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# Offer-Price Discount of Bank Seasoned Equity Offers: Do Voluntary and Involuntary Offers Convey Different Information?

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Seasoned equity offers made by undercapitalized banks (labeled involuntary offers) could be different from other seasoned equity offers because the issuer is presumably under regulatory duress to make up the shortfall in required capital. For this reason, involuntary offers may exhibit limited managerial opportunism. When a firm issues seasoned equity, investment bankers gather information about the issuer in the period between the registration of the offer and its issue date. The information gathered during the book-building process gets reflected in the offer price discount on the issue date. We find that the offer price discount appears to convey more information to investors on the issue date for the voluntary issuers. However, we find that both types of issues show signs of market timing, and that investors react negatively to both types of issuance announcements. Our results are robust to several checks.

***Keywords***: Bank seasoned equity offers; offer price discount; managerial opportunism.
***JEL Code***s: G21, G32

Ozgur Emre Ergungor is at the Federal Reserve Bank of Cleveland and can be reached at Ozgur.E.Ergungor@clev.frb.org or 216.579.3004. C.N.V. Krishnan is at the Weatherhead School of Management of Case Western Reserve University and can be reached at cnk2@cwru.edu. Ajai K. Singh is also at the Weatherhead School of Management and can be reached at ajai.singh@case.edu. Allan A. Zebedee is at the College of Business Administration of San Diego State University and can be reached at allan.zebedee@sdsu.edu.

# 1. Introduction

In the months leading to a Seasoned Equity Offering (SEO), as part of its due diligence the lead investment banker collects information about the issuer and determines a preliminary range for the offer price of the stock.[1] Following the registration of the offer with the Securities and Exchange Commission (SEC), the lead underwriter gathers new information about the issuer during the book-building process. The discount at which the seasoned equity is offered relative to the stock price just preceding the issue date is called the "Offer Price Discount" (OPD).[2] Altinkilic and Hansen (2003) make the case that for industrial SEOs, the investment bankers convey this updated information to their buy-side investors via the offer price discount. Issue day price reaction is more negative the larger the offer price discount.[3]

Prior academic research has excluded bank SEOs while analyzing the stock price impact of the offer price discount. However, bank SEOs provide an interesting laboratory setting for examining the information gathering process and the price discount-effect because Cornett and Tehranian (1994) document that all bank seasoned equity issues are not created equal. Cornett and Tehranian segregate SEOs made by banks that are already adequately capitalized from offers where the issuing institution has fallen below the capital adequacy standard. They label the former "Voluntary" and the latter as "Involuntary" SEOs because the issuer is presumably under regulatory duress to make up the shortfall in required capital. Cornett and Tehranian present evidence which suggests that Voluntary offers are possibly made by opportunistic managers, issuing overvalued stock. On the other hand, they argue that the discretion to optimally time Involuntary offers may be relatively limited because of the pressure from bank regulators to raise equity capital.

If investment bankers gather evidence of managerial opportunism in the interim period between the announcement date and the issue date for Voluntary issuers, they may signal this information to their buy-side clients by setting deeper discounts for such offers. On the other hand, the discount on the *Involuntary* issues may simply represent the investment

[1] Lowry and Schwert (2004) document that even public information is not fully incorporated into the initial price range.

[2] Benveniste and Spindt (1986) argue that price discount is the means by which the investment banker compensates institutional investors for investigating the equity value of the firm and providing information about the demand for the offer. Parsons and Raviv (1985) argue that for issuers about whom investors have more heterogeneous beliefs (and hence, valuations), the price discount will be higher. Loderer, Sheehan, and Kadlec (1991) and Gerard and Nanda (1993) advance the idea that the offer price discounts can be inflated through manipulative trading between the announcement date and the offer date.

[3] Singh (1997) examines utilities, and Safieddine and Wilhelm (1996) examine a combination of industrials and utilities.

banker's desire to make the equity of a troubled bank attractive to investors. If that is the case, the market may react more negatively to the discount on voluntary issues than on involuntary issues. So, the first question we address in our paper is the following. Does the market interpret the offer price discount differently for Voluntary and Involuntary issuers?

We find that there is indeed a difference in the market reaction to the offer price discount between the two types of offers. Although the average *magnitude* of the discount is similar for both types of issues, the market's response to the discount is not. The discount results in a significantly larger negative marginal price impact for Voluntary issues relative to Involuntary issues. Thus, there appears to be new negative information in the offer price discount *only* for the Voluntary issues.

Even though this result seems to confirm that the investment banker signals the opportunistic behavior of the *Voluntary* issuers through the discount on the issue date, we cannot yet completely rule out opportunistic behavior by the *Involuntary* issuers. The market may have already reacted to the opportunistic behavior of the involuntary issuers on the *announcement* date. But what would generate this asymmetry in event windows? Put differently, when would one expect to see the market reaction to anticipated opportunism if the issuer is a well-capitalized bank vs. an undercapitalized bank?

If the issuer is under-capitalized, the market will realize upon announcement that the issuer has chosen an expensive form of raising capital by tapping outside equity. Undercapitalized banks often use alternative methods to fix their capital adequacy problems, such as restricting asset growth or retaining a larger fraction of their earnings.[4] Our discussions with regulators confirmed that undercapitalized banks *do* get sufficient time to become adequately capitalized through a variety of ways. Thus, resorting to an SEO to raise additional equity to meet capital adequacy requirements may strike investors in much the same way as they regard SEOs by well-capitalized banks. As a matter of fact, we find that the announcements of *both* types of offers are timed after a significant stock price run-up.[5] If the pre-event run-up is evidence of managerial opportunism and ability to time the SEO, then the fact that it does not differ across the two types of bank SEOs is evidence that managers are able to time the Involuntary offers as well.

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[4] These alternative methods also include shrinking in size, and adjusting the balance sheet towards assets with lower capital charge. For example, a bank can sell its mortgage portfolio and replace it with mortgage-backed securities. This arrangement reduces a bank's credit risk exposure and cuts its capital charge by more than half (4 cents for every dollar in mortgages versus 1.6 cents for every dollar in Government Sponsored Enterprise backed Mortgage Backed Securities).

[5] Cornett, Mehran and Tehranian (1998) observe a significant stock price run-up for both types of issues, which contradicts Cornett and Tehranian's (1994) finding that the run-up is zero for involuntary issuers.

However, the key difference between a voluntary and an involuntary issuer is that there is still some uncertainty on the announcement date about the true intention of the voluntary issuer. Well-capitalized issuers may have valuable investment opportunities and room to grow, while the growth of undercapitalized banks is severely restricted. In that case, the market may conclude on the announcement date that the involuntary (undercapitalized) issuer is most likely acting opportunistically. However, the market may wait for the investment bank's discount signal before passing a final judgment on the managerial opportunism of the voluntary (well-capitalized) issuer. In other words, the market reaction to voluntary issuers on the announcement date is only partial with the remainder occurring on the issue date as a function of the discount.

To test our hypothesis that the reaction to the opportunism of involuntary issuers occurs on the announcement date, we go back in time and ask the following question: does the market react negatively to the announcement of involuntary issues?

We find that the announcement period market reaction is significantly negative for *both* Involuntary and Voluntary SEOs. Because this finding is not consistent with Cornett and Tehranian's result that the reaction to involuntary issue announcement is *zero*, we perform a battery of robustness checks of our announcement period results. First, we re-classify all SEOs into Voluntary and Involuntary issues in terms of a distance to failure measure, rather than by the regulatory capitalization norms. Second, we allow for a cushion around the regulatory capital adequacy norm cutoffs, because banks that are just barely overcapitalized by the strict norms may still feel pressure from the regulators and the market to shore up their equity capital. Third, we consider the possibility that the degree of *market* pressure to raise external capital may be an important issue that dominates regulatory norms. Banks that are adequately capitalized from a regulatory perspective may be undercapitalized relative to their peers. Accordingly we construct two market-based capital-adequacy norms. Each time we find that the market reacts significantly negatively to both types of issues.

Moreover, a fresh influx of equity capital into distressed banks implies a wealth transfer from the shareholders to the debt-holders or to the insurers of bank debt (the Merton model, 1974). This implies a negative market reaction to the announcement of an SEO by the most distressed banks. We find support for both the "market timing" and the "Merton model" explanations in the negative stock reaction to Involuntary issue announcements.

If indeed Voluntary and Involuntary issuers both engage in market-timing, as our findings at announcement or at their issue dates suggest, their long-run performance should be similar as well. However, Cornett, Mehran and Tehranian (1998) document significant differences in the long-run performance of voluntary and involuntary offers. We find that the

average return on assets, the average net-charge-off levels, and the risk-adjusted abnormal return in the 3-year post-issue period seem to be worse for the Voluntary issues than for the Involuntary issues, but *not* significantly so. Although the majority of our results are not supportive of the findings in Cornett and Tehranian, we do find that Voluntary issuers are significantly more likely to be delisted following a decline in stock price within five years after the issue. Thus we do offer marginal support for the findings in Cornett, Mehran and Tehranian.

Our paper's contributions are three-fold. First, we reject the Cornett and Tehranian hypothesis that the market-timing of Involuntary offers may be relatively limited because they are forced to raise equity capital under duress from bank regulators. Both types of issuers act opportunistically. Second, the negative reaction to involuntary SEO announcements is more than a simple reaction to anticipated opportunism. The reaction may also partly reflect the negative impact of the issue on the option value of the equity. Third, we show that there is an asymmetry in the reaction to the offer price discount between Voluntary and Involuntary offers. From this finding we infer that the reaction to opportunism occurs on the announcement date for involuntary issuers and it is split between the announcement and issue dates for voluntary issuers. For the Voluntary offers, the determining factor for the issue date reaction is the investment banker's signal through the offer price discount.

The remainder of the paper is organized as follows. The next section describes our data of bank SEOs segregated into Voluntary and Involuntary issues. Section 3 analyzes the issue date discount and the returns around issue date. Section 4 analyzes the announcement period returns. Section 5 examines the post-issue long-run performance. Section 6 concludes.

## 2. Voluntary and Involuntary SEOs

Our data comprises public issues of seasoned equity made by commercial banks and Bank Holding Companies (BHCs) in the United States for the period 1983 through 1999. The sample starts in 1983 because the 17 largest banks were first required to comply with new capital standards in June of that year.[6] We end our sample in 1999 in order to track delistings in the following 5-year period.

