using the amortization schedule derived from the Almon lag procedure. Then, we assess whether both the DAC and the as-if asset balance of expensed commissions contain relevant information about the market value of equity. The results indicate that (a) DAC is positively and significantly related to the market value, while the coefficient is roughly 1.622; (b) the as-if asset balance of expensed commissions also shows a significant positive association with the market value, with the coefficient being roughly 1.303. Importantly, the correlation between the as-if asset balance of expensed commissions and the existing DAC is low, implying that the capitalization–amortization of the currently expensed commissions provides incremental value relevance; (c) both the DAC amortization expense and as-if amortized commission expense are negatively associated with the market value, while the coefficient of the reported expensed commissions is insignificant in the market value regressions, implying that the direct-expensing approach is not consistent with the market's expectation; and (d) Vuong's Z-statistic confirms that the capitalization–amortization method makes the accounting metrics of the DAC or the expensed commissions more informative about the market value.

Several additional tests are carried out. First, both the coefficients of DAC and the as-if asset balance of expensed commissions are positively related to insurance revenues from premiums summed over the subsequent four, eight, or 12 quarters. Meanwhile, the coefficient of the as-if asset balance of expensed commissions is ''less negative'' than that of DAC in explaining the volatility of subsequent premiums, suggesting that the economic benefits from DAC are still more stable than those from expensed commissions. Besides, we find that the incremental value relevance of capitalizing–amortizing the directly

expensed commissions is greater when the growth in such commissions is higher. The positive and significant associations of DAC (or the as-if asset balance of expensed commission) with market values are not affected when (a) the difference between life and nonlife firms are controlled, (b) we conduct the regressions based on observations partitioned by time periods, and (c) we alternatively amortize the expensed commissions using a straight line approach. Overall, our findings indicate that the currently expensed insurance commissions are closely related to future economic benefits, and hence applying the capitalizing–amortizing method is more appropriate.

Our study contributes not only to the literature on the value relevance of insurance acquisition costs, but also to the policy debate on the capitalization versus expensing of such costs. This study is the first to examine how the insurance acquisition costs are related to subsequent premiums and reflected in market values. Second, our findings are consistent with IFRS 17,[6] *Insurance Contracts*, under which the acquisition costs shall not be immediately expensed. Third, the study enriches the intangible asset literature by exploring customer acquisition costs, a type of outlay that receives less attention, but plays a key role in services industries. Fourth, our evidence sheds light on the accounting treatments for acquisition costs in other industries in which the cost of obtaining a contract may be substantial such as the telecom industry where these costs are rarely capitalized.[7]

The remainder of this article proceeds as follows. ''Institutional Backgrounds and Development of Hypotheses'' section introduces important details about insurance commissions under U.S. GAAP and puts forward the testable hypotheses. ''Research Design'' section outlines the research design, including empirical models, sample selection, and data characteristics. ''Empirical Results and Analyses'' section presents the empirical analyses and findings. The article concludes with a summary in ''Conclusions and Implications'' section.

Institutional Backgrounds and Development of Hypotheses

Under current U.S. GAAP, FAS 60 stipulates in BC 28~31 that ''commissions and other costs that are primarily related to insurance contracts issued or renewed shall be capitalized and charged to expense in proportion to premium revenue recognized.''[8] The capitalized–amortized balance of such cost is referred to as DAC. Because generally the commissions are incurred at decreasing ratios of premiums over the policy years, while an overwhelmingly large portion of such costs are paid during the first policy year,[9] the capitalization–amortization method ensures that the insurer's profit margin is correctly reflected during the policy life. Besides, based on IFRS 17, insurance acquisition cost is termed as insurance acquisition cash flows. It states that:

> Cash flows arising from the costs of selling, underwriting and starting a group of insurance contracts that are directly attributable to the portfolio of insurance contracts to which the group belongs. Such cash flows include cash flows that are not directly attributable to individual contracts or groups of insurance contracts within the portfolio.

Also, BC 125 stipulates that:

> An entity shall determine insurance revenue related to insurance acquisition cash flows by allocating the portion of premiums that relate to recovering those cash flows to each reporting period in a systematic way on the basis of the passage of time. An entity shall recognize the same amount as insurance service expenses.

In other words, IFRS 17 proposes that insurance acquisition cash flows will not be immediately expensed when incurred; rather, it should be recognized as an expense over the coverage period. Notably, because the term ''insurance acquisition cost'' is still more common in the insurance practical discussions, we use the term ''insurance acquisition cost'' in our study.

No prior study has focused on the insurance acquisition costs, and hence little is known regarding their role in value creation. Although, the marketing literature extensively considers that the acquisition cost plays a key role in developing new customers, and hence is related to value creation (Chan, Wu, & Xie, 2011; Gupta, Lehmann, & Stuart, 2004; Min, Zhang, Kim, & Srivastava, 2016; Niraj, Gupta, & Narasimhan, 2001). Technically, for the outlays that met the deferral criteria, the insurance acquisition costs are deferred at inception, indicating the creation of long-term premium inflows, while being amortized as expenses to match the realization of subsequent benefits. Accordingly, the DAC ending balance, that is, the net amount of deferrals minus amortizations, represents the unexpired portions of acquisition costs, which are expected to relate to future premium inflows. Although some may consider such ''unexpired claims'' to be out-of-pocket expenditures, they effectively possess marketable values. On one hand, even if policy-holders surrender policies prematurely, they would be subject to surrender charges to compensate insurers for up-front commissions. Although the practice of charging surrender charges is regulated, official authorities also specify that levying reasonable amounts of surrender charges to the extent needed to cover incurred commissions is permitted. On the other hand, in a typical reinsurance arrangement, the primary insurer usually pays the reinsurer its proportion of gross premiums it receives on a risk. Meanwhile, the reinsurer allows the company a ceding or direct commission on such gross premiums received, with that commission being large enough to reimburse the ceding firms for the commissions paid to agents (Wehrhahn, 2009). Hence, the DAC balance is considered closely related to future cash inflows when investment bankers value insurance firms (Casualty Actuarial Society, 2000) and is also part of the value of the in-force business under the embedded value system.

It should be noted that because FAS 60 tends to permit the capitalization of acquisition cost only when such cost is incremental at the individual contract level, some commissions are directly expensed by U.S. insurance firms. However, such commissions are very likely to meet the capitalization criteria of IFRS 17. So, the fundamental issue is whether such expensed commissions are related to future economic benefits. According to firms' annual reports and practical notes issued by leading certified public accounting (CPA) firms, at least the following types are included: (1) acquisition costs that do not vary with the production of new business, such as commissions on group products which are generally level throughout the life of the policy;[10] (2) ultimate renewal commissions;[11] (3) overriding commissions;[12] and (4) contingent commissions.[13] Types (1) and (2) motivate the salespersons to maintain policyholders' satisfaction if they want to receive subsequent commissions. Hence, these two types of commissions help ensure that subsequent premiums from existing policies will be realized. The overriding commissions, as the portion of commissions paid to the manager of salespersons that directly acquire policies, are value relevant at least due to the premiums arising from existing contractual relationships. In addition, because insurance policies are complicated and the market is highly competitive, the knowledge and customer relationship provided by the manager is usually critical for team members to acquire future policies. In other words, the payment of overriding commissions may maintain or reinforce the incentives of the manager of a sales team in assisting his or her team

members and help to ensure the inflow of premiums from existing and future policies. As for contingent commissions, when they are paid if brokers or agents meet a particular rate of retention or renewal of policies in force with respect to the insurance firm, they will at least maintain brokers' or agents' incentives to ensure the premium inflows from existing policies. When they are paid if brokers or agents reach a particular number of policies or dollar value of premiums with the insurance firm, brokers or agents will be encouraged to bring in more future policies. As to contingent commissions paid according to the characteristics of policyholders, such commissions may motivate salespersons to bring in the kinds of customers that the insurance firm wishes to develop long-term relationships with. In sum, contingent commissions not only ensure ''premiums from current contracts'' but also promote ''premiums from future contracts.'' In sum, the following hypotheses are stated.[14]

Hypothesis 1: Recognized DACs are value relevant.
Hypothesis 2: Expensed commissions, if capitalized and amortized, are value relevant.