The seasoned common stock offering data are taken from the data files of Thomson Financial's SDC Platinum database. The SDC Platinum database provides data on issues,

[6] See Moulton (1987) and Cornett and Tehranian (1994).

including data on issue type, lead bank identity, announcement date, issue date, gross proceeds excluding the overallotment option, offer price, and shares issued. For *each* issue, we search the Lexis-Nexis newswires and the Dow Jones News Retrieval Publications Library (DJNR) for articles reporting the announcement of the offer, to confirm SDC's announcement date. If the announcement date from our Lexis-Nexis and DJNR search differs from that reported in SDC, we use the newswire/DJNR date. We also cross check the issuance dates with the Investment Dealer's Digest (IDD) for issues made until 1996. For issues made from 1996 onwards, we check the issue date from the EDGAR database of the Securities and Exchange Commission (SEC). If the issue date found from IDD or EDGAR differs from that reported by SDC, we use the IDD/EDGAR date.

A bank's capital adequacy is determined by its total capital ratio. Financial statement information needed to calculate the total capital ratios and other balance sheet and income statement data are obtained from the Federal Financial Institutions Examination Council's Reports and Income and Condition (call reports) for commercial banks and Y-9 statements for BHCs. To calculate the total capital ratios, we use the formulas published by the Board of Governors of the Federal Reserve System in the Federal Register on January 1st of each year (Title 12 Part 225 Appendix A for BHCs and Part 208 Appendix A for commercial banks). After 1989, we use capital adequacy formulas that reflect the risk-based capital guidelines. Thus, the calculation of the total capital ratio varies from period to period, and is different for commercial banks and BHCs. The details on how the total capital ratios are calculated, period-by-period, for both commercial banks and BHCs (together called "banks"), are shown in the Appendix.

We exclude all ADRs, secondary offers, and SEOs that have warrants or are part of a unit offer. Small offers are also deleted from the sample (those under $5 million). Next, we carefully went through the newswires and DJNR to determine whether an issue is made pursuant to a previous shelf registration. We also received from Disclosure the scanned cover pages of the prospectuses for several issues for which the issue date is relatively close to the announcement date, to determine shelf registrations. We then removed all issues that were made as part of a previous shelf registration. After these screens, we end up with a sample of 227 SEOs.

A large number of bank SEOs in 1985-86 resulted from new minimum total capital ratio requirements of 5.5% imposed in 1985 and 6% imposed in 1986. The reduction in the number of issues in the period 1988–90 was due to poor market conditions for new bank issues, possibly a consequence of a number of bank failures during this period. Bank SEOs again peaked in 1991-92 as banks felt the market pressure to reach the "well-capitalized" zone set

by the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA). The number of issues drops off subsequently because most banking firms appear to have raised the capital required to meet the new capital adequacy requirement.

We look at the minimum total capital ratio a bank must attain to be considered "well-capitalized" according to the Federal Reserve guidelines (or "Zone 1" before the "well-capitalized" zone was established by FDICIA). Between 1983 and 1989, this regulatory requirement in terms of total capital ratio was 7 percent (also see Cornett and Tehranian, 1994). In 1990 and 1991, it was 8 percent. After 1991, it has been set at 10 percent. Banks that are below these limits at the end of the quarter preceding the SEO announcement are classified as Involuntary (IVL) issuers, and those above as Voluntary (VL) issuers. Table 1 shows the distribution of VL and IVL issues on a year-by-year basis. The bulk of the IVL issues occur in the early 1980's at the introduction of the capital requirements.

Table 1 here

The average bank size in our final sample is around $14 billion in total assets, and the average SEO size is 1.66 percent of total assets. The average Carter-Manaster Reputation (*CMR*) score of the lead underwriters is around 8, indicating that the bank SEOs are brought to the market by high quality investment banks on average. Table 2 shows the descriptive statistics for our sample segregated into VL and IVL issues.

Table 2 here

As one would expect, by definition, the total capital ratio is significantly lower for IVL issuers, compared to the VL issuers. The average extent of overcapitalization for the VL issuers is 3.54 percent, while the average extent of undercapitalization for IVL issuers is 0.91 percent of issuer's total assets immediately before issue announcement. The IVL issuers are also smaller. A higher proportion of all IVL issues, as compared to the VL issues, are located in the Pre-Basel era (1983 - 1987).

## 3. Discount and Returns around Issue Date

Altinkilic and Hansen (2003) and Safieddine and Wilhelm (1996) examine the discount of seasoned equity offer price relative to the stock price just preceding the issue date for utilities and industrials. Following these papers, we compute the offer price discount, *Discount*, as

$\frac{(P_{-1} - OP)}{P_{-1}}$, where $P_{-1}$ is closing price on the day before the issue day, and $OP$ is the offer price. All stock price and returns data are taken from the Center for Research in Security Prices (CRSP) database.

Panel A of Table 3 shows that the mean Discount is 1.52% for IVL issues and 1.90% for the VL issues, both of which are significant. Their difference, however, is statistically insignificant. Thus, investment banks seem to offer equity of both the VL and the IVL issuers at relatively the same (significant) discount to the last closing price.

Table 3 here

However, as Altinkilic and Hansen (2003) argue, part of the Discount calculated above may have been expected by investors. Discount may be expected to increase with the relative amount of the offer (issue size relative to the issuer's market value of equity (MVE) a week before the issue) because of adverse selection and placement pressure. Discount may also be higher when the stock price is low because marketing of a low-priced stock may be more difficult, or when stock return volatility is high to compensate investors for the risk. Noting that issue date discount can be a function of the lead underwriter pedigree, the exchange in which the issue is listed, and the issue type (VL or IVL), we calculate discount surprise as the residual, $\varepsilon_D$, of the following regression:

$$\begin{aligned} Discount = {} & \beta_1 IVL + \beta_2 VL + \beta_3\, lnIssue \times IVL + \beta_4\, lnIssue \times VL + \beta_5\, lnMVE \times IVL + \beta_6\, lnMVE \times VL \\ & + \beta_7\, CMR \times IVL + \beta_8\, CMR \times VL + \beta_9\, Nasdaq \times IVL + \beta_{10}\, Nasdaq \times VL + \beta_{11} \frac{1}{P_{-5}} \times IVL \\ & + \beta_{12} \frac{1}{P_{-5}} \times VL + \beta_{13}\, Stdev \times IVL + \beta_{14}\, Stdev \times VL + \varepsilon_D, \end{aligned} \tag{1}$$

where, following Altinkilic and Hansen (2003), $P_{-5}$ is the closing price 5 days before the Issue date, and *Stdev* is the standard deviation of the market-adjusted return in the 100 day period from 121 days before the issue date through 22 days before the issue date. We compute the market-adjusted return on the issue date, *MARISS*, as the difference between the stock return on the issue date and the contemporaneous CRSP NYSE/AMEX/Nasdaq value-weighted market returns. The relative size of the offer is captured by the two variables: *lnIssue*, the natural log of the gross issue proceeds from the offering exclusive of overallotment options, and *lnMVE*, the natural log of the market value of equity as computed 7 days before the issue

date (again following Altinkilic and Hansen (2003)). The lead underwriter reputation is measured by *CMR*, the Carter-Manaster score, as modified by Ritter and made available on his web site: *http://bear.cba.ufl.edu/ritter/rank.xls.* We have three dummy variables in the regression equation: *Nasdaq* is a dummy variable that takes the value of 1 if the stock trades on Nasdaq, and 0 otherwise, *VL* and *IVL* take the value of 1 if the issue is Voluntary and Involuntary, respectively. Panel B of Table 3 shows that the only significant determinants of Discount are the intercept terms (*VL* and *IVL*), which are statistically indistinguishable; none of the above-mentioned observable variables are significant.

Next, we examine the issue day returns. The issue date return, *MARISS*, is insignificantly different from zero for both VL and IVL issues. We also examine separately banks that have greater than $1 billion in total assets at the end of the quarter before the issue announcement ("big" issuers) and issue sizes that are greater than 1% of the total assets of a bank ("big" issues). The results are similar (Table 4, Panel A). Figure 1 shows that there are no return outliers in both the VL and IVL sample.

To examine the link between issue-date returns and issue-date discount, we regress *MARISS* on the discount surprise. Other factors like the extent of undercapitalization or overcapitalization of a bank immediately prior to the issue announcement, or the pedigree of the investment bank bringing the issue to the market could influence market reaction to issue announcements. Therefore, we control for other possible factors that may influence issue date returns using the following regression specification:

$$MARISS = \beta_1 IVL + \beta_2 VL + \beta_3 UnderCap + \beta_4 OverCap + \beta_5 \varepsilon_D \times IVL + \beta_6 \varepsilon_D \times VL + \boldsymbol{\beta}'_{\mathbf{IVL}} \boldsymbol{X} \times IVL + \boldsymbol{\beta}'_{\mathbf{VL}} \boldsymbol{X} \times VL + \varepsilon_{ISS}, \quad (2)$$

where $\varepsilon_D$ is the discount surprise. The degree of undercapitalization, *UnderCap*, is the dollar amount of equity capital needed, as a fraction of total assets, to meet the capital requirements as of the end of the quarter before the issue announcement. *UnderCap* is zero for well-capitalized banks. The degree of overcapitalization, *OverCap*, is the dollar amount by which the equity capital exceeds the capital requirements as a fraction of total assets, at the end of the quarter before the issue announcement. *OverCap* is zero for undercapitalized banks. $\boldsymbol{X}$ is a vector of control variables that comprises *lnAsset, lnIssue, CMR, Nasdaq, AssetGr*$_{-1}$, *PreBasel,* and *FDICIA*. The variables, *Nasdaq*, *lnIssue* and *CMR* have already been defined before, *lnAsset* is the natural log of the total assets of the issuing bank at the end of the quarter immediately preceding issue announcement, *AssetGr*$_{-1}$ is the growth in total assets in the year preceding the issue announcement, *PreBasel* is a dummy that takes the value of 1 if the issue occurred before the Basel I capital adequacy regulatory norm was announced in 1988, and

*FDICIA* is a dummy that takes the value of 1 if the issue occurred after Basel I went into effect but before FDICIA was enacted in 1991.

Figure 1 and Table 4 here

Table 4 shows that, in line with the results found by others for industrials and utilities, the market reacts negatively to the news of discount on issue date. However, the price reaction is significantly negative to the discount surprise only for VL issues. In other words, although both types of issues feature discounts of similar magnitude, the information content of the discount is significantly more for Voluntary issues.[7] The investors appear to learn more about the opportunism and market-timing of the Voluntary issuers from the information conveyed by the investment bankers through the offer price discount on issue date.

The fact that the discount surprise does not have any significant information content for involuntary issues is not enough to exonerate involuntary issuers from allegations of opportunistic behavior. The market may have already reacted to the opportunistic behavior of the involuntary issuers on the *announcement* date. The reason opportunism may already be fully priced in on the announcement date for involuntary issuers is that while there is still some uncertainty about the true intent of voluntary issuers (i.e., opportunism vs. funding future growth), it is common knowledge that a capital-constrained bank's investment opportunities are restricted by regulators. The market may, therefore, conclude on the announcement date that the involuntary issuer is most likely acting opportunistically.