Research Design

Sample and Variable Measurements

The sample firms consists of both life and nonlife insurers and were initially identified on the basis of their primary NAICS code from COMPUSTAT, with those firms with the codes 524113, 524114, or 524126 in the 1995-2012 period being included[15]. Financial data, such as net incomes, total assets, and total liabilities, were obtained from COMPUSTAT. In addition, data on the acquisition costs and expensed commissions were manually collected from insurers' annual or quarterly SEC filings because these items are not available in COMPUSTAT. To mitigate the effects of extreme values, observations with a value below (above) the 0.5 (99.5) percentile of net incomes and market value distributions were excluded from the final sample. The final sample consists of 451 observations. Details on the construction and distribution of the sample are reported in Table 1.

DAC amortizations and expensed commissions are mostly explicitly presented as one of the items in the income statement. An example disclosed by UNUM Group is presented below. As shown, the total commissions incurred during the first quarter of 2006 were US$210.9 whereas the amount deferred was US$135.9, suggesting that the expensed amount was US$75.0 (210.9 less 135.9).

UNUM Group Three Months Ending March 31, 2006	
Benefits and expenses	
Benefits and changes in reserve for future benefits	$1,867.5
Commissions	210.9
Deferral of policy acquisition costs	(135.9)
Amortization of deferred policy acquisition costs	119.8
Total benefits and expenses	$2,534.9
Net income	$73.4

Table 1. Sample Construction Process and Distribution.

Panel A: The Sample Construction.

	Firm-quarters
Available observations with insurance acquisition costs	654
Observations deleted due to	
Other financial data missing	34
Incomplete stock price data	169
Final sample	451

Panel B: Distribution by Year and Type of Insurance Firms.

Year	Nonlife firms	Life firms	Total
1995	4	20	24
1996	10	12	22
1997	15	16	31
1998	14	16	30
1999	11	16	27
2000	11	16	27
2001	12	16	28
2002	11	16	27
2003	11	16	27
2004	9	15	24
2005	10	17	27
2006	11	19	30
2007	11	17	28
2008	8	14	22
2009	7	12	19
2010	6	12	18
2011	7	13	20
2012	7	13	20
Total	175	276	451

Panel C: Sample Firms (in Alphabetical Order).

Aflac Inc.
CNA Surety Corp.
Citizens Inc.
Darwin Professional Underwriters
Delphi Financial Group Inc.
Equitable Of Iowa Companies
FBL Financial Group Inc.
Hartford Financial Services Group Inc.
ITT Hartford Group Inc.
Jefferson Pilot Corporation
KMG AMERICA CORP
Kemper Corporation
Penn Treaty American Corporation
Safeco Corporation
Torchmark Corporation
Unum Corporation
Unum Group
UnumProvident Corp.
USLIFE Corporation

Note. Many of our sample firms are well-known insurers based on practical surveys (http://www.relbanks.com/top-insurance-companies/usa and https://www.doxo.com/g/united-states-of-america/insurance). For instance, Aflac Inc., CNA Corp., Torchmark Corp., Unum Group, and Safeco Corp; also, Aflac Inc., Torchmark Corp., and Unum Group are listed in S&P 500 component. Although the list of important insurers may differ depending on the market (e.g., life, annuity, health, property and casualty, etc.), it suggests that at least some of our sample firms have some market significance.

Measuring the As-If Asset Metric for Expensed Commissions Under the Capitalization–Amortization Method

To assess the value relevance of the directly expensed commissions, the as-if asset metric should be estimated assuming that the capitalization–amortization method had been applied. We follow Lev and Sougiannis (1996) and perform the following steps. First, to account for simultaneity, firms' scaled commission expenses are cross-sectionally regressed on the average of scaled commission expenses of other firms in the industry. The fitted value of commission expense is obtained and will be used in the second step. Specifically, the following model is estimated.

$$\left(\frac{NDC}{S}\right)_{it} = a + b\left(\frac{Industry\ NDC}{S}\right) + u_{it}, \qquad \text{(Model A1)}$$

where NDC = the currently expensed insurance commission, S = insurance premiums, *Industry NDC/S* = the average of scaled commission expenses of other firms in the industry.

Second, to avoid the multicollinearity problem, we apply the Almon lag procedure when regressing the operating income before the insurance-expensed commissions on the several lag terms of expensed commissions[16] as shown below.

$$\left(\frac{OI}{S}\right)_{it} = \alpha_0 + \alpha_1\left(\frac{TA}{S}\right) + \sum_k \alpha_{2,k}\left(fitted\_value\_\frac{NDC}{S}\right)_{i,t-k} + \varepsilon_{it}, \qquad \text{(Model A2)}$$

where OI = operating income before NDC, that is, the expensed commissions, TA = tangible assets, *fitted_value_NDC/S* = the fitted value of NDC obtained from Model A1.

For a specific year, the coefficients are estimated using the observations from the preceding 2 years. The estimated coefficients (i.e., $\alpha_{2,k}$) allow us to obtain the amortization ratio for each year. Then, the periodic as-if amortization expense for insurance commission is the sum of current and past incurred commission, each multiplied by the appropriate amortization rate. The as-if commission asset is obtained by cumulating the unamortized portion of the incurred commission for each period.

Empirical Models and Variable Definitions

We apply the Ohlson model to assess the value relevance of insurance acquisition cost and expensed commissions (Barth, Beaver, & Landsman, 1998; Bryant, 2003; Chambers, Jennings, & Thompson, 1999; Francis & Schipper, 1999). In Model 1.1, the reported DAC balance (*DAC*) along with other control variables, including other assets (*OTA*), total liabilities (*LIB*), reported net incomes (*NI*), the dummy indicating whether the observation is a life insurance firm (Hoyt & Liebenberg, 2011), and quarter dummy variables, are used to explain the market value (*MV*). The models are estimated based on double-clustered (year and firm) standard errors to correct potential cross-sectional and serial correlation of the residuals and/or the independent variables in panel regressions (Petersen, 2009). As Hypothesis 1 posits that the DAC balance represents the unexpired portions of acquisition costs, which are expected to relate to future premium inflows, β_1 is predicted to be positive. Then, in Model 1.2, the reported net income is decomposed into net income before reported DAC amortization expense and reported directly expensed commission (*BNI*),

reported DAC amortization expense (*AMT*), and reported directly expensed commission (*NDC*). This model aims to first understand how the market values the ''reported expenses'' regarding DAC and directly expensed commissions. Because it is argued that the capitalization–amortization method is more reflective of business essence, β_5 is predicted to be negative. Similarly, because Hypothesis 2 implies that the current direct expensing method is not appropriate, and hence the sign and significance of β_6 is unclear.

$$MV_{it} = \beta_0 + \beta_1 DAC_{it} + \beta_2 OTA_{it} + \beta_3 LIB_{it} + \beta_4 NI_{it} + \beta_5 LifeDummy + \Phi_K QuarterDummies_K + \varepsilon_{it},$$ (Model 1.1)

$$MV_{it} = \beta_0 + \beta_1 DAC_{it} + \beta_2 OTA_{it} + \beta_3 LIB_{it} + \beta_4 BNI_{it} + \beta_5 AMT_{it} + \beta_6 NDC_{it} + \beta_7 LifeDummy + \Phi_K QuarterDummies_K + \varepsilon_{it},$$ (Model 1.2)

where MV_{it} = firm i's market value of equity at the end of quarter t, deflated by the lagged total asset; DAC_{it} = firm i's DACs at the end of quarter t, deflated by the lagged total asset; OTA_{it} = firm i's other asset at the end of quarter t, deflated by the lagged total asset, that is, the total asset less DAC; LIB_{it} = firm i's total liability at the end of quarter t, deflated by the lagged total asset; NI_{it} = firm i's reported net income during quarter t, deflated by the lagged total asset; this item stands for the net income that is actually reported by the firm; BNI_{it} = firm i's reported net income before DAC amortization expense and currently directly expensed commissions during quarter t, deflated by the lagged total asset; AMT_{it} = firm i's reported DAC amortization expense during quarter t, deflated by the lagged total asset; NDC_{it} = firm i's reported currently directly expensed commissions during quarter t, deflated by the lagged total asset.

To investigate whether the directly expensed commission is value relevant, the as-if metrics converted from the directly expensed commissions (as explained in ''Measuring the As-If Asset Metric for Expensed Commissions Under the Capitalization–Amortization Method'' section) are added. As shown, Model 2.1 differs from Model 1.1 in that (a) the as-if asset balance of the directly expensed commission (*CP_NDC*) is included and (b) the reported net income in Model 1.1 is replaced by the as-if net income (*ANI*) assuming that the expensed commission is capitalized and amortized. More specifically, *ANI* is calculated by adding the reported expensed commission to the reported net income and subtracting the as-if amortization expense for the expensed commission. Also, according to Hypothesis 2, expensed commissions are related to economic benefits from existing or future contracts, so β_2 in Model 2.1 is predicted to be positive. Notably, it is ideal to separate commissions from other costs when evaluating the value relevance of capitalized–amortized and directly expensed acquisition costs. However, it is not attainable because (a) capitalized–amortized commissions and other costs are always presented together; (b) directly expensed acquisition costs other than commissions are always reported in combination with other operating costs. In other words, only ''directly expensed commissions'' are separately available, and this data limitation is likely to make it more difficult to find the value relevance of DAC because commissions will be paid only when policies are eventually acquired, while that may not be the case for other costs.[17] Finally, to ascertain whether the capitalization–amortization method provides more informative expense metrics, the as-if amortization expense for directly expensed commissions (*EX_NDC*) is separated from the reported net income in Model 2.2, and its coefficient (β_7) is predicted to be negative and significant.

Similarly, Models 2.1 and 2.2 are estimated based on double-clustered (year and firm) standard errors.

$$MV_{it} = \beta_0 + \beta_1 DAC_{it} + \beta_2 CP\_NDC_{it} + \beta_3 OTA_{it} + \beta_4 LIB_{it} + \beta_5 ANI_{it}$$
$$+ \beta_6 LifeDummy + \Phi_K QuarterDummies_K + \varepsilon_{it}, \qquad \text{(Model 2.1)}$$

$$MV_{it} = \beta_0 + \beta_1 DAC_{it} + \beta_2 CP\_NDC_{it} + \beta_3 OTA_{it} + \beta_4 LIB_{it} + \beta_5 BNI_{it}$$
$$+ \beta_6 AMT_{it} + \beta_7 EX\_NDC_{it} + \beta_8 LifeDummy + \Phi_K QuarterDummies_K + \varepsilon_{it},$$
$$\text{(Model 2.2)}$$

where CP_NDC_{it} = firm i's as-if asset value at the end of quarter t, deflated by the lagged total asset; this item represents the amount of ''additional asset'' that would be reported if the capitalization–amortization method had been applied to the currently directly commission, and the method for calculation is detailed in ''Measuring the As-If Asset Metric for Expensed Commissions Under the Capitalization–Amortization Method'' section.

ANI_{it} = firm i's adjusted net income during quarter t, deflated by the lagged total asset; this item represents the net income that would be reported if the capitalization–amortization method had been applied to the directly expensed commission, and is equal to NI plus NDC and minus EX_NDC.

EX_NDC_{it} = firm i's as-if amortization expense for directly expensed commission during quarter t, deflated by the lagged total asset; this item represents the amount of ''amortization expense'' for directly expensed commissions that would be reported if the capitalization–amortization method had been applied, and the details are in ''Measuring the As-If Asset Metric for Expensed Commissions Under the Capitalization–Amortization Method'' section.

Other variables are defined in the same way in Models 1.1 and 1.2.

Empirical Results and Analyses

Descriptive Statistics

Table 2 contains definitions and descriptive statistics for all the relevant variables. The mean and median values of *DAC* (deflated by total assets) are roughly 0.061 and 0.064, respectively, demonstrating the nontrivial financial statement effect of DAC. The mean values of new deferral of DAC and expensed commissions during a fiscal quarter, denoted as *ADD* and *NDC* are 0.007 and 0.006, as a percentage of total assets. Their totals have a mean 0.011, and all these statistics highlight the significance of insurance acquisition costs. The mean value of the expensing ratio, denoted as *NDC* divided by the sum of *ADD* and *NDC*, is 0.330, indicating that, on average, the portion of commissions deferred is greater than that expensed directly. Table 3 contains the Pearson correlations between the variables included in all the models. Consistent with our predictions, both the capitalized–amortized and the as-if asset values of directly expensed commissions (*DAC* and *CP_NDC*) are positively correlated with the market value of equity (*MV*).

Regression Results

Table 4 shows the estimation results, and we report *t* values based on standard errors clustered both by firm and by year to correct for time series and cross-sectional dependence

Table 2. Descriptive Statistics for All Variables (obs = 451).