To test our hypothesis that the reaction to the opportunism of involuntary issuers occurs on the announcement date, we ask the following two questions. Does the market react negatively to the announcement of involuntary issues? Do involuntary issuers show signs of market-timing?

## 4. Announcement Date Returns

We calculate the announcement period abnormal returns, *MARAD(i,j)* as $\sum_{t=i}^{t=j}[r(t)-v(t)]$, where $r(t)$ is the stock return and $v(t)$ is the contemporaneous CRSP NYSE/AMEX/Nasdaq value-weighted market returns. Following this standard event study methodology, we compute the announcement period abnormal returns over several windows to allow for the

[7] We also formally test the null $H_0$: $\varepsilon_D$ x *IVL* versus $\varepsilon_D$ x *VL*, and find that the regression coefficients are different at the 10% significance level. The price effect of discount surprise is significantly more negative for VL issues as compared to IVL issues.

possibilities that investors might receive information at different points around the announcement date. We examine the announcement period abnormal returns for both our full sample period, 1983-1999, and for the sample period of Cornett and Tehranian (1994), 1983-1989, which we term the CT sample period. We have roughly the same number of VL and IVL issues that Cornett and Tehranian had: we have 1 less IVL issue, and 2 more VL issues. In contrast to Cornett and Tehranian, we find that the market reacts significantly negatively to *both* the Voluntary issues and the Involuntary issues in both our full sample period and in the CT period (Table 5). The announcement period market reaction is not significantly different between the Voluntary issues and Involuntary issues.

Table 5 here

In other words, we find that SEO announcements, whether Voluntary or Involuntary, convey bad news to current shareholders. This finding is robust to the announcement period window and to the sample period. Thus, our finding is that the market does not seem to distinguish between VL and IVL issuers, despite the possibility as suggested by Cornett and Tehranian (1994), that IVL issuers may have had limited discretion to time their issues because of regulatory pressure. In fact, the IVL issuers may be deliberately choosing to issue overpriced stock rather than use other options---as discussed earlier. We search for an indication of such opportunistic behavior by examining the pre-announcement run-up for both VL and IVL issuers. The pre-announcement abnormal return run-up, *MARAD(-60,-4)*, is significantly positive for each and statistically indistinguishable.[8] Our results suggest that both the *VL* and *IVL* issuers time their SEOs after a stock price run-up.

*4.1 Robustness checks of the Announcement period results*

Our finding does not support the well-known Cornett and Tehranian (1994) result that IVL issues are perceived to be different (upon their announcement) by the market from the VL issues because IVL issuers have limited discretion to time their issues because of regulatory pressure. This Cornett and Tehranian result on bank Voluntary and Involuntary seasoned equity offers is part of established literature in corporate finance. Unfortunately, the Cornett and Tehranian database is no longer accessible. It is therefore incumbent upon us to check that our result is robust. We do this in the following two ways.

[8] This result is consistent with Cornett, Mehran and Tehranian (1998), who document statistically indistinguishable pre-issue 1-year abnormal stock returns between VL and IVL issues.

*4.1.1 Checking for outliers*

We have just 1 more SEO in our sample during the Cornett and Tehranian period as compared to their sample. However, we cannot identify which of our sample observations represent 1 extra SEO. Hence, we need to check for announcement period return outliers for our sample of VL and IVL issues made in the CT period: 1983-1989.

Figure 2 here

As Figure 2 shows, there are no return outliers in the IVL sample. One could argue that there may be a couple of return outliers in the VL sample, but they are *negative* return outliers. If we drop them, the average announcement period market reaction for the VL sub-sample becomes more *positive*, which will make our results even more different from that of Cornett and Tehranian. Therefore, return outliers are neither the cause of our result nor the cause of the difference between our and Cornett and Tehranian's result.

*4.1.2 Allowing for a cushion in regulatory norms in segregating VL and IVL issuers*

A bank that is barely overcapitalized may feel uncomfortably close to the danger zone and may chose to issue equity to build a defensive cushion. One could classify those issuers among the involuntary ones. So, we allow for a 1 percent cushion over and above the regulatory capital adequacy norm in determining an issue to be an Involuntary one. This significantly increases the number of Involuntary issues in our full sample from 63 to 104 (from 58 to 90 in the CT period). Panel A of Table 6 shows that the mean announcement period abnormal returns are significantly negative for both the Voluntary and Involuntary issues. However in the CT period (1983-1989), which is also the pre-Basel I period, we do find that VL issuers experience a significantly more negative price reaction upon announcement. However, the significance disappears as we move the event window from (-1, 0) to (-1,+1) or (-3, +3).

Table 6 here

*4.1.3 Using the Distance to failure measure to segregate VL and IVL issuers*

It may be possible that bank regulators consider a "distance to failure" measure, in the vein of the credit rating agencies. We use Market Value of Equity divided by its standard deviation, calculated over the (-300,-5) window before the issue date, MVE/std(MVE), as our measure of distance to failure. The sample is now based only on those banks for which we

can compute the distance to failure based on the above methodology. We then cut this sample at the median into VL and IVL issuers. Panel B of Table 6 shows that the announcement period abnormal market return continues to be significantly negative for both the VL and IVL issuers, and the difference is insignificant.

*4.1.4 Using Market-determined Capital norms*

A banker's discretion to time seasoned equity issues may also be influenced by the market's expectation of how much capital a bank should carry. Hence, it is important that our result be also valid under market-based capital adequacy norms. So, we develop two methods to estimate the market's expectation of how much capital a bank needs. Our first market-determined capital adequacy measure is the Peer Portfolio or the *PP* approach. We construct, for each issuing commercial bank or BHC in our sample, a portfolio of non-issuing peers. A non-issuing peer for an issuing commercial bank (or BHC) is a commercial bank (BHC) that did not increase its capital through stock issue, private placement or rights offerings in the issue year or in the following two years (including banks that do not have traded equity as they may have traded debt and still be subject to market pressures). The average total capital ratio of the peer portfolio is the basis on which the market-determined capital adequacy norm is estimated for each issuing commercial bank or BHC in our sample.

We construct the peer portfolio for each issuer in our sample by comparing the issuing banking institution with the non-issuing ones on the basis of three variables: *Asset*, *Loan-to-Asset* and *Age*. *Asset* is the total assets of a commercial bank or BHC at the end of the calendar year immediately preceding the issue announcement, *Loan-to-Asset* is the ratio of loan assets to total assets as at the end of the calendar year immediately prior to the issue announcement, and *Age* is the age (in years) of the bank, as computed from the date of incorporation to the date of the issue announcement. *Asset* and *Loan-to-Asset* are proxies that capture the risk of the institution. Small banking institutions are less diversified and often lack access to capital markets; so, the non-issuing peer must be as large as the seasoned equity issuer. *Loan-to-Asset* represents the share of the risky assets in the balance sheet. Considering a group of peers close in *Age* to the issuing institution takes into account the age-appropriateness of the level of capitalization. Older banking firms are more efficient than younger ones, and are less likely to fail. (DeYoung and Hasan, 1998; DeYoung, Hasan, and Hunter, 2000).

To create the peer portfolio, we first choose 125 non-issuing commercial banks (50 non-issuing BHCs because BHC sample is smaller) that are closest in *Asset* size to each issuing commercial bank (BHC) as of December 31 of the year immediately preceding the issue.

From this matched sample, we pick 50 commercial banks (25 BHCs) that are closest in *Loan-to-Asset*. Finally, from this matched sample (matched to each issuing commercial bank or BHC in terms of asset size and loan to asset ratio), we pick the 5 that are closest in *Age*. We compute the average total capital ratio of these 5 non-issuing banks (BHCs). However, this average is only an estimate of the market requirement. The market may not necessarily view a banking institution that had a few basis points below the peer portfolio average as undercapitalized. So, we use one standard deviation of the average total capital ratio of the peer portfolio as the permissible error margin. The *PP* requirement is, thus, the peer portfolio average total capital ratio minus one standard deviation.

Our second market-determined capital adequacy measure builds on the notion that all the institutions in the peer portfolio satisfy the market requirement, as suggested by the lack of stock issues, private placements or rights offerings in the issue year or the following two years. In this case, equaling the total capital ratio of the institution with the lowest total capital ratio may be enough to satisfy the market requirement. Thus, the lowest total capital ratio from among the peer portfolio firms becomes the basis for our second market based capital requirement measure. We call this the Peer Minimum (*PM*) approach. If the market-determined total capital ratio requirement, computed using either of the above two methods, is below the regulatory requirement, the regulatory requirement becomes binding. So, the maximum of the regulatory requirement and the *PP* requirement is our *PP* capital adequacy norm, and the maximum of the regulatory requirement and the *PM* requirement is our *PM* capital adequacy norm.

Panel C of Table 6 shows that the average announcement period abnormal market returns for both VL and IVL issues are significantly negative when the VL-IVL segregation is done based on the *PM* and *PP* market norms, and there is no difference between them.

Our conclusion, therefore, is that the investors do not perceive Voluntary and Involuntary bank seasoned equity issues to be different at the time of their announcement.

*4.2 Is the Negative Announcement period reaction for IVL issuers a sure sign of opportunism?*

A negative market reaction to the announcement of an undercapitalized bank's SEO, is not proof that the root cause of the reaction is perceived market-timing. In this section, we search for signs of market-timing and analyze another plausible reason for the negative reaction.

Announcing an issue immediately after a stock price run-up implies market-timing (see Cornett and Tehranian (1994) and Cornett, Mehran, and Tehranian (1998)). If the negative market reaction is limited to those institutions that have experienced a positive run-up, then

the reaction can be interpreted as a response to perceived opportunism. Yet, this may not be the sole determinant of the market reaction. The Merton (1974) model implies that a fresh influx of equity capital into distressed banks entails a wealth transfer from the shareholders to the debt-holders, or alternatively, to the insurers of bank debt. We test both these hypotheses next.

*4.2.1 Opportunism in Involuntary Issues*

We segregate our IVL issues into those that experienced a positive stock price run-up in the 60 days before the announcement date, and those that did not. There are 43 IVL issuers that experienced a positive stock price run-up in the pre-announcement date. Panel A of Table 7 shows that the announcement period market reaction for these issues is significantly negative, and insignificantly different from zero for the other 20 IVL issuers that did not experience a positive stock price run-up just before issue announcement. Thus, the IVL issues that were announced immediately following a stock price run-up are perhaps opportunistic, like the VL issues, and like the VL issues, experience a significantly negative announcement period return of a magnitude similar to that for the VL issues.