	Mean	SD	Median	25th percentile	75th percentile
MV	0.247	0.190	0.198	0.107	0.391
DAC	0.061	0.047	0.064	0.044	0.132
ADD	0.007	0.008	0.006	0.003	0.013
NDC	0.006	0.005	0.004	0.003	0.011
ADD + NDC	0.012	0.010	0.012	0.007	0.020
NDC / (ADD + NDC)	0.330	0.178	0.348	0.293	0.552
CP_NDC	0.033	0.011	0.028	0.009	0.051
EX_NDC	0.010	0.013	0.007	0.003	0.013
AMT	0.009	0.009	0.006	0.002	0.011
NI	0.003	0.008	0.004	0.001	0.007
ANI	0.004	0.009	0.005	0.002	0.008
BNI	0.014	0.010	0.013	0.008	0.018
OTA	0.966	0.052	0.958	0.883	0.975
LIB	0.799	0.188	0.817	0.793	0.918
PM	0.043	0.025	0.044	0.022	0.053
LNTA	8.629	1.990	8.504	8.045	10.654
LEV	0.796	0.123	0.816	0.782	0.892

Note. MV = market value; *DAC* = deferred acquisition costs; *ADD* = the amount of DAC deferred for the fiscal quarter; *NDC* = reported expensed commission; *CP_NDC* = as-if asset balance of expensed commission; *EX_NDC* = as-if amortization of expensed commission; *AMT* = DAC amortization expense; *NI* = reported net income; *ANI* = as-if net income when expensed commission is capitalized and amortized; *BNI* = NI + NDC + AMT; *OTA* = total assets less *DAC; LIB* = total liabilities; *PM* = premium incomes; all of the above variables are deflated by lagged total assets. *LNTA* = natural logarithm of total assets; *LEV* = debt ratio.

Table 3. Correlation Matrix (obs = 451).

	1	2	3	4	5	6	7	8	9	10	11
1. *MV*	1.00										
2. *DAC*	**.31**	1.00									
3. *CP_NDC*	**.63**	.39	1.00								
4. *EX_NDC*	**.54**	.10	**.50**	1.00							
5. *NDC*	**.50**	**.53**	**.71**	**.72**	1.00						
6. *AMT*	**−.48**	−.13	.28	**.48**	.41	1.00					
7. *NI*	**.64**	.01	.07	−.12	.17	.12	1.00				
8. *ANI*	**.52**	**.39**	.40	−.07	.22	.08	**.91**	1.00			
9. *BNI*	**.62**	**.46**	**.61**	**.53**	**.73**	**.67**	**.61**	**.70**	1.00		
10. *OTA*	.17	−.14	−.13	**−.23**	.07	.01	.12	.12	.41	1.00	
11. *LIB*	**−.50**	.06	−.41	**.41**	−.43	−.21	−.20	**−.55**	−.29	.16	1.00

Note. This table reports the Pearson correlation coefficients between variables; coefficients are shown in bold if significant at $p < .05$. See Table 2 for variable definitions.

(Petersen, 2009). In Panel A, we make a preliminary evaluation regarding the explanatory power of accounting metrics when DAC is directly expensed, rather than deferred and amortized. In that case, there is no DAC balance in the balance sheet, and the net income should be recalculated. *NI_EXDAC* equals the reported net income plus the DAC

Table 4. The Value Relevance of DAC and Directly Expensed Commissions (obs = 451).

Panel A: Results if DAC is expensed.

Dependent variable = MV_{it}	Coefficient	t value
NI_EXDAC	8.003***	(6.92)
OTA_{it}	1.560***	(10.46)
LIB_{it}	−1.378***	(−11.52)
Adjusted R^2	62.17%	
Vuong's Z-statistic (compared with Model 1.1)	8.30***	

Panel B: Results of Models 1 and 2.

Dependent variable = MV_{it}	Model 1.1	Model 2.1	Model 1.2	Model 2.2
DAC_{it}	2.022***	1.622***	1.969***	1.549***
	(10.58)	(5.89)	(10.28)	(5.23)
CP_NDC_{it}		1.303***		1.296***
		(7.14)		(6.84)
NI_{it}	7.229***			
	(7.08)			
ANI_{it}		8.419***		
		(9.03)		
BNI_{it}			5.442***	5.510***
			(7.33)	(7.20)
AMT_{it}			−2.028***	−2.266***
			(−5.99)	(−4.68)
NDC_{it}			0.131	
			(0.73)	
EX_NDC_{it}				−2.503***
				(−4.59)
OTA_{it}	1.458***	1.123***	0.998***	1.007***
	(11.46)	(11.83)	(11.01)	(11.30)
LIB_{it}	−1.434***	−1.135***	−1.161***	−1.113***
	(−11.94)	(−7.52)	(−10.82)	(−10.64)
Adjusted R^2	67.61%	74.19%	72.04%	78.83%
Vuong's Z-statistic	6.03***		6.98***	

Note. NI_EXDAC is the as-if net income if DAC is directly expensed, rather than deferred and amortized. It equals the reported net income plus DAC amortization, and less DAC new deferral during that quarter. See Table 2 for other variable definitions. Intercepts, life and quarter dummies are included but not reported for brevity. The one-tailed t values based on firm-and-year clustered standard errors are reported in parentheses.
***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

amortization and less the new DAC deferral during a specific quarter. The adjusted R^2 reported in Panel A is 62.17%, and when it is compared with that reported in column (1) of Panel B, the Vuong's Z-statistic is 8.30. This suggests that the current deferral-amortization method for DAC provides more informative metrics than the direct-expensing method. Panel B reports the results of Models 1 and 2. Column (1) presents the result of Model 1.1 in which only the value relevance of DAC is examined based on the Ohlson model. As shown, the coefficient on DAC (2.022) is significantly greater than 0 ($t = 10.58$; $p < .001$), suggesting that the market views the currently capitalized–amortized insurance acquisition

costs as relating to future economic benefits. Hence, Hypothesis 1 is supported. The results of Model 2.1, in which the value relevance of the directly expensed commission is examined, are presented in column (2). The as-if asset balance for the directly expensed commission (*CP_NDC*) shows a positive and significant correlation with the market value (coefficient = 1.303; t = 7.14), indicating that the directly expensed commission is value relevant, controlling for the effect of DAC. The difference in the coefficients of *DAC* and *CP_NDC* is weakly significant (F = 1.66, p = 0.07), implying that more economic benefits are generated from one dollar investment in DAC than that in expensed commissions. The Vuong's *Z*-statistic is 6.03, consistent with the capitalization–amortization method providing more informative accounting metrics about the market value.

In column (3), we provide the results of Model 1.2, in which the market valuations of the reported expense items of DAC and directly expensed commission are preliminarily inspected. Theoretically, if the capitalization–amortization method is suitable for DAC whereas the direct-expensing method is appropriate for the directly expensed commission, both coefficients on the reported DAC amortization expense (*AMT*) and the reported expensed commission (*NDC*) should be negative and significant. As presented, the reported DAC amortization expense is negatively and significantly associated with the market value (coefficient = –2.028, t = –5.99). As a contrast, the coefficient on the reported directly expensed commission (*NDC*) is insignificant (t = 0.73). Accordingly, the results reveal that investors do not consider directly expensed commissions to be mere periodic expense. It may also imply that some expensed commissions are not related to value creation, and it is possible that the full capitalization of insurance commissions is not appropriate. Therefore, it highlights that the directly expensed commission deserves more examination. Finally, in column (4), we report the result of Model 2.2, in which the incremental information of the as-if amortization expense for directly expensed commissions is investigated. Although the coefficient on DAC amortization remains negative (–2.266), the as-if amortization expense for directly expensed commission (*EX_NDC*) also has a negative influence on the market value (coefficient = –2.503; t = –4.59). Compared with the insignificant coefficient on reported expensed commission (i.e., *NDC* in column 3), the result indicates that the capitalization–amortization method provides more informative metrics, that is, Hypothesis 2 is supported.[18]

Robustness Checks

We conduct several additional tests to check the robustness of the main findings. First, the sample includes both life and nonlife (i.e., property and casualty) insurance firms, and one may consider the commissions related to nonlife insurance policies to affect subsequent economic benefits to a smaller magnitude because the contractual inflow of premiums related to such policies usually occurs within 1 year. However, it is also possible that the premium inflows turn out to be stable and recurring because some types of nonlife insurance policies, such as automobile insurance, have the least customized features, and policyholders may repeatedly continue renewing once they have made the first purchase from one specific insurance firm. Hence, we do not have any ex ante expectation about whether the valuation multipliers of DAC (or directly expensed commissions) for life and nonlife insurance firms should vary. The results of adding the interaction terms to our original models are presented in Table 5. As shown, the interaction terms are not significant, whereas the estimated coefficients and statistical significance of the main variables (i.e., *DAC* or *CP_NDC*) show similar patterns to those reported in Table 4. For instance, the

Table 5. Robustness Checks: The Difference Between Life- and Nonlife Firms (obs = 451).

Dependant variable = MV_{it}

DAC_{it}	2.022***	1.703***	1.965***	1.652***
	(10.55)	(7.28)	(10.30)	(7.04)
CP_NDC_{it}		1.294***		1.306***
		(5.39)		(6.02)
$DAC_{it} \times$ Life dummy	0.891	1.003	0.409	0.879
	(0.33)	(0.20)	(0.26)	(0.43)
$CP\_NDC_{it} \times$ Life dummy		0.413		0.582
		(0.38)		(1.03)
NI_{it}	7.229***			
	(7.05)			
ANI_{it}		7.200***		
		(5.29)		
BNI_{it}			5.442***	5.647***
			(7.34)	(6.85)
AMT_{it}			−2.027***	−2.276***
			(−5.89)	(−5.10)
NDC_{it}			0.130	
			(0.59)	
EX_NDC_{it}				−2.408***
				(−6.05)
$AMT_{it} \times$ Life dummy			1.310	1.283
			(0.89)	(1.00)
$NDC_{it} \times$ Life dummy			0.536	
			(1.11)	
$EX\_NDC_{it} \times$ Life dummy				0.444
				(1.19)
OTA_{it}	1.458***	1.123***	0.998***	0.994***
	(11.46)	(9.95)	(11.00)	(9.58)
LIB_{it}	−1.430***	−1.310***	−1.161***	−1.103***
	(−11.93)	(−10.04)	(−10.83)	(−10.61)
Adjusted R^2	67.62%	74.25%	72.05%	79.06%

Note. Life Dummy is equal to 1 if the observation is a life firm, and 0 otherwise. The numbers of observations in life and nonlife firms are 276 and 175, respectively. See Table 2 for other variable definitions. Quarter, life dummies, and intercepts are included but not reported for brevity.

***, **, and * indicate significance at the 1%, 5%, and 10% levels (one-tailed), respectively.

as-if asset balance of expensed commission is significantly and positively related to market values (coefficient = 1.303, t = 7.14) in column (2) of Table 4, whereas it shows a significant and positive sign (coefficient = 1.294, t = 5.39) in column (2) of Table 5 and the interaction term ($CP\_NDC \times$ Life Dummy) is not significant (t = 0.38).

As Penman (2009) indicated, earnings are no different under capitalization and amortizing versus immediate expensing if there is no growth in expenditures. We address this feature in the following way. First, the annual growth rate of expensed commissions (denoted as $Growth\_NDC$) is measured by dividing the expensed commissions during the current year less expensed commissions during the previous year by expensed commissions during the previous year. Then $GRNDC$ is equal to 1 if $Growth\_NDC$ is above the annual median value of $Growth\_NDC$, and 0 otherwise. Similarly, we obtain the annual growth rate of

Table 6. Robustness Checks: The Difference Between High- and Low-Growth Firms (obs = 451).

Dependant variable = MV_{it}

DAC_{it}	1.962***	1.608***	1.553***
	(10.41)	(7.01)	(7.50)
$DAC_{it} \times GRDAC_{it}$			0.094*
			(1.66)
CP_NDC_{it}		1.263***	1.260***
		(5.90)	(6.06)
$CP\_NDC_{it} \times GRNDC_{it}$		0.883***	0.864***
		(6.51)	(7.10)
BNI_{it}	5.438***	5.625***	5.599***
	(7.34)	(7.10)	(6.93)
AMT_{it}	−2.036***	−2.201***	−2.181***
	(−5.92)	(−4.96)	(−6.04)
NDC_{it}	0.144		
	(1.02)		
EX_NDC_{it}		−2.403***	−2.310***
		(−6.82)	(−5.89)
$NDC_{it} \times GRNDC_{it}$	0.013		
	(1.60)		
$EX\_NDC_{it} \times GRNDC_{it}$		−0.106***	−0.113***
		(−6.78)	(−5.60)
OTA_{it}	1.008***	1.093***	1.010***
	(11.40)	(10.86)	(10.39)
LIB_{it}	−1.157***	−1.101***	−1.120***
	(−10.80)	(−9.54)	(−11.47)
$GRNDC_{it}$	0.008	0.003	0.023
	(0.738)	(0.788)	(0.638)
$GRDAC_{it}$			0.024
			(1.23)
Intercept	0.202	0.521	1.330
	(0.99)	(0.32)	(0.67)
Adjusted R^2	72.09%	79.69%	80.07%

Note. GRNDC is equal to 1 if *Growth_NDC* is above the annual median, and 0 otherwise, whereas *Growth_NDC* is the annual growth rate of directly expensed commissions. GRDAC is equal to 1 if *Growth_DAC* is above the annual median, and 0 otherwise, while *Growth_DAC* is the annual growth rate of *DAC*. The number of observations whose GRNDC (GRDAC) equal to 1 is 248 (211). Life and quarter dummies are included but not reported for brevity. See Table 2 for other variable definitions.
***, **, and * indicate significance at the 1%, 5%, and 10% levels (one-tailed), respectively.

DAC (denoted as *Growth_DAC*) by dividing *DAC* in the current year less *DAC* in the previous year by *DAC* in the previous year. Then *GRDAC* is equal to 1 if *Growth_DAC* is above the annual median value of *Growth_DAC*, and 0 otherwise. Related interaction terms are added to the regression when the market value serves as the dependent variable. Results are provided in Table 6. In column (1), the interaction term between *GRNDC* and *NDC* is insignificant ($t = 1.60$). In column (2), the interaction term between *GRNDC* and *CP_NDC* is positive and significant (coefficient = 0.883, $t = 6.51$), whereas the interaction term between *GRNDC* and *EX_NDC* is negative and significant (coefficient = –0.506, $t = $ –6.78). In column (3), the sign and significance of the coefficients on *GRNDC* × *CP_NDC*

and $GRNDC \times EX\_NDC$ remain similar to those reported in column (2), whereas the coefficient on $DAC \times GRDAC$ is weakly significant ($t = 1.66$). In sum, when a firm's growth in directly expensed commissions is higher, the incremental value relevance resulting from capitalizing–amortizing expensed commissions is greater. One possible explanation for such a result is that when salespersons are paid higher commissions by a specific insurer, they may be more devoted to maintaining existing customers or developing new customers for that insurer, similar to the finding reported by Livne, Simpson, and Talmor (2011) that customer acquisition costs in the wireless industry are positively associated with customer retention.