Table 7 here

*4.2.2 The Merton Model Implication*

According to the Merton (1974) model, the value of risky debt can be viewed as equal to the value of risk-free debt less the value of the put option given to shareholders, which allows them to abandon the assets to bondholders if the firm value drops below the value of the debt --- i.e., the strike price. An equity influx lowers the strike price of the put option. The value of the put option declines with a decrease in the strike price. Therefore, the value of the risky debt goes up as it becomes safer. Because the asset values are not affected by the financing decisions, the increase in the value of debt comes at the expense of the equity holders. In other words, the equity issue is a wealth transfer from shareholders to bondholders. Well-capitalized banks do not suffer from the same problem because their debt may already be considered safe and the additional safety of the equity issue has marginal effect on the value of debt.

To gauge the impact of the wealth-transfer effect, we test the following regression specification:

$$MARAD(i,j) = \alpha_1 IVL + \alpha_2 VL + \gamma_1 ln(Dtf) \times IVL + \gamma_2 ln(Dtf) \times VL + \gamma_3 ln(Dtf) \times MARAD(-60,-4) \times IVL + \gamma_4 ln(Dtf) \times MARAD(-60,-4) \times VL + \gamma_5 MARAD(-60,-4) \times IVL + \gamma_6 MARAD(-60,-4) \times VL + \boldsymbol{\beta}'_{IVL} \boldsymbol{X} \times IVL + \boldsymbol{\beta}'_{VL} \boldsymbol{X} \times VL + \zeta_{it}, \quad (3)$$

where, as before, *Dtf*, is the distance to failure measure, and $\boldsymbol{X}$ is a vector of control variables that comprises *lnAsset, lnIssue, CMR, Nasdaq, AssetGr*$_{-1}$, *PreBasel,* and *FDICIA*.

The implication of the wealth-transfer effect is that the most-distressed banks will be the most negatively affected from the SEO announcement. If the stock price has been declining before the announcement (negative *MARAD(-60,-4)*) and the distance to failure is short (small *Dtf*), the announcement reaction must be the most negative. Expressed in terms of the sign of the regression coefficients, we expect $\gamma_5$ to be positive, and $\gamma_3$ to be negative.

As expected, Panel B of Table 7 shows that the interaction term *ln(Dtf)* × *MARAD(-60,-4)* has a significantly negative coefficient and *MARAD(-60,-4)* has a significantly positive coefficient. This confirms the Merton model prediction: when an undercapitalized, distressed bank announces a stock issue, the equity holders stand to lose the most. Hence the stock price reacts significantly negatively upon such announcements.

Thus, both managerial opportunism and the reduction in the risk of a distressed bank are reasons for the announcement period return being significantly negative, on average, for the Involuntary issuers. But which one dominates? If the wealth-transfer (Merton model) effect is dominant, then we would expect to see the opportunistic voluntary issuers to perform more poorly than the involuntary issuers in the long-run, as evidenced in Cornett, Mehran and Tehranian (1998). If the market-timing is the dominant factor, we would expect to see both types of issuers to perform equally badly.

In the next section, we analyze the long-run performance measures to find the dominant factor.

## 5. Post-Issue long-run performance

We examine 3 different measures of long-run performance: the risk-adjusted abnormal returns, the average return on assets, and the average net charge-offs level. Our measure of post-issue long-run risk-adjusted returns is *FFAR*, a calendar-time four-factor-adjusted return (Carhart, 1997) at the end of 36 months after the issue month for banks that have 36 months of continuous returns data available on CRSP. The four factors are the three Fama French factors and the Carhart momentum factor. From investors' point of view, recent work by Fama and French (1992, 1993, 1995 and 1996) indicates that a factor model of risk-adjustments may better explain the cross section of stock returns. Their three factors are *RM*, the excess return (over the risk free rate) on the market portfolio, *SMB*, the return on a zero

investment portfolio formed by subtracting the return on a small firm portfolio from the return on a big firm portfolio, and *HML*, the return on a zero investment portfolio calculated as the return on a portfolio of high book-to-market stocks minus the return on a portfolio of low book-to-market stocks. Carhart (1997) shows that the four-factor model that includes the momentum factor, *UMD*, results in risk-adjusted abnormal returns that have somewhat better properties.[9] The four-factor time-series regression model is

$$r_{it} = \alpha_i + b_i \times RM_t + s_i \times SMB_t + h_i \times HML_t + u_i \times UMD_t + \zeta_{it}, \quad (4)$$

where $r_{it}$ is the excess return (over the risk free rate) on stock or portfolio $i$ over period $t$, and $\zeta$ is an error term. The coefficients $b$, $s$, $h$, and $u$ are time-invariant risk-loadings. The regression intercept $\alpha$ is *FFAR*. As Gompers and Lerner (2003) emphasize, it has an interpretation analogous to that of Jensen's alpha in a CAPM framework. Our second measure of long-run performance is the Return on Assets, computed as Net Income divided by Total Assets, averaged over the 3 years after the offer annually, *ROA*. Our third measure of long-run performance is the Net-Charge-offs levels, averaged over the 3 years after the offer annually, *NCO*. All figures needed to compute *ROA* and *NCO* are taken from the Federal Financial Institutions Examination Council's Reports and Income and Condition (call reports) for commercial banks and Y-9 statements for BHCs. Panel A of Table 8 shows the mean and median numbers for the VL and IVL issues for both the full sample and the pre-Basel I periods.

Table 8 here

Panel A shows that across all 3 measures of long-run performance of the firm, and for both time periods examined, the VL issuers seem to perform worse than the IVL issuers post-issue, but *not* significantly so. The net-charge-off numbers are significantly different between these 2 samples of SEOs but only in the 1983-1989 period (*NCO* is higher for the Voluntary issuers). This is consistent with our finding that voluntary and involuntary issuers can be equally opportunistic.[10]

[9] We obtain the necessary factor returns from Ken French's web site at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

[10] This finding weakly confirms the findings of Cornett, Mehran and Tehranian (1998) who find a significant difference in the post-issue performance in the 1983-1989 period using long-run BHAR and matched-adjusted ROA.

Next, we examine the delistings from CRSP within 5 years post issue. We distinguish between *Positive Delistings*, where the bank's market-adjusted stock return is positive in the 60-day window prior to the delisting and *Negative Delistings*, where the return is negative. Denoting the individual response levels by $d \in \{-1, 0, +1\}$ where "-1" indicates a negative delisting event, "+1" a positive event and surviving banks are denoted by "0", we fit a cumulative complementary log-log (cloglog) model defined as,

$$g\left(\Pr(d \le k\right) = \alpha_k + \beta' \boldsymbol{X}$$

where $g(p) = \log\left(-\log(1-p)\right)$, $k$ equals +1 or 0, and $\boldsymbol{X}$ comprises *lnAsset, lnIssue, CMR, Nasdaq, AssetGr-1, RealEstate,* $\varepsilon_D$, $\varepsilon_{ISS}$, *Branches, Previss,* $ROA_0$, $NCO_0$, *Age, Capratio, VL, PreBasel,* and *FDICIA*. *Branches* is the natural log of a bank's number of branches. The number of branches may determine how attractive the bank is as a takeover target. *RealEstate* is the share of real estate loans in a bank's total assets. It captures the effect of the real-estate debacle in the late 1980s on the takeover probability of a bank. *Age* is the natural log of a bank's age plus one. Younger banks tend to disappear faster. *Previss* is a dummy that equals one if the bank has multiple SEOs within a 5-year time frame and zero otherwise. $ROA_0$ and $NCO_0$ are the return-on-assets and net charge-offs as a percentage of assets at the time of issue.

Cloglog is the appropriate link function when the modeled event is a rare occurrence and observations are not evenly distributed across response levels.[11] The first column of Panel B of Table 8 presents the results, which shows that an equal slope assumption is rejected. Therefore, it is more appropriate to analyze positive and negative outcomes separately.

We estimate a Split Population Survival Model (SPSM) (Schmidt and Witte, 1989) to allow for a non-zero survival probability. In other words, we define the log-likelihood contribution for bank i as

$$\ln L_i = d_i \ln\left((1-c)h_{it}S_{it-1}\right) + (1-d_i)\ln\left(c + (1-c)S_{it}\right) \qquad (5)$$

where $d$ is the delisting indicator (=1 if delisting observed, 0 otherwise), $c$ is the survival probability, $S_i$ is the discrete-time survivor function defined as $S_{it} = \prod_{j=1}^{t}(1-h_{ij})$, $h_{it}$ is the discrete time hazard, which has the cloglog form, $h_{it} = 1 - \exp\left(-\exp\left(\log(t) + \beta' x_i\right)\right)$, where $\log(t)$ represents duration dependence in the hazard common to each issuer. The first term

[11] We find that the Cloglog function provides a better fit to our data than either logit or probit link functions based on the maximum log likelihood. These results are omitted from the paper but available upon request.

in (5) is the contribution to the likelihood by the delisted banks. It represents (1-c) *($h_{it}$ : probability of the delisting in the given quarter) *($S_{i\ t-1}$ : probability of survival to end of previous time quarter). The second term in (5) represents the probability of survival, *c*, plus the probability that the issuer will delist in the future but the delisting is not observed in the observation period.

The last four columns of Panel B present the results for positive and negative delistings. The first result reported is the standard cumulative complementary log-log model, which assumes that the survival probability (no delisting), *c*, is zero. While this assumption cannot be rejected among the negative outcomes, it is strongly rejected among the positive outcomes. In other words, we cannot reject the null that all banks will eventually face a negative delisting. The null that all banks will face a positive delisting is rejected at 1% confidence level; the probability of eluding the positive outcome is 81 percent. We find that the *VL* dummy reduces the probability of a positive delisting event and increases the probability of a negative event. This result is consistent with the conjecture that voluntary issues are made by opportunistic managers and that these issuers are more likely to get delisted after a negative stock price run down within 5 years after the issue. Thus, we find marginal support for the Cornett, Mehran, and Tehranian results.

Our analysis of long-run performance suggests that, with the exception of the delisting analysis, the long-run performance is statistically the same for both types of offers. Therefore, of the two forces that generate the negative announcement period return, Merton-model vs. market-timing effects, market timing seems to be the dominant force.

## 6. Conclusion

Cornett and Tehranian (1994) segregate bank seasoned equity offers (SEOs) into Voluntary and Involuntary offers. They contend that Involuntary issues are made by banks under duress from bank examiners because they are not adequately capitalized. Accordingly, the "window of opportunity" or issue timing discretion may be limited for such offers. On the other hand, Voluntary issues are made by already well-capitalized banks and are more likely to be made by opportunistic managers when their stock is overvalued.