Furthermore, because our sample period is between 1995 and 2012, one may be concerned that the value relevance of DAC or expensed commissions is driven by only subsamples during some years. Hence, we conduct the analysis based on subsamples partitioned by time periods. Specifically, there are four subsamples: observations from the years 1995~1999, 2000~2004, 2005~2009, and 2010~2012. Untabulated results show that DAC and CP_NDC are positively and significantly related to market values in all the subsamples. The coefficients on DAC range from 1.245 to 1.701, and the corresponding t values are between 4.88 and 7.25. The coefficients on CP_NDC range from 0.913 to 1.566, and the corresponding t values are between 4.89 and 7.24. Overall, our results are robust to using subsamples from different periods of time.

In addition, as ASU 2010-26 becomes effective after 2012 and its primary objective is to limit the discretion involved in the capitalization decision of acquisition costs, some may conjecture that its adoption increases the value relevance of acquisition costs. Therefore, we define an indicator variable (POST) to be 1 if the observation is from the year 2012 or 0 otherwise. The indicator variable and its interaction term with DAC or non-DAC (DAC × POST or CP_NDC × POST) are added to our original regression. Untabulated results show that the t values are 1.13 for $DAC \times POST$ and 1.55 for $CP\_NDC \times POST$, and both are insignificant. Therefore, it appears that the adoption of ASU 2010-26 does not materially affect the value relevance of acquisition costs.

We also ascertain our main findings based on stock return specifications. Following Aboody, Hughes, and Liu (2005) and Larcker, Richardson, and Tuna (2007), the excess return (i.e., the quarterly stock return less the risk-free rate return) is regressed on the reported net income or the ANI assuming the currently expensed commission is capitalized and amortized, along with the Fama-French three factors and the momentum factor.[19] The net income for the t-4 quarter is included to account for the effect of expected net incomes (Gu & Lev, 2004; Kumar & Krishnan, 2008). Vuong's Z-statistic is applied to assess the significance of the difference in the explanatory powers of reported and as-if earnings. Untabulated results show that both the reported and the ANI are positively related to the excess return. Whereas the adjusted R^2 of the reported net income model is 23.41%, the adjusted R^2 of the ANI model is 28.96%. Vuong's Z-statistic is 4.80 ($p = .000$), indicating that the ANI significantly outperforms the reported net income in explaining the excess returns.

One potential alternative interpretation of our findings is that the dependent variable averages away more noise in the revenue stream as the time horizon lengthens and the main independent variable (CP_NDC) also averages away noise by capitalizing and amortizing (smoothing) past expenses into the current period, such that these two over-time averages are correlated as a result. To address this concern, we conduct the following additional analysis. First, the reported other operating expense[20] (labeled as OTHEXP) is measured by total operating expense less DAC amortization expense and reported expensed

commission. Then, we calculate the value of the as-if asset balance (*OEX_CAP*) and as-if expense (*OEX_EXP*) if *OTHEXP* is capitalized and amortized in the same way as *DAC*. If only the alternative explanation that the noise averages way overtime accounts for our reported value relevance of *CP_NDC*, we should be able to observe a similar pattern for *OEX_CAP*. Using the market value as the dependent variable, we find that (a) the coefficient on the reported other operating expense (*OTHEXP*) is–1.033 and $t = -4.81$, suggesting that the market considers the reported metric to be an expense; (b) the coefficient on the as-if asset balance (*OEX_CAP*) is 0.096, and the $t = 1.24$; (c) the coefficient on the as-if expense (*OEX_EXP*) is –1.220, and $t = -2.50$. In sum, unlike directly expensed commissions, other operating expenses are not closely related to future economic benefits, and the market considers the direct expensing treatment of other operating expenses to be appropriate.

In addition, we employ another way of addressing the above issue by conducting the randomization test used in Landsman, Peasnell, and Shakespeare (2008). Specifically, *NDC* for firm j in year t is randomly assigned to firm k in year t, and so forth. Then, we calculate the as-if asset metric based on the ''randomly assigned *NDC*'' and repeat all the related empirical analyses. We find that after this random assignment, the coefficient on *CP_NDC* is not significantly related to market values ($t = 0.75$). In other words, our main findings are not merely driven by the smoothing effect of the capitalizing and amortizing methodology.

Another feasible way to amortize the directly expensed commissions is using an amortization period identical to the amortization period used for DAC. As detailed in ''Institutional Backgrounds and Development of Hypotheses'' section, because insurance premiums mostly remain level during the policy years, DAC amortization usually coincides with using the straight line approach. So, we should be able to estimate the DAC amortization period in a backward way. Specifically, assume that an insurance firm's beginning balance of DAC is zero, the firm incurs new deferral which is $100 at the beginning of each year, and will amortize it within 4 years. Then, the amortization expense for the third year is $25 multiplied by three, that is, $75. The ending balance of DAC is $100 × 3/4 + $100 × 2/4 + $100 × 1/4 = $150. The ratio of DAC balance to the amortization expense is 2. So, it turns out that the original amortization period is equal to multiplying the ratio of DAC balance to the amortization expense by 2. More specifically, we obtain the ratio of DAC balance to the DAC amortization expenses, and then, that value is multiplied by 2, serving as the estimated DAC amortization period, and is used to amortize the directly expensed commissions. The following simplified numerical example explains the calculation process.

Example 1. An Insurer Has the Following Expensed Commissions Reported During the Past 16 Quarters. Suppose the Reported Net Income of Y4Q4 is $52.

	Q1	Q2	Q3	Q4
Y1	$100	$122	$120	$124
Y2	$108	$120	$122	$126
Y3	$96	$124	$120	$124
Y4	$104	$118	$120	$116

Assume that multiplying the ratio of DAC balance to DAC amortization expense by 2 results in an estimated amortization period which is 2 years. Because our empirical data is firm-quarter observations, we use 8 quarters to conduct this calculation. As a result, the as-if asset for Y4Q4 = 7/8 × $116 + 6/8 × $120 + . . . + 1/8 × $124 = $470.15. The as-if amortization for Y4Q4 = 1/8 × $116 + 1/8 × $120 + . . . + 1/8 × $96 = $115.25. Hence, the ANI = 52 + 116 − 115.25 = $52.75

Based on the above alternative way of amortization, we repeat all the regression analyses and find very similar results. For instance, for Model 2.2, the coefficient of CP_NDC is 1.129, and t value is 6.95 ($p < .000$). The coefficient of EX_NDC is −2.296, and t value is −5.68 ($p < .000$). In brief, our main results are not affected by using alternative amortization schedule.

Additional Analyses

An insurance contract is usually priced to recover commissions through premiums and through surrender charges.[21] So, we additionally evaluate whether DAC or directly expensed commissions are recovered from subsequent premiums, using the specification similar to that used by Kobelsky, Richardson, Smith, and Zmud (2008). Also, similar to prior studies on research and development and advertising costs (Gu & Li, 2010; Kothari, Laguerre, & Leone, 2002), we examine the relation between insurance acquisition costs and the uncertainty of future premiums. That relation informs the risk and reliability of future economic benefits associated with incurred commissions. In sum, the following regressions are estimated.

$$Sum(PM_i \, from \, t+1 \, to \, t+n) = \alpha_0 + \alpha_1 DAC_{it} + \alpha_2 CP\_NDC_{it} + \alpha_3 OTA_{it} + \alpha_4 LNTA_{it}$$
$$+ \alpha_5 LEV_{it} + \alpha_6 LifeDummy + \Phi_K QuarterDummies_K + \varepsilon_{it},$$

(Model 3.1)

where n = 4, 8, or 12

$$Standard \, deviation(PM_i \, from \, t+1 \, to \, t+n) = \alpha_0 + \alpha_1 DAC_{it} + \alpha_2 CP\_NDC_{it} + \alpha_3 OTA_{it}$$
$$+ \alpha_4 LNTA_{it} + \alpha_5 LEV_{it} + \alpha_6 LifeDummy + \Phi_K QuarterDummies_K + \varepsilon_{it},$$

(Model 3.2)

where n = 4, 8, or 12; PM_i = firm i's earned insurance premiums plus policy fees, deflated by the lagged total asset.

Other variables are defined as in Models 1.1 and 1.2.

The empirical results based on Models 3.1 and 3.2 are presented in Table 7. Based on columns (1), (2), and (3), the coefficients on the as-if asset balance for directly expensed commissions (CP_NDC) are 3.408, 7.011, and 9.036 when the dependent variable is the sum of earned premiums for the subsequent four, eight, and 12 quarters, respectively. It appears that the positive effect of directly expensed commissions remain stable over time. The results in columns (4), (5), and (6) indicate that the as-if asset balance for directly expensed commissions (CP_NDC) is negatively related to the standard deviation of subsequent premiums. The coefficient on CP_NDC is ''less negative'' than that on DAC in explaining the volatility of subsequent premiums, suggesting that the economic benefits from DAC are still more stable than those from directly expensed commissions.

Table 7. The Effect of DAC/Directly Expensed Commissions on Subsequent Level and Volatility of Premiums (obs = 451).

	Model 3.1				Model 3.2		
	Sum (PM_i from $t + 1$ to $t + n$)				Std (PM_i from $t + 1$ to $t + n$)		
Dependant variable	$n = 4$	$n = 8$	$n = 12$	Dependant variable	$n = 4$	$n = 8$	$n = 12$
DAC_{it}	4.095***	7.018***	10.049***	DAC_{it}	−0.080***	−0.066***	−0.059**
	(3.57)	(3.86)	(3.63)		(−2.91)	(−2.66)	(−2.43)
CP_NDC_{it}	3.408**	7.011***	9.036***	CP_NDC_{it}	−0.033***	−0.037***	−0.038**
	(2.39)	(3.04)	(2.97)		(−2.69)	(−2.36)	(−2.20)
OTA_{it}	0.265***	0.601***	0.806**	OTA_{it}	−0.009***	−0.007***	−0.006***
	(2.89)	(3.67)	(2.62)		(−5.12)	(−4.03)	(−3.18)
$LNTA_{it}$	0.030***	0.052***	0.072***	$LNTA_{it}$	−0.001***	−0.001***	−0.000**
	(7.67)	(6.29)	(3.42)		(−3.02)	(−2.96)	(−2.01)
LEV_{it}	−0.313***	−0.723***	−0.689***	LEV_{it}	−0.004***	−0.005***	−0.003***
	(−6.98)	(−6.30)	(−3.67)		(−4.13)	(−3.60)	(−3.48)
Intercept	1.333	1.002**	0.034***	Intercept	1.223***	0.993***	0.568***
	(0.57)	(2.09)	(5.06)		(6.76)	(5.10)	(5.03)
Adjusted R^2	76.98%	74.29%	70.30%	Adjusted R^2	31.06%	28.77%	23.59%

Note. This table presents the relation between DAC/the as-if asset balance of directly expensed commissions and the sum (or the standard deviation) of subsequent earned premiums. The one-tailed t values based on firm-and-year clustered standard errors are reported in parentheses. Life and quarter dummy variables are included but not reported for brevity. *PM* refers to the earned insurance premium; see Table 2 for other variable definitions.
***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Finally, one may be concerned that the potential discretion involved in making the decision on capitalizing or expensing insurance acquisition costs may affect our results. However, even if managerial discretion exists, it will cause the reported DAC or directly expensed commissions to contain bias. Hence, the presence of such potential makes it more difficult for us to empirically find the valuation implication of insurance acquisition costs. In other words, our results showing the strong value relevance of insurance acquisition costs appear to remain even more robust after considering the potential presence of managerial discretion. Still, we test for the potential presence of discretion involved in the capitalization decision in the following ways. First, for a specific firm during a specific quarter, the expensing ratio was calculated as directly expensed commissions divided by the sum of directly expensed commissions and new deferral of DAC during the period, which is denoted as *EXPR*. Second, we obtain the mean of the expensing ratios measured within the previous eight quarters, which is denoted as *MEXPR*. Then, the ''residual'' portion of the expensing ratio for a specific firm during a specific quarter is defined as the difference between *EXPR* and *MEXPR*. Eventually, we conduct the t test and find that the difference between *EXPR* and *MEXPR* is not statistically significant ($t = 0.2137$). In summary, these results suggest that any concern regarding the effect of managerial discretion involved in the capitalization decision on our empirical findings may be unwarranted.

Conclusions and Implications

Insurance acquisition costs in the United States are capitalized–amortized when directly related to the sales volume of insurance policies, but in practice, are often expensed. We

hypothesize that even though the expensed commissions may not be attributable to an individual policy, they are directly related to the generation of premiums at least at the portfolio level. Usually, the payment of such commissions is designed to maintain the premium inflows from existing policies as well as to promote the development of long-term customer relationships and the generation of future policies.

Based on data from U.S. stock insurance firms from 1995 to 2012, we assess the relative explanatory powers of accounting metrics when DAC is capitalized–amortized (as compared with when it is directly expensed), and the Vuong's Z-statistic confirms that the current capitalization–amortization method of DAC provides more informative metrics than the direct-expensing method. Second, the currently directly expensed commissions are converted into capital assets based on the amortization schedule derived from the Almon lag procedure. Then, using the Ohlson model, we find robust evidence showing that (a) both DAC and the as-if asset balances of directly expensed commissions are positively related to the equity market value, and the difference in their coefficients is weakly significant. (b) DAC amortization is negatively associated with the market value, while the reported directly expensed commissions show an insignificant coefficient, implying that the immediate expensing treatment may not be appropriate for valuation purposes. Additional analyses indicate that both the coefficients on DAC and the as-if asset balance of directly expensed commissions are positively related to subsequent earned premiums, while the coefficient on DAC is slightly larger than that of the as-if asset balance of expensed commissions. Meanwhile, the coefficient on the as-if asset balance of expensed commissions is ''less negative'' than that of DAC in explaining the volatility of subsequent premiums, suggesting that the economic benefits from DAC are more stable than those from directly expensed commissions. In brief, the empirical results are consistent with the directly expensed insurance commissions contributing to the generation of subsequent economic benefits.

This study is the first to focus on the appropriateness of different accounting treatments for insurance acquisition costs. Because such cost represents a substantial outlay in obtaining insurance policies, the related financial statement effects caused by different accounting treatments have economic significance. A clear practical implication is that investors should note that expensed commissions may cause earnings to not accurately reflect profits. Second, we provide direct and timely policy implications. Notably, IFRS 17, *Insurance Contracts*, stipulates that ''insurance acquisition cash flows will not be immediately expensed when incurred; rather, it should be recognized as an expense over the coverage period.'' So, the IASB's treatment will produce expense numbers identical to those produced by the capitalizing–amortizing method. Our evidence is consistent with the IASB's proposed accounting treatments for insurance acquisition costs, and hence, the FASB may take it into consideration when revising regulations regarding insurance accounting.