In this comprehensive study of bank SEOs, we find that the market does not appear to perceive the Voluntary and Involuntary issuers to be different. *Both* the Involuntary issuers and the Voluntary issuers experience similar significant negative price reaction upon announcement. We cannot support Cornett and Tehranian's results for the overall sample period as well as for the sub-period that corresponds to the Cornett and Tehranian study sample period. We also find significant stock price run-up prior to issue announcements for

both Voluntary and Involuntary issuers: both types of issuers seem to be timing their seasoned equity issues.

We find no significant difference in the amount of offer price discount between the two types of offers. However, we find that the price effect of the unexpected offer price discount is significantly negative for Voluntary issues, and insignificant for Involuntary issues. We conjecture that the Involuntary issuers issue stock because they need the equity capital for regulatory reasons. But they also approach the market at an opportune time given the constraint that they need to raise equity capital within a certain time period. The market reaction at the time of announcement appears to correctly price in the extent of market timing. The offer price discount of an involuntary issue is a sign of the investment banker's desire to place the issue of a troubled bank and not necessarily a signal of opportunism. Voluntary issuers, on the other hand, face no urgent capital requirement, and have more discretion to optimally time their issues. It appears that all information about managerial opportunism in Voluntary issues have not been priced in at the time of announcement. Some more evidence is gathered by the investment bankers in the period between the announcement and issue dates and passed on to investors via the offer price discount. Hence, the offer price discount is followed immediately by a significantly negative price effect on issue date for these issuers.

Indeed, in the long-run post-issue, we confirm that the Involuntary issuers perform no worse than the Voluntary issuers in terms of the average return on assets, the average net charge-offs levels, the 4-factor risk-adjusted abnormal returns. Voluntary issuers perform significantly worse in terms of the probability of delisting after a price run-down and the average net charge-offs levels in the 1983-1989 period.

The conclusion is that the "market for lemons" problem exists, albeit in varying degrees, for all equity issuances, and hence the market reaction is also generally negative to all equity issue announcements.

# References

Altinkilic, O, and R. Hansen, 2003, Discounting and Underpricing in seasoned equity offers, *Journal of Financial Economics* 69, 285-323.

Benveniste, L.M., and P.A. Spindt, 1989, How investment bankers determine the offer price and allocation of new issues, *Journal of Financial Economics* 24, 213-232.

Carhart, M.M., 1997, On persistence in mutual fund performance, *Journal of Finance* 52, 57-82.

Cornett M.M. and H. Tehranian, 1994, An examination of voluntary versus involuntary security issuances by commercial banks: The impact of capital regulations on common stock returns, *Journal of Financial Economics* 35, 99-122.

Cornett, M.M., H. Mehran and H. Tehranian, 1998, Are financial markets overly optimistic about the prospects of firms that issue equity? Evidence from voluntary versus involuntary equity issuances by banks, *Journal of Finance* 53(6), 2139-2159.

DeYoung R., and I. Hasan, 1998, "The Performance of de Novo Commercial Banks: A Profit Efficiency Approach," *Journal of Banking and Finance*, 22, 565-587.

DeYoung R., I. Hasan, and C. Hunter, 2000, "The Determinants of de Novo Bank Survival", New York University, Solomon Center Working Paper: S/00/22.

Fama, E.F., and K.R. French, 1992, The cross-section of expected stock returns, *Journal of Finance* 47, 427-65.

Fama, E.F., and K.R. French, 1993, Common risk factors in the returns on stock and bonds, *Journal of Financial Economics* 33, 3-56.

Fama, E.F., and K.R. French, 1995, Size and book-to-market factors in earnings and returns, *Journal of Finance* 50, 131-55.

Fama, E.F., and K.R. French, 1996, Multifactor explanations of asset pricing anomalies, *Journal of Finance* 51, 55-84.

Gerard, B., and V. Nanda, 1993, Trading and manipulation around seasoned equity offerings, *Journal of Finance* 48, 213-246.

Gompers, P.A., and J. Lerner, 2003, The really long-run performance of initial public offerings: The pre-Nasdaq evidence, *Journal of Finance* 58, 1355-92.

Loderer, C.F., D. Sheehan, and G. Kadlec, 1991, The pricing of equity offerings, *Journal of Financial Economics* 29, 34-58.

Lowry, M., and G.W. Schwert, 2004, Is the IPO pricing process efficient? *Journal of Financial Economics* 71, 3-26.

Merton, R., 1974, On the pricing of corporate debt: The risk structure of interest rates, *Journal of Finance* 29, 449-470.

Moulton J.M., 1987, New guidelines for bank capital: An attempt to reflect risk, *Federal Reserve Bank of Philadelphia Business Review*, July/August, 19-33.

Parsons, J.E., and A. Raviv, 1985, Underpricing of seasoned issues, *Journal of Financial Economics* 14, 377-397.

Safieddine, A., and W. Wilhelm, 1996, An empirical investigation of short-selling activity prior to seasoned equity offerings, *Journal of Finance* 51, 729-749.

Schmidt, P., and A.D. Witte, 1989, Predicting Criminal Recidivism using 'Split Population' survival time models, *Journal of Econometrics* 40, 141-159.

Singh, A., 1997, Layoffs and underwritten rights offers, *Journal of Financial Economics* 43, 105-130.

## Appendix
## Table A.1
## Calculations of total capital ratio for Bank Holding Companies

This table shows year-by-year detailed calculations of total capital ratio for bank holding companies. Total capital ratio is (Tier 1 + Tier 2)/ Asset Base.

| Period | Tier 1 | Tier 2 | Asset Base | Remarks |
|---|---|---|---|---|
| **Pre-1990** | Common stock (CS) | Limited-life preferred stock (LLPS) | Total assets | (ECM+ECN+PDI+PPS) in Tier 1< 0.333 Tier 1 |
| | Perpetual preferred stock (PPS) (restricted) | Subordinated notes and debentures and unsecured long-term debt (SND + LTD) | ALL | (ECM+ECN+PDI) in Tier 1< 0.2 Tier 1 |
| | Surplus (SU) | MCI + PDI + PPS+ ECM not allowed in Tier 1 | Deduct Allocated transfer risk reserves (TRR) | ECM in Tier 1< 0.1 Tier 1 |
| | Undivided profits (UP) | | | Tier 2< 0.5 Tier 1 |
| | Contingency and other capital reserves (CR) | | | |
| | Equity commitment notes (ECM) (restricted) | | | |
| | Equity contract notes (ECN) (restricted) | | | |
| | Allowance for loan and lease losses (exclusive of allocated transfer risk reserves) (ALL) | | | |
| | Minority Interest (MI) | | | |
| | Perpetual debt instruments (PDI) (restricted) | | | |
| | Deduct CS and PPS to redeem ECM | | | |
| | Deduct CS and PPS to redeem ECN | | | |
| **1990-1991** | CS | NPPS + CPPS not allowed in Tier 1 | Risk-weighted assets (exclusive of IUBS and RHCI) | (NPPS+CPPS) in Tier 1<0.33 (CS+SU+UP+CR+MI) |
| | Noncumulative PPS (NPPS) (restricted) | ALL (restricted) | Deduct ALL in excess of allowed amount in Tier 2 | ALL in Tier 2< 0.015 Risk-weighted assets |
| | Cumulative PPS (CPPS) (restricted) | Maturity-weighted Intermediate-term preferred stock (ITPS) (restricted) | Deduct Goodwill | (SND+ITPS)< 0.5 Tier 1 - Goodwill |
| | SU | Maturity-weighted Long-term preferred stock (LTPS) | Deduct TRR | LTD< 0.5 Tier 1 - Goodwill |
| | UP | Maturity-weighted SND (restricted) | | Tier 2< Tier 1 - Goodwill |
| | CR | Maturity-weighted LTD (restricted) | | Deduct Reciprocal holdings of capital instruments (RHCI) of banking organizations from Total Capital BUT not from components |
| | MI | PDI | | If Tier 2 excl. IUBS<0.5 IUBS Deduct excess IUBS from Tier 1 |
| | Deduct Goodwill | ECM | | If a bank is engaging in high-risk activities, all intangible assets rather than goodwill are deducted from Tier 1 |
| | Deduct 0.5 Investments in unconsolidated banking subsidiaries (IUBS) | ECN | | |

## Table A.1 contd.

| | | | | |
|---|---|---|---|---|
| **1990-1991 contd** | | Hybrid capital instruments (HCI)<br>Deduct CS and PPS to redeem ECM<br>Deduct CS and PPS to redeem ECN<br>Deduct 0.5 IUBS | | |
| **1992** | Same as 1990-1991 | Same as 1990-1991 | Same as 1990-1991 | Same as 1990-1991 EXCEPT<br>ALL in Tier 2< 0.0125 Risk-weighted assets |
| **1993-1994** | Same as 1992 EXCEPT<br>Non-cumulative PPS (NPPS) (now unrestricted) | Same as 1992 EXCEPT<br>CPPS not allowed in Tier 1 | Same as 1992 | Same as 1992 EXCEPT<br>CPPS in Tier 1<0.33 (CS+SU+UP+CR+MI+NPPS) |
| **1995-1998** | Same as 1993-1995 EXCEPT<br>Deduct All intangible assets EXCEPT Mortgage servicing rights (MSR) (restricted) and Purchased credit card relationships (PCCR) (restricted)<br>Deduct Deferred tax assets (DTA) (see remark) | Same as 1993-1995 EXCEPT<br>Include MSR + PCCR excluded from Tier 1 | Same as 1993-1995 EXCEPT<br>Deduct All intangible assets EXCEPT MSR and PCCR<br>Deduct Deferred tax assets (DTA) (see remark) | Same as 1993-1995 EXCEPT<br>(SND+ITPS)< 0.5 Tier 1 - Other intangibles<br>LTD< 0.5 Tier 1 - Other intangibles<br>Tier 2< Tier 1 - Other intangibles<br>(MSR + PCCR) in Tier 1< 0.5 Tier 1<br>PCCR in Tier 1< 0.25 Tier 1<br>DTA to be realized in the next 12 months can be included in Tier 1 upto 10 percent of Tier 1 |
| **Post-1998** | | SAME AS 1996-1998 EXCEPT<br>Include Unrealized holding gains on equity securities (UGE) (restricted) | | SAME AS 1996-1998 EXCEPT<br>Upto 45 percent of UGE may be included in Tier 2 |

**Table A.2**
**Calculations of total capital ratio for Banks**

This table shows year-by-year detailed calculations of total capital ratio for banks. Total capital ratio is (Tier 1 + Tier 2)/ Asset Base.

| Period | Tier 1 | Tier 2 | Asset Base | Remarks |
|---|---|---|---|---|
| **Pre-1990** | Common stock (CS) | Limited-life preferred stock (LLPS) | Average total assets | ECN in Tier 1$<$0.1667 Tier 1 |
| | Perpetual preferred stock (PPS) | Subordinated notes and debentures (SND) | Allowance for loan and lease losses (exclusive of allocated transfer risk reserves) | LLPS and SND in Tier 2$<$ 0.5 Tier 1 |
| | Surplus (SU) | Equity commitment notes (ECM) | Deduct Goodwill | |
| | Undivided profits (UP) | Deduct CS and PPS to redeem ECM | | |
| | Contingency and other capital reserves (CR) | | | |
| | Equity contract notes (ECN) | | | |
| | Allowance for loan and lease losses (exclusive of allocated transfer risk reserves) (ALL) | | | |
| | Minority Interest (MI) | | | |
| | Deduct Goodwill | | | |
| | Deduct CS and PPS to redeem ECN | | | |
| **1990-1991** | CS | ALL (restricted) | Risk-weighted assets (exclusive of ICS and RHCI) | NPPS<0.25 Tier 1 |
| | Noncumulative PPS (NPPS) | All other PPS | Deduct ALL in excess of allowed amount in Tier 2 | ALL <0.0125 Risk-weighted Assets |
| | SU | Long-term preferred stock (LTPS) (original maturity >20 years) | Deduct Allocated transfer risk reserves (TRR) | (SND+ITPS) < 0.5 Tier 1 net of goodwill |
| | UP | ECN | Deduct Goodwill | Deduct Investments in certain subsidiaries (ICS) from total capital but not from components |
| | CR | SND (restricted) | | Deduct Reciprocal holdings of capital instruments (RHCI) of banking organizations from Total Capital BUT not from components |
| | MI | Maturity-weighted Intermediate-term preferred stock (ITPS) (restricted) | | Tier 2 < Tier 1 net of goodwill |
| | Deduct Goodwill | Hybrid capital instruments (HCI) | | |

**Table A.2 contd.**

| | | | | |
|---|---|---|---|---|
| **1992-1994** | Same as 1990-1991 | Same as 1990-1991 | Same as 1990-1991 | Same as 1990-1991 EXCEPT<br>ALL in Tier 2< 0.0125 Risk-weighted assets |
| **1995-1998** | Same as 1992-1994 EXCEPT<br>*Deduct* all intangible assets EXCEPT purchased mortgage servicing rights (MSR) and purchased credit card relationships (PCCR) (restricted)<br>*Deduct* Deferred tax assets (DTA) (see remark) | Same as 1992-1994 | Same as 1992-1994 EXCEPT<br>*Deduct* All intangible assets EXCEPT MSR and PCCR<br>*Deduct* Deferred tax assets (DTA) (see remark) | Same as 1992-1994 EXCEPT<br>MSR + PCCR < 0.5 Tier 1<br>PCCR < 0.25 Tier 1<br>DTA to be realized in the next 12 months can be included in Tier 1 upto 10 percent of Tier 1 |
| **Post-1998** | Same as 1995-1998 | SAME AS 1995-1998 EXCEPT<br>*Include* Unrealized holding gains on equity securities (UGE) (restricted) | Same as 1995-1998 | Same as 1995-1998 EXCEPT<br>Upto 45 percent of UGE may be included in Tier 2<br>(MSR + PCCR) in Total Capital<Tier 1<br>PCCR < 0.25 Tier 1 |

**Table 1**
**Voluntary and Involuntary Seasoned Equity Offerings**

This table shows the year-by-year distribution of Voluntary (VL*)* and Involuntary (IVL*)* bank SEOs, of our sample of 227 bank seasoned equity offerings (SEOs), made in the 1983-1999 period.

| Year | IVL | VL | Year | IVL | VL |
|---|---|---|---|---|---|
| 1983 | 6 | 2 | 1992 | 2 | 32 |
| 1984 | 10 | 5 | 1993 | 0 | 12 |
| 1985 | 19 | 9 | 1994 | 0 | 0 |
| 1986 | 21 | 23 | 1995 | 0 | 6 |
| 1987 | 0 | 10 | 1996 | 0 | 4 |
| 1988 | 1 | 5 | 1997 | 1 | 5 |
| 1989 | 1 | 9 | 1998 | 1 | 8 |
| 1990 | 1 | 5 | 1999 | 0 | 3 |
| 1991 | 0 | 26 | N | 63 | 164 |

**Table 2**
**Descriptive Statistics of Bank SEOs Segregated into Voluntary and Involuntary Issuers**

This Panel shows the average, the median, the minimum and the maximum values of several issue- and issuer-related variables for our sample of 227 commercial bank and bank holding company (together referred to as banks) SEOs, segregated into Voluntary (*VL*) and Involuntary (*IVL*) issues. *Total Capital Ratio* is the ratio of Tier1+Tier2 capital over assets as defined in the Appendix., *Assets* of the issuing bank at the end of the quarter immediately preceding issue announcement, *Issue Size* is the gross issue proceeds from the offering exclusive of overallotment options, *CMR* is the Carter-Manaster investment banker reputation score, as modified by Ritter and made available on his web site: *http://bear.cba.ufl.edu/ritter/rank.xls, PreBasel* is a dummy that takes the value of 1 if the issue occurred *before* the Basel I capital adequacy regulatory norm was announced in 1988, and *FDICIA* is a dummy that takes the value of 1 if the issue occurred after Basel I went into effect but before FDICIA was enacted in 1991. *Branches* is the number of bank branches the bank/BHC has. *Age* is the bank's age. *Previss* is a dummy that equals 1 if the issuer had a previous SEO in the last five years before the current issue. *RealEstate* is the share of real estate loans in the bank's total assets. $ROA_0$ is the ROA before the issue. $NCO_0$ is the net charge offs-to-assets before the issue. $AssetGr_{-1}$ is the growth rate of assets in the year before issue announcement. *Dtf* is distance-to-failure defined as the market value of equity divided by the standard deviation of the market value of equity. The degree of undercapitalization, *UnderCap*, is the dollar amount of equity capital needed, as a fraction of total assets, to meet the capital requirements as of the end of the quarter before the issue announcement. The degree of overcapitalization, *OverCap*, is the dollar amount by which the equity capital exceeds the capital requirements as a fraction of total assets, at the end of the quarter before the issue announcement. "N/A" denotes "Not Applicable". All numbers are percentages where applicable.

(Table on next page)

| | Involuntary Sample n = 63 | | | | Voluntary Sample n = 164 | | | |
|---|---|---|---|---|---|---|---|---|
| | **Mean** | **Median** | **Minimum** | **Maximum** | **Mean** | **Median** | **Minimum** | **Maximum** |
| *Total Capital Ratio* | 6.29 | 6.29 | 4.05 | 9.88 | 13.10 | 12.65 | 7.02 | 26.55 |
| *Assets ($ mn)* | 8,212 | 1,723 | 40 | 173,597 | 14,555 | 3,050 | 61 | 194,415 |
| $\frac{IssueSize}{Assets}$ | 1.61 | 0.99 | 0.06 | 11.13 | 1.69 | 0.94 | 0.07 | 31.08 |
| *CMR* | 7.79 | 8.33 | 1.10 | 9.10 | 7.99 | 8.83 | 1.10 | 9.10 |
| *PreBasel* | 0.90 | 0 | 0 | 1 | 0.33 | 0 | 0 | 1 |
| *FDICIA* | 0.03 | 0 | 0 | 1 | 0.24 | 0 | 0 | 1 |
| *Branches* | 85 | 39 | 1 | 664 | 153 | 43 | 1 | 1860 |
| *Age* | 14 | 14 | 1 | 102 | 17 | 15 | 1 | 105 |
| *Previss* | 0.11 | 0 | 0 | 1 | 0.21 | 0 | 0 | 1 |
| *RealEstate* | 21.29 | 19.76 | 0.58 | 56.50 | 29.03 | 26.85 | 2.18 | 67.63 |
| $ROA_0$ | 0.85 | 0.83 | 0.96 | 1.78 | 0.82 | 0.88 | -1.55 | 3.32 |
| *MARAD(-60, -4)* | 4.57 | 5.39 | -24.75 | 36.36 | 6.09 | 5.11 | -25.58 | 63.36 |
| $NCO_0$ | 0.43 | 0.28 | -0.08 | 2.20 | 0.69 | 0.43 | 0.01 | 0.43 |
| $AssetGr_{-1}$ | 22.92 | 17.49 | -4.95 | 81.20 | 27.15 | 19.71 | -13.03 | 159.71 |
| *Dtf* † | 8.60 | 7.97 | 3.53 | 16.54 | 9.25 | 8.40 | 3.33 | 33.35 |
| *UnderCap* | 0.91 | 0.79 | 0.03 | 2.95 | N/A | N/A | N/A | N/A |
| *OverCap* | N/A | N/A | N/A | N/A | 3.54 | 2.80 | 0.02 | 14.37 |

† There are 45 observations in IVL and 131 observations in VL

**Table 3**
**Discount**

This table shows the offer date *Discount*, the difference between previous day closing price and offer price, divided by previous day closing price, and the discount surprise, the residual, $\varepsilon_D$, of the following regression specification:

$$Discount = \beta_1 IVL + \beta_2 VL + \beta_3\, lnIssue \times IVL + \beta_4\, lnIssue \times VL + \beta_5\, lnMVE \times IVL + \beta_6\, lnMVE \times VL + \beta_7\, CMR \times IVL + \beta_8\, CMR \times VL + \beta_9\, Nasdaq \times IVL + \beta_{10}\, Nasdaq \times VL + \beta_{11} \frac{1}{P_{-5}} \times IVL + \beta_{12} \frac{1}{P_{-5}} \times VL + \beta_{13}\, Stdev \times IVL + \beta_{14}\, Stdev \times VL + \varepsilon_D,$$

run separately for the *VL* and *IVL* issues, where $P_{-5}$ is the closing price 5 days before the Issue date, *stdev(-121,-22)* is the standard deviation of the market-adjusted return in the 100 day period from 121 days before the issue date through 22 days before the issue date. The relative size of the offer is captured by the two variables: *lnIssue*, the natural log of the gross issue proceeds from the offering exclusive of overallotment options, and *lnMVE*, the natural log of the market value of equity as computed 7 days before the offer date. *Nasdaq* is a dummy variable that takes the value of 1 if the stock trades on Nasdaq, and 0 otherwise. Panel A shows the mean *Discount* for *VL* and *IVL* issues, while Panel B shows the regression coefficients and the associated *t*-statistics in parenthesis of the above regression equation. Bold-italic numbers denote significantly different from zero at the 5%, significance level.