Author(s) Note

Yi-Ping Liao is now affiliated to Department of Accounting, Fu Jen Catholic University.

Declaration of Conflicting Interests

Funding

Notes

1. Refer to the BCA 45 paragraph.
2. According to the Chubb Group, the standard commission ratios of its auto liability policies range from 7.7% to 27% of the premiums received (http://www.chubb.com/marketing/chubb7451.html). The AXA Group reports, meanwhile, that its commission ratio for new life and disability insurance policies is 123.75% and that its commission ratio for renewal policies is 10.12% (https://adviser.axa.com.au/idc/groups/public/documents/system/axa_050358.pdf).
3. Deferred acquisition cost (DAC) includes both deferred commission costs and other DACs. Theoretically, it would be better to examine deferred commission costs separately from other DACs for our research. However, almost all insurance firms only report the aggregated amount of DACs.
4. The coverage period of an insurance policy refers to the periods when the protection is provided by the insurer.
5. This study differs from prior studies that examine the value relevance of research and development outlays in several notable aspects. First, the insurance acquisition cost is related to contractual rights to receive subsequent insurance premiums, while the research and development outlays are not. Second, the insurance acquisition cost will be definitely incurred as long as the insurance policy is issued, while the research and development outlays are discretionary to a great degree. In other words, one should not be able to expect that the uncertainties involved in the future benefits arising from research and development outlays and insurance acquisition costs are similar. So, the prior evidence showing positive, negative, or no relationship between research and development outlays and firm values does not necessarily hold true for the insurance acquisition cost.
6. Refer to https://www.iasplus.com/en/standards/ifrs/ifrs-17. The BC 125 of IFRS 17 stipulates that ''An entity shall determine insurance revenue related to insurance acquisition cash flows by allocating the portion of premiums that relate to recovering those cash flows to each reporting period in a systematic way on the basis of the passage of time. An entity shall recognize the same amount as insurance service expenses.'' So, the IASB's treatment will produce expense numbers that are identical to those produced by the capitalizing–amortizing method.
7. Refer to http://www.ey.com/Publication/vwLUAssets/ us_gaap_vs_ifrs_telecommunications.pdf/ $FILE/us%20gaap%20vs%20ifrs%20telecommunications.pdf
8. DAC is amortized over periods approximating the lives of the life, generally as a percentage of (a) premiums in the case of protection-oriented insurance contracts or (b) expected gross profits (EGPs) for insurance contracts with investment components. Refer to Witzel (2011) for details.
9. For instance, the AXA Group reports that the commission ratio for new life policies is 123.75% of the premium received.
10. Refer to UNUM Group financial statement footnote.
11. Refer to AFLAC financial statement footnote. For long-term insurance policies, in most cases, the commission rate will decrease year by year until it reaches a minimum value. The ultimate commission rate refers to the rate from which the commission rate no longer decreases, that is, the minimum value.
12. Overriding commissions are the portion of commissions paid to the manager of salespersons that directly acquire policies. Ernst and Young (2011) indicated that such commissions are usually capitalized, but Deloitte (2011) argued that some firms may also charge them into expenses directly.

13. Contingent commissions are payments made by an insurer to brokers or agents based on the volume and some other measures of policies placed with the insurer. For instance, the following is excerpted from ACE Insurance (http://www.acegroup.com/us-en/footer/producer-compensation.aspx). A contingent commission is compensation paid to a broker or independent agent contingent upon its (a) placing a particular number of policies or dollar value of premium with ACE, (b) achieving a particular level of growth in the number of policies placed or dollar value of premium with ACE, (c) meeting a particular rate of retention or renewal of policies in force with ACE, or (d) placing or keeping sufficient insurance business with ACE to achieve a particular loss ratio or other measure of profitability. Because the payment of such commissions does not vary with any specific policy, it is less likely to use the capitalizing–amortizing method because no specific amortization period could be identified.

14. The accounting issue for such commission is analogous to full cost versus successful efforts accounting in the oil and gas industry. Bryant (2003) indicated that the proponents of full cost accounting argue that both successful and unsuccessful drillings contribute to the discovery of reserves. The commission we examine, such as the contingent commission which is usually paid according to characteristics of policyholders (instead of the sales volume of policies), is also related to policies that have been successfully acquired. Such commission is practically expensed only because firms are not able to amortize such commission based on the volume of policies. In other words, the evidence from the oil and gas that both successful and unsuccessful drillings are value relevant sheds some light on our hypothesis. We thank the anonymous reviewer for giving us this suggestion.

15. Because Model 3 requires data from the subsequent 12 quarters, our final sample ends at the end of 2012 although we have data in the 1995-2015 periods.

16. Technically, we use the Stata software to run the Almon lag procedure, and the module is from the Shirley Almon Generalized Polynomial Distributed Lag Model.

17. Although it would be preferable if we are able to examine the valuation implications of different types of commissions, it is not empirically attainable because no firms disclose commissions based on types. If all types of commissions are not related to future economic benefits, we should find the coefficient to be insignificant even if applying the capitalization–amortization method. If the coefficient is significant, it suggests that at least some types of the commissions are associated with value creation.

18. We sincerely thank the anonymous reviewer for urging us to clarify the reason why the coefficient of *NDC* is insignificant. One explanation is that the amounts of economic benefits arising from expensed commissions may vary to some degree across firms or years, which results in a nontrivial variance in estimated coefficients, and hence empirically, the t value turns out to be insignificant. By contrast, when the capitalization–amortization method is used, the different amount of economic benefits arising from expensed commissions is taken into account when estimating the amortization schedule, and hence the as-if asset for expensed commissions is more likely to be significantly positive. Although our results indicate that on average, the insurance commissions are related to value creation, we totally agree with the reviewer's comment that, some types of the insurance commission may not be valued by the market, that is, not related to future premiums. In that case, as the reviewer points out, the full capitalization of insurance commissions may not be appropriate. Empirically, we also recognize that if we are able to separate out the expenditures which are related to future benefits and those that are not, the empirical results would be even more comprehensive. Although, it is not attainable at this stage because almost every insurance firm provides only the aggregate amount of insurance commissions. Taken together, due to data limitation, our empirical results only indicate that on average the insurance commissions are valued by the market, but the important caveat is that some types of insurance commissions might not be associated with future premiums. So, one should not reach the conclusion that the full capitalization of insurance commissions is appropriate without reservation.

19. To ensure that the market has incorporated financial statement metrics into valuation, the excess return is based on the 3-month buy-and-hold return less the risk-free rate return for the period ending 1 month after the fiscal quarter end because most companies are required by the SEC to file 10-Q reports within 40 days.
20. Other operating expenses usually consist of administrative expenses, such as the costs incurred when processing or maintaining the policies.
21. Refer to BCA 45 of ED (2013/7) by IASB, available at http://www.masb.org.my/pdf .php?pdf=ED-Insurance-Contracts-Basis-for-Conclusions-June-2013a.pdf&file_path=pdf

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