**Panel A**

| | | ***IVL*** | ***VL*** | **Difference of Means (p-values)** |
|---|---|---|---|---|
| **DISCOUNT (percent)** | N | 63 | 164 | |
| | **MEAN** | ***1.52*** | ***1.90*** | 0.53 |

**Panel B**

| | **DISCOUNT** | |
|---|---|---|
| | **IVL** | **VL** |
| *Intercept* | ***0.122*** | ***0.082*** |
| | ***(2.03)*** | ***(2.73)*** |
| *lnIssue* | 0.006 | 0.005 |
| | (0.60) | (1.25) |
| *CMR* | -0.003 | -0.002 |
| | (-0.30) | (-0.20) |
| *Nasdaq* | 0.004 | 0.005 |
| | (0.00) | (0.50) |
| $1/P_{-5}$ | -0.184 | 0.025 |
| | (-1.23) | (0.19) |
| *lnMVE* | -0.009 | ***-0.006*** |
| | (-0.90) | ***(2.40)*** |
| *Stdev(-121,-22)* | ***24.108*** | 6.573 |
| | ***(2.21)*** | (1.71) |
| Adjusted $R^2$ (%) | 31.01 | |
| Tests: (p-values) | | |
| *i)* $\beta_1 = \beta_2$ | 0.54 | |

**Table 4**
**Issue Date Returns**

Panel A shows the mean and median of the issue day returns, *MARISS*, for all banks, for banks that have greater than $1 billion in total assets at the end of the quarter before the issue announcement ("big" issuers), and for "big" issues: issue sizes that are greater than 1% of the total assets of a bank. Bold-italic numbers denote significantly different from zero at the 5%, significance level.
Panel B shows the regression coefficient estimates (*t*-statistics in parentheses) when the issue date returns are regressed on several issue-specific variables using the following regression specifications:

$$MARISS = \beta_1 IVL + \beta_2 VL + \beta_3 UnderCap + \beta_4 OverCap + \beta_5 \varepsilon_D \times IVL + \beta_6 \varepsilon_D \times VL + \boldsymbol{\beta}'_{IVL} \boldsymbol{X} \times IVL + \boldsymbol{\beta}'_{VL} \boldsymbol{X} \times VL + \varepsilon_{ISS}$$

run separately for the *VL* and *IVL* issues, where $\boldsymbol{X}$ is a vector of *CMR, lnAsset, lnIssue, PreBasel, FDICIA, Previss, Nasdaq, AssetGr*$_{-1}$, where *lnAsset* is the natural log of the total assets of the issuing bank at the end of the quarter immediately preceding issue announcement, *Previss* is a dummy that equals 1 if the issuer had a previous SEO in the last five years before the current issue and *AssetGr*$_{-1}$ is the growth rate of assets in the year preceding the issue, and $\varepsilon_D$ is the Discount surprise. Bold-italic numbers denote significantly different from zero at the 5% significance level.

**All SEOs**

| | | IVL | VL | Difference of Means (p-values) |
|---|---|---|---|---|
| ***MARISS* (percent)** | N | 63 | 164 | |
| | **MEAN** | 0.09 | -0.24 | 0.41 |
| | Median | -0.01 | -0.17 | |

**Big Issuers**

| | | IVL | VL | Difference of Means (p-values) |
|---|---|---|---|---|
| ***MARISS* (percent)** | N | 39 | 112 | |
| | **MEAN** | -0.02 | -0.31 | 0.43 |
| | Median | 0.02 | -0.31 | |

**Big Issues**

| | | IVL | VL | Difference of Means (p-values) |
|---|---|---|---|---|
| ***MARISS* (percent)** | N | 30 | 77 | |
| | **MEAN** | 0.15 | -0.23 | 0.59 |
| | Median | 0.09 | -0.29 | |

(Table continues on next page)

**Panel B**

| | ***MARISS*** | |
|---|---|---|
| | ***IVL*** | ***VL*** |
| *Intercept* | 0.002 | 0.004 |
| | (0.00) | (0.20) |
| *UnderCap for IVL* (*Overcap for VL)* | -0.54 | 0.017 |
| | (-1.10) | (0.21) |
| $\varepsilon_D$ | -0.134 | ***-0.293*** |
| | (-1.91) | ***(-5.86)*** |
| *lnIssue* | 0.002 | -0.003 |
| | (0.20) | (-0.30) |
| *CMR* | ***0.006*** | 0.002 |
| | ***(3.00)*** | (1.00) |
| *Nasdaq* | -0.005 | ***-0.009*** |
| | (-0.50) | ***(-2.57)*** |
| *LnAsset* | -0.001 | -0.004 |
| | (-0.33) | (-1.33) |
| *PreBasel* | -0.008 | 0.002 |
| | (-0.80) | (0.20) |
| *FDICIA* | ***-0.051*** | -0.002 |
| | ***(-2.55)*** | (-0.20) |
| $AssetGr_{-1}$ | -0.033 | -0.007 |
| | (-1.65) | (-0.70) |
| Adjusted $R^2$ (%) | 14.52 | |
| Tests: (p-values) | | |
| *i)* $\beta_1 = \beta_2$ | 0.90 | |
| *ii)* $\beta_5 = \beta_6$ | 0.07 | |

**Table 5**
**Announcement Period Returns**

This table shows descriptive statistics of the announcement period abnormal returns, *MARAD(i,j)* as $\sum_{t=i}^{t=j}[r(t)-v(t)]$, where *r(t)* is the stock return and *v(t)* is the contemporaneous CRSP NYSE/AMEX/Nasdaq value-weighted market returns. For example, *MARAD(-1, 0)* is the market-adjusted announcement period returns from the day before the announcement date to the announcement date, and *MARAD(-60,-4)* is the pre-announcement period abnormal returns from 60 days before issue announcement through 4 days before announcement date. The descriptive statistics are shown for Voluntary (*VL*) and Involuntary (*IVL*) issues made in all years 1983-1999, as well as for those made in the Cornett and Tehranian (*CT*) (1994) sample period: 1983-1989. Bold-italic numbers denote significantly different from zero at the 5%, significance level.

**Panel A**

| | | **All Observations** | | | ***CT* Years** | | |
|---|---|---|---|---|---|---|---|
| | | ***IVL*** | ***VL*** | **Difference of Means (p-values)** | ***IVL*** | ***VL*** | **Difference of Means (p-values)** |
| ***MARAD(-1,0)*** | N | 63 | 164 | | 58 | 63 | |
| | **MEAN** | ***-1.01*** | ***-0.88*** | 0.78 | ***-1.01*** | ***-1.12*** | 0.83 |
| | Median | -0.98 | -0.84 | | -0.95 | -0.97 | |
| ***MARAD (-1,+1)*** | N | 63 | 164 | | 58 | 63 | |
| | **MEAN** | ***-1.26*** | ***-1.16*** | 0.86 | ***-1.23*** | ***-1.77*** | 0.38 |
| | Median | -1.24 | -1.27 | | -1.24 | -1.92 | |
| ***MARAD (-3,+3)*** | N | 63 | 164 | | 58 | 63 | |
| | **MEAN** | ***-1.51*** | -0.74 | 0.30 | ***-1.36*** | ***-1.83*** | 0.56 |
| | Median | -1.62 | -0.76 | | -1.56 | -1.32 | |
| ***MARAD (-60,-4)*** | N | 63 | 164 | | 58 | 63 | |
| | **MEAN** | ***4.57*** | ***6.09*** | 0.44 | ***4.44*** | ***3.90*** | 0.80 |
| | Median | 5.39 | 5.11 | | 5.47 | 3.62 | |

**Table 6**
**Robustness Checks of Announcement Period Returns**

This Table shows the mean average announcement period abnormal returns for VL and IVL issues. The announcement period abnormal return *MARAD(i,j)* is calculated as $\sum_{t=i}^{t=j}[r(t)-v(t)]$, where *r(t)* is the stock return and *v(t)* is the contemporaneous CRSP NYSE/AMEX/Nasdaq value-weighted market returns. In Panel A, VL-IVL segregation is based on regulatory norms + 1% cushion. In Panel B, VL-IVL segregation is based on the distance to failure measure, computed as the market value of equity divided by the standard deviation of equity. In Panel C, the VL-IVL segregation is based on market-determined Peer minimum or Peer Average, PM and PP, norms. Bold-italic numbers denote significantly different from zero at the 5%, significance level.

**Panel A : 1% Equity Cushion Norm**

| | **All Observations** | | | ***CT* Years** | | |
|---|---|---|---|---|---|---|
| | ***IVL*** | ***VL*** | **Difference of Means (p-values)** | ***IVL*** | ***VL*** | **Difference of Means (p-values)** |
| N | 104 | 123 | | 90 | 31 | |
| ***MARAD (-1,0)*** | ***-0.565*** | ***-1.207*** | 0.127 | ***-0.788*** | ***-1.884*** | 0.063 |
| ***MARAD (-1,+1)*** | ***-1.048*** | ***-1.309*** | 0.595 | ***-1.219*** | ***-2.369*** | 0.104 |
| ***MARAD (-3,+3)*** | ***-1.018*** | -0.905 | 0.865 | ***-1.273*** | ***-2.573*** | 0.162 |

**Panel B : Distance to failure Norm**

| | **All Observations** | | | ***CT* Years** | | |
|---|---|---|---|---|---|---|
| | ***IVL*** | ***VL*** | **Difference of Means (p-values)** | ***IVL*** | ***VL*** | **Difference of Means (p-values)** |
| N | 88 | 88 | | 45 | 46 | |
| ***MARAD (-1,0)*** | ***-0.802*** | ***-1.110*** | 0.532 | ***-1.282*** | ***-1.173*** | 0.866 |
| ***MARAD (-1,+1)*** | ***-1.033*** | ***-1.350*** | 0.592 | ***-1.569*** | ***-1.596*** | 0.972 |
| ***MARAD (-3,+3)*** | -0.354 | ***-1.038*** | 0.370 | -1.464 | ***-1.361*** | 0.917 |

**Panel C: Market-determined Capital Adequacy Norm**

| | **PM Norms** | | | **PP Norms** | | |
|---|---|---|---|---|---|---|
| | ***IVL*** | ***VL*** | **Difference of Means (p-values)** | ***IVL*** | ***VL*** | **Difference of Means (p-values)** |
| N | 75 | 152 | | 92 | 135 | |
| ***MARAD (-1,0)*** | ***-1.04*** | ***-0.85*** | 0.66 | ***-0.65*** | ***-1.09*** | 0.30 |
| ***MARAD (-1,+1)*** | ***-1.36*** | ***-1.11*** | 0.63 | ***-1.07*** | ***-1.27*** | 0.69 |
| ***MARAD (-3,+3)*** | ***-1.51*** | -0.68 | 0.24 | ***-1.09*** | -0.87 | 0.74 |

**Table 7**
**Explanations for the Negative Announcement Period Returns for IVL Issues**

Panel A shows the average announcement period abnormal returns, *MARAD(-1,0)*, *MARAD(-1,+1)*, and *MARAD(-3,+3)*, for IVL issues segregated by those that had a positive price run-up in the pre-announcement period, and those that did not. Panel B shows the regression coefficients and the associated *t*-statistics when the announcement period abnormal returns are regressed on the distance to failure (*Dtf*), the pre-announcement period return, *MARAD(-60,-4)*, their interaction term and $\boldsymbol{X}$, a vector of control variables that comprises *lnAsset, lnIssue, CMR, Nasdaq, AssetGr*$_{-1}$, *PreBasel,* and *FDICIA*.

$$MARAD(i,j) = \alpha_1 IVL + \alpha_2 VL + \gamma_1 ln(Dtf) \times IVL + \gamma_2 ln(Dtf) \times VL + \gamma_3 ln(Dtf) \times MARAD(-60,-4) \times IVL + \gamma_4 ln(Dtf) \times MARAD(-60,-4) \times VL + \gamma_5 MARAD(-60,-4) \times IVL + \gamma_6 MARAD(-60,-4) \times VL + \boldsymbol{\beta}'_{IVL} \boldsymbol{X} \times IVL + \boldsymbol{\beta}'_{VL} \boldsymbol{X} \times VL + \zeta_{it},$$

Bold-italic numbers denote significantly different from zero at the 5% significance level.

**Panel A : Test of Managerial Opportunism: The Run-up**

| | | IVL | | |
|---|---|---|---|---|
| | | ***(-) Run-up*** | ***(+) Run-up*** | **Difference of Means (p-values)** |
| ***MARAD(-1,0)*** | N | 20 | 43 | |
| | **MEAN** | -0.101 | ***-1.40*** | 0.05 |
| ***MARAD (-1,+1)*** | N | 20 | 43 | |
| | **MEAN** | -0.300 | ***-1.70*** | 0.11 |
| ***MARAD (-3,+3)*** | N | 20 | 43 | |
| | **MEAN** | -0.700 | ***-1.90*** | 0.32 |

**Panel B: Test of the Merton Model**

| | ***MARAD (-1,0)*** | | ***MARAD (-1,+1)*** | |
|---|---|---|---|---|
| | ***IVL*** | ***VL*** | ***IVL*** | ***VL*** |
| *Intercept* | -0.071 | -0.011 | -0.103 | -0.022 |
| | (-1.01) | (-0.37) | (-1.29) | (-0.55) |
| *Ln(Dtf)* | 0.035 | -0.002 | 0.053 | -0.001 |
| | (1.75) | (-0.20) | (1.77) | (-0.10) |
| *Ln(Dtf)* x *MARAD(-60, -4)* | ***-0.509*** | -0.04 | ***-0.714*** | -0.028 |
| | ***(-2.04)*** | (-0.80) | ***(-2.46)*** | (-0.47) |
| *MARAD(-60, -4)* | 0.89 | 0.093 | ***1.285*** | 0.100 |
| | (-1.78) | (0.85) | ***(2.18)*** | (0.77) |
| Adjusted $R^2$ (%) | 6.65 | | 9.52 | |
| Tests: (p-values) | | | | |
| *i)* $\alpha_1 = \alpha_2$ | 0.90 | | 0.90 | |
| *ii)* $\gamma_3 = \gamma_4$ | 0.11 | | 0.04 | |

**Table 8**
**Post-issue Long-run Performance**

Panel A shows the mean and median value of the 3-year post issue *FFAR* (the 4-factor risk-adjusted long-run calendar time abnormal returns), *ROA* (the return on assets in the 3 years after the issue), and *NCO* (the net-charge-offs in the 3 years after the issue), for the *VL* and *IVL* issues. Panel B shows the probability of outcomes within 5 years after the issue, modeled using a cumulative complementary log-log model (-1 denotes negative delisting, 0 denotes not delisted, and +1 positive delisting), where positive delisting is the term used for banks that get delisted from CRSP within 5 years after the issue after a stock price run up, and negative delisting is the term used for banks that get delisted from CRSP within 5 years after the issue after a stock price run down. Bold-italic numbers denote significantly different from zero at the 5%, significance level. T-statistics are in parentheses.

**Panel A**

| | | **All Observations** | | | **Pre-Basel I Years (1983-1989)** | | |
|---|---|---|---|---|---|---|---|
| | | ***IVL*** | ***VL*** | **Difference of Means (p-values)** | ***IVL*** | ***VL*** | **Difference of Means (p-values)** |
| ***FFAR* (percent)** | N | 59 | 140 | | 55 | 55 | |
| | **MEAN** | 0.11 | -0.01 | 0.52 | 0.11 | -0.15 | 0.31 |
| | Median | 0.21 | 0.16 | | 0.21 | 0.13 | |
| ***ROA* (percent)** | N | 59 | 136 | | 54 | 52 | |
| | **MEAN** | ***0.73*** | ***0.61*** | 0.76 | ***0.70*** | -0.12 | 0.19 |
| | Median | 0.81 | 0.96 | | 0.81 | 0.70 | |
| ***NCO* (percent)** | N | 59 | 136 | | 54 | 52 | |
| | **MEAN** | ***0.53*** | ***0.71*** | 0.19 | ***0.54*** | ***1.10*** | 0.01 |
| | Median | 0.40 | 0.42 | | 0.38 | 0.60 | |

(Table continues on next page)

**Panel B**

| | | *Cumulative Complementary Log-Log*† | *Positive Delisting* | | *Negative Delisting* | |
|---|---|---|---|---|---|---|
| | | | *Complementary Log-Log* | *SPSM* | *Complementary Log-Log* | *SPSM* |
| **Hazard** | *Intercept* $_{(+1)}$ | ***-10.5548*** | ***-4.1328*** | ***-7.3708*** | ***-6.6435*** | |
| | | ***(40.17)*** | ***(-2.26)*** | ***(-2.18)*** | ***(-2.12)*** | |
| | *Intercept* $_{(0)}$ | ***-6.5019*** | | | | |
| | | ***(16.55)*** | | | | |
| | *Log(t)* | ***2.4337*** | 0.4960 | ***3.1577*** | ***1.2333*** | |
| | | ***(27.30)*** | (1.71) | ***(4.12)*** | ***(2.00)*** | |
| | $\varepsilon_{ISS}$ | 4.4875 | 7.2871 | ***39.0216*** | 5.1350 | |
| | | (0.85) | (1.01) | ***(2.50)*** | (0.40) | |
| | *Issue* | -0.0719 | -0.2325 | ***-2.9315*** | -0.5626 | |
| | | (0.21) | (-0.73) | ***(-3.65)*** | (-0.99) | |
| | *CMR* | -0.0160 | 0.0202 | ***0.7724*** | -0.1646 | *Pr (Survival) =0, reduces to the* ***Complementary Log-Log*** *model* |
| | | (0.03) | (0.13) | ***(2.13)*** | (-0.74) | |
| | *Capratio* | 0.5544 | 1.0775 | 4.8682 | -8.2109 | |
| | | (0.04) | (0.21) | (0.64) | (-0.96) | |
| | $\varepsilon_{D}$ | 1.4966 | -1.0245 | -33.1787 | 5.3083 | |
| | | (0.28) | (-0.24) | (-1.61) | (0.84) | |
| | *LnAsset* | -0.0567 | -0.3096 | ***-2.7869*** | ***-1.2052*** | |
| | | (0.18) | (-1.17) | ***(-3.91)*** | ***(-2.23)*** | |
| | *Branches* | 0.0001 | -0.1025 | -0.0256 | ***1.0941*** | |
| | | (0.02) | (-0.55) | (-0.09) | ***(2.21)*** | |
| | *RealEstate* | 1.2695 | ***-3.4875*** | 1.6792 | -1.2712 | |
| | | (1.62) | ***(-2.25)*** | (0.94) | (-0.49) | |
| | *VL* | 0.1345 | 0.3286 | ***-2.0412*** | ***2.8095*** | |
| | | (0.22) | (0.64) | ***(-2.61)*** | ***(2.39)*** | |
| **Survival** | *Intercept* | | | ***1.4411*** | | |
| | | | | ***(6.45)*** | | |
| *Score Test for the Equal Slopes Assumption (p-value)* | | <0.0001 | | | | |
| *Log Likelihood* | | -200.99 | -158.99 | -147.28 | -66.15 | |
| *Pr (Survival) = Test:* | | | | 0.809 | | |
| *Pr (Survival) =0* | | | | | | |
| | *Chi-Sqr.* | | | 23.420 | | |
| | *p-value* | | | 0.000 | | |

† Chi-square statistics in parentheses.

**Figure 1**

**Distribution of *MARISS(0,0)* for Voluntary and Involuntary issues made in 1983-1999.**

This figure shows the frequency histogram plots of the issue date abnormal returns, ***MARISS(0,0)***, for Voluntary and Involuntary issues made in our sample period 1983-1999.

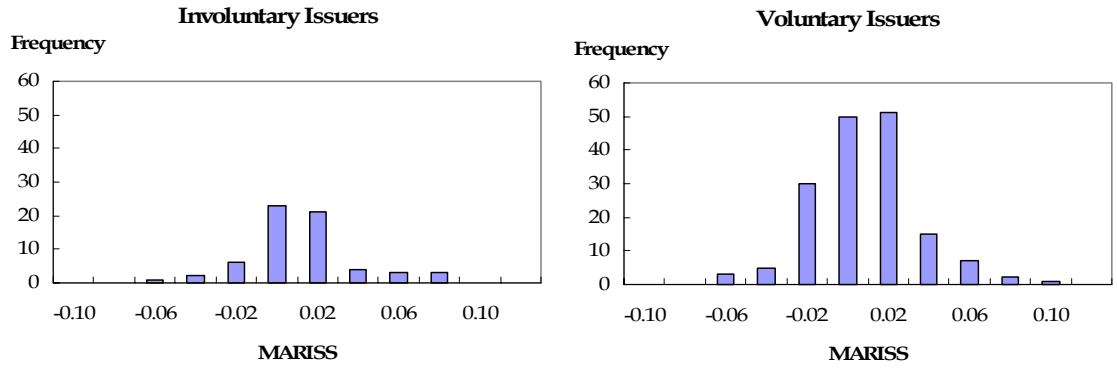


**Figure 2**

**Distribution of *MARAD (-1,+1)* for Voluntary and Involuntary issues made in the Cornett and Tehranian (1994) sample period 1983-1989.**

This figure shows the frequency histogram plots of the announcement period abnormal returns, *MARAD (-1,+1),* for Voluntary and Involuntary issues made in our sample period 1983-1989